Urban Planning Concepts

Twitchell Dam Dredging Project

Biological Resources Assessment

rincon

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Environmental Scientists Planners Engineers

Biological Resources Assessment
Twitchell Dam Dredging Project
San Luis Obispo County

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Prepared by:

Rincon Consultants, Inc.
1530 Monterey Street, Suite D
San Luis Obispo, California 93401

Applicant:

Santa Maria Valley Water Conservation District
680 Simas Road
Santa Maria, California 93458
Contact: Darryl Souza, Chair

Assessor's Parcel Numbers: 090-411-020

Reporting Biologist:

Michael Tom,
Associate Biologist
1530 Monterey Street, Suite D
San Luis Obispo, California 93401
Phone 805-547-0900
Fax 805-547-0901
mtom@rinconconsultants.com

CERTIFICATION OF AUTHENTICITY

I hereby certify that this Biological Resources Assessment was prepared in accordance with accepted industry standards and that the statements furnished in the report and associated maps are true and correct to the best of my knowledge and belief.

Michael Tom,
Associate Biologist
Rincon Consultants, Inc.

Duane Vander Pluym,
Vice-President
Rincon Consultants, Inc.

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EXECUTIVE SUMMARY

This Biological Resources Assessment concerns the placement of dredge pipe across terrestrial habitat adjacent to Twitchell Reservoir. Rincon Consultants, Inc. conducted a reconnaissance-level biological survey within the approximately four-acre project site to document the existing site conditions and to evaluate the potential for adverse impacts to biological resources from implementation of the project. Three vegetation communities were identified within the Biological Study Area. No special status species were observed during the reconnaissance survey of the site. The site contains suitable habitat for seven special status plant species, one sensitive plant community and eight special status animal species. Native trees may also be impacted depending upon the path of the dredge pipe. Direct impacts to California red-legged frogs may occur if present. California red-legged frogs have been previously documented nearby and the project site contains suitable upland habitat. Because suitable avian nesting habitat occurs on-site, direct and indirect impacts to nesting birds may occur if construction occurs within the avian nesting season (February 1 through August 31). Mitigation measures related to these biological resources are recommended herein to reduce the potential project-related impacts to less than significant levels.

SECTION 1 – INTRODUCTION

Rincon Consultants, Inc. (Rincon) prepared this biological resources assessment (BRA) to document the existing conditions within the project site and to evaluate the potential for project-related impacts to biological resources during implementation of the Twitchell Dam Dredging Project. The approximately 4-acre project site is located within unincorporated areas of San Luis Obispo and Santa Barbara Counties, California.

1.1 PROJECT LOCATION

The project site is located adjacent to Twitchell Reservoir, approximately 5.5 miles east of the City of Santa Maria and approximately 6.6 miles east-south east of the intersection of State Route (SR) 101 and SR 166 on an unincorporated area of San Luis Obispo and Santa Barbara Counties, California (Figure 1). The assessor parcel number (APN) for the site is 090-411-020 and it is currently zoned for agricultural use. The approximate center of the project site occurs at latitude 34.981442°and longitude -120.319479° (WGS-84 datum) and the project site is depicted on the *Twitchell Dam*, *California* United States Geological Survey (USGS) 7.5-minute topographic quadrangle in Meridian San Bernardino, Township 11N, Range 33W and Section 35. It is accessed from State Highway 166 at Twitchell Dam Road via a gated driveway. Surrounding land consists of open space and grazed grasslands.

The biological study area (BSA) includes the entire project site and all of the project components as outlined in the project description and that have not previously been permitted. The BSA for the proposed project is presented in Figure 2. The BSA was determined by the extent of potential project-related impacts to biological resources. It should be noted that the existing spillway is not part of the BSA.

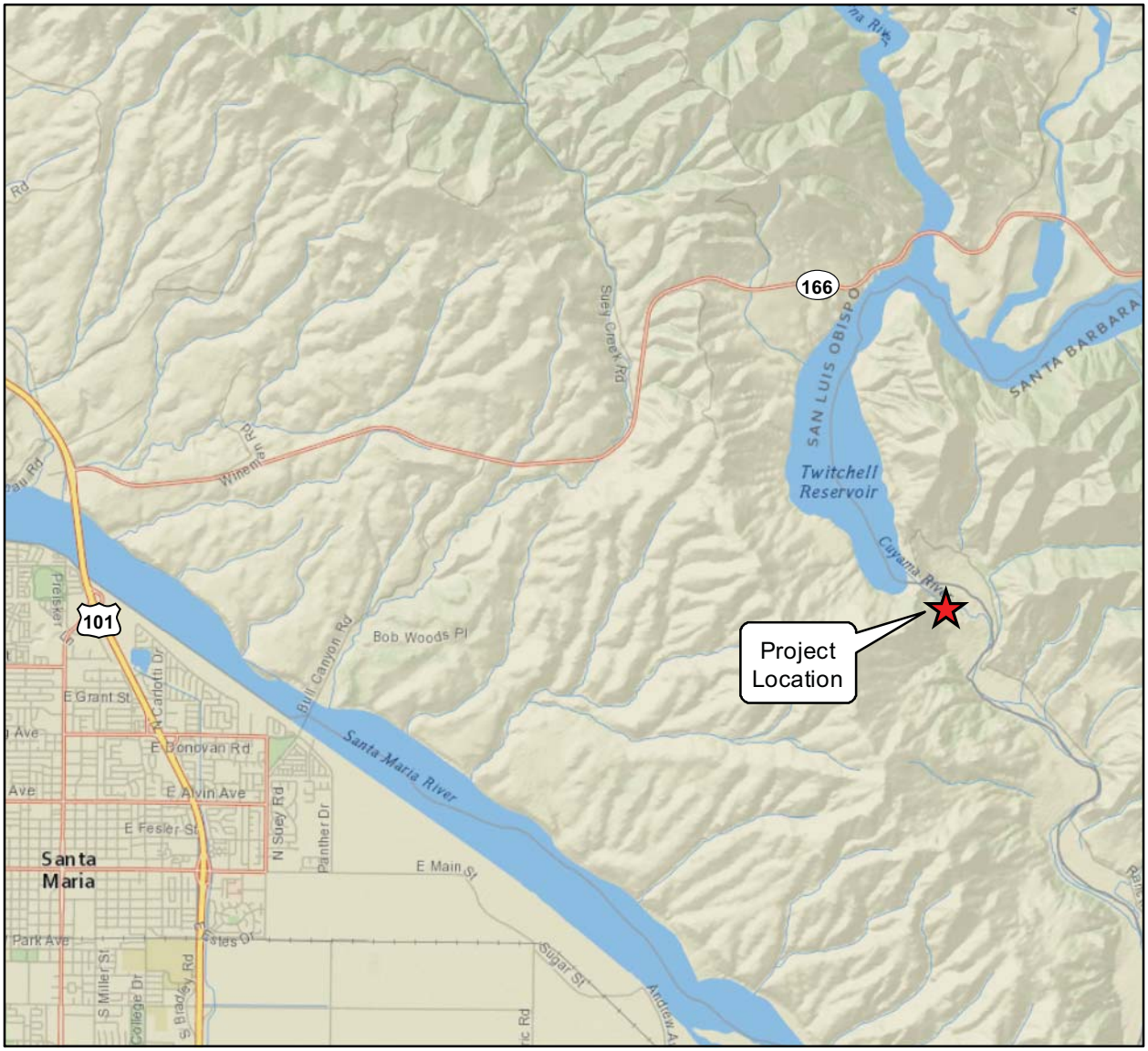
1.2 PROJECT DESCRIPTION

The purpose of this project is to temporarily place sediment dredge pipe as a means to transport sediment that has accumulated and threatens to block the lower inlet portal of the Twitchell Dam inlet structure to an existing stockpile area (Appendix A). The dredge sediment pipe will be a temporary, 6– 8 inch surface line secured by stakes and routed as follows:

1. Up the hill from the waters edge and through the existing spillway tunnel to the Spillway Access Road. Minimum disturbance of vegetation on the hillsides will be achieved by laying pipe by hand or utilizing the Spillway Entrance Access Road.

2. Along the Spillway Access Road approximately 100 feet to the turn-out to an old dam construction haul road.

3. The line will traverse for several hundred feet along an old unimproved haul road that was used during dam construction. Minimum disturbance of vegetation will be achieved along this old graded road by laying the pipeline by hand as much as possible. Some clearing of vegetation along the old haul road will be required for pipe placement. This clearing is anticipated to be no more than 10 feet wide. No other ground disturbance activities are anticipated.



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N

0 0.8 1.6 Miles

Regional Location Map

Figure 1

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Additional data provided by MNS Engineers, 2013.

Biological Study Area

N

0 250 500 Feet

Project Location Map

Figure 2

SECTION 2 – METHODOLOGY

This section provides a general summary of the applicable federal, state, and local regulations related to biological resources that could occur within the project site and immediate vicinity. Special Status biological resources considered and evaluated in this BRA include special status plant and animal species, nesting birds and raptors, sensitive plant communities, potentially jurisdictional waters and wetlands, wildlife movement corridors, and other biological resources afforded protection under local and regional jurisdictions, such as protected trees.

2.1 REGULATORY OVERVIEW

2.1.1 ENVIRONMENTAL REGULATIONS

For the purpose of this report, potential impacts to biological resources were analyzed based on the following:

- California Environmental Quality Act (CEQA)
- Federal Endangered Species Act (ESA)
- California Endangered Species Act (CESA)
- Federal Clean Water Act (CWA)
- California Fish and Wildlife (formerly California Department of fish and game) (CDFW) Code
- Migratory Bird Treaty Act (MBTA)
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act
-

See Appendix B for a discussion of the above regulations.

2.1.2 GUIDELINES FOR DETERMINING CEQA SIGNIFICANCE

The following threshold criteria, as defined by the CEQA Guidelines Appendix G Initial Study Checklist, were used to evaluate potential environmental effects. Based on these criteria, the proposed project would have a significant effect on biological resources if it would:

> *a) Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife(=Game) or U.S. Fish and Wildlife Service.*
>
> *b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife (=Game) or US Fish and Wildlife Service.*

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc…) through direct removal, filling, hydrological interruption, or other means.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

2.2 DATABASE AND LITERATURE REVIEW

Queries of the United States Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPaC; 2012b), California Department of Fish and Wildlife (CDFW; formerly California Department of Fish and Game) California Natural Diversity Database (CNDDB; 2003), and the California Native Plant Society (CNPS) *Online Inventory of Rare, Threatened and Endangered Plants of California* (2012) were conducted to obtain comprehensive information regarding state and federally listed species considered to have potential to occur within the *Twitchell Dam, California* USGS 7.5-minute topographic quadrangle and the surrounding eight quadrangles (*Nipomo, Huasna Peak, Chimney Canyon, Santa Maria, Tepusquet Canyon, Orcutt, Sisquoc,* and *Foxen Canyon*). The results of these scientific database queries were compiled into a table that is presented as Appendix C (Note that for mapping purposes, a 5-mile search radius was used). In addition, the following resources were reviewed for information about the BSA:

- Aerial imagery of the BSA and vicinity (Google Earth, 2012);
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Web Soil Survey (2012a);
- USDA, NRCS Lists of Hydric Soils (2012b)
- USFWS Critical Habitat Portal (2012a);
- USFWS National Wetlands Inventory (2012c) online mapping application query for the BSA (;
- CDFW Biogeographic Information and Observation System (2012);
- *Biological Assessment for the Twitchell Dam Watercourse Project, APN 014-271-031* (Althouse and Meade, 2008); *and*
- *Biological Monitoring Report for Work Associated with the Twitchell Dam Watercourse (Cuyama River) Project, Emergency Permit SPL-2010-00879-CLH; San Luis Obispo County, CA* (Arcadis U.S., Inc., 2011).

2.3 FIELD RECONNAISSANCE SURVEY

A field reconnaissance survey was conducted to document the existing site conditions and to evaluate the potential for presence of sensitive biological resources including sensitive plant and animal species,

sensitive plant communities, potentially jurisdictional waters of the U.S. and wetlands, and habitat for federally and state protected nesting birds.

The field survey was conducted by Rincon Associate Biologist Michael Tom and Biologist/Botanist Kristie Haydu on December 21, 2012 between the hours of 9:30 a.m. to 11:30 a.m. Weather conditions during the survey included an average temperature of 50 degrees Fahrenheit, with winds of 5 to 7 miles per hour, and approximately 30 percent cloud cover. Mr. Tom and Ms. Haydu surveyed the entire study area on foot via meandering transects and recorded all biological resources encountered on-site. Mr. Tom and Ms. Haydu also investigated a pond at the outlet of Twitchell Dam northeast of the BSA because California red-legged frog (*Rana draytonii*) had previously been documented there.

During the field survey, an inventory of all plant and animal species observed was compiled (Appendix E) and an evaluation of potential jurisdictional aquatic features was conducted. Plant species nomenclature and taxonomy followed *The Jepson Manual: Vascular Plants of California*, second edition (Baldwin et al., 2012). All plant species encountered were noted and identified to the lowest possible taxonomic level. The vegetation classification system used for this analysis is based on *A Manual of California Vegetation, Second Edition* (Sawyer et al., 2009) and *Preliminary Descriptions of the Terrestrial Communities of California* (Holland, 1986); but has been modified as needed to accurately describe the existing habitats observed onsite. These vegetation communities were mapped using ArcGIS® (ESRI, 2013).

Wildlife identification and nomenclature followed standard reference texts including *Sibley Field Guide to Birds of Western North America* (Sibley, 2003), *Field Guide to Western Reptiles and Amphibians* (Stebbins, 2003), and *Mammals of North America* (Bowers et al., 2004). The habitat requirements for each regionally occurring special status species were assessed and compared to the type and quality of the habitats observed within the project site during the field survey. Several sensitive species were eliminated from being considered to have the potential to occur on-site due to lack of suitable habitat, lack of suitable soils/substrate, and/or known regional distribution.

SECTION 3 – EXISTING CONDITIONS

This section summarizes the results of the reconnaissance-level field survey. Discussions regarding the general environmental setting, vegetation communities present, plants and animals observed, potential special status species issues, and other possible constraints regarding the biological resources on-site are presented below. A complete list of all the plant and animal species observed on-site during the field survey is presented as Appendix E and representative photographs of the project site are provided in Appendix F.

3.1 ENVIRONMENTAL SETTING

The BSA is situated within a predominately natural open space landscape (Figure 2). The southeasterly portion of the BSA is located on a southwest-facing slope with elevations ranging from approximately 500 to 590 feet above mean sea level (msl). The northwestern portion of the BSA is located next to the reservoir with an approximate elevation of 690 feet msl. It is bordered by natural and naturalized areas as well as facilities and roads created for operation of the reservoir. Twitchell Reservoir is north of and is adjacent to the BSA, the Sierra Madre Mountains lie approximately 1 mile to the east, and the Cuyama River also is located approximately 2 miles to the northeast. The BSA is within the South Coast Ranges (SCoR) geographic subregion of California. Within this subregion, the project site occurs within the Outer South Coast Range (SCoRO) district. The SCoR subregion is a component of the larger Central Western California geographic region, which occurs within the even larger California Floristic Province (Baldwin et al., 2012).

The project site is located within inland areas of southern San Luis Obispo County and northern Santa Barbara County. The climate in this area is moderate and typifies a Mediterranean coastal climate throughout the year. The majority of rainfall occurs during the winter months and the summers are cool with frequent coastal fog and onshore breezes. According to the nearest weather station to the BSA, *Twitchell Dam (049111)*, average annual precipitation was 16 inches between 1962 and 2012. At this weather station, the majority of rainfall occurred during the months of November through April (Western Regional Climate Center, 2012).

3.1.1 WATERSHED AND DRAINAGES

The BSA is located within the Santa Maria Watershed. However, no drainages occur within the BSA. The nearest drainage to the project site is the Cuyama River occurring north and east of the project site. The Cuyama River joins with the Sisquoc River downstream of the project, forming the Santa Maria River (U.S. Geological Survey, 1978).

3.1.2 SOILS

According to the NRCS Web Soil Survey of *San Luis Obispo County, California, Coastal Part*, two soil map units are mapped within the BSA: Lodo-rock outcrop complex, 9 to 30 percent slopes; and Lodo-rock outcrop complex, 30 to 75 percent slopes (U.S. Department of Agricultural, Natural Resource Conservation Service, 2012).

Lodo-Rock Outcrop Complex, 9-30 percent slopes and 30 to 75 percent slopes
Lodo-rock outcrop complex soils are somewhat excessively drained soils with very low water capacity. The parent materials of this soil map unit are residuums weathered from sandstone and shale. The Lodo and similar soils comprises 55 percent of the map unit and rock outcrop comprises 35 to 40 percent of the map unit. The remaining composition is comprised of a combination of minor components such as Chamise shaly loam, Chamise sandy loam, Gaviota sandy loam, Lopez very shaly clay loam and Santa Lucia shaly clay loam, Creneba loam, and others. Native vegetation typically consists of chaparral and oak-pine woodlands with naturalized annual grass and forbs, and common land uses include livestock grazing and open space. This soil unit does not meet the national hydric criteria (United States Department of Agriculture, Natural Resources Conservation Service, 2012b).

3.2 VEGETATION

Three terrestrial vegetation communities were identified on-site during the field survey including: coastal sage scrub, coyote brush scrub, and ruderal/disturbed (Figure 3). Vegetation classification was based on Sawyer et al. (2009) and cross-referenced to Holland (1986). A map that illustrates the extent of the terrestrial vegetation communities observed is presented as Figure 3 and each are discussed in greater detail below.

Coastal Sage Scrub
Coastal sage scrub occurs within southeastern portion of the BSA south of the end of the existing spill way. Vegetation within this community is mainly composed of dense shrubs approximately 4 to5 feet tall. Dominant shrub species included California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), coastal buckwheat (*Eriogonum fasciculatum*) and purple sage (*Salvia leucophylla*). The under story of the scrub habitat is comprised of litter and bare soil with some herbaceous plants such as poison oak (*Toxicodendron diversilobum*), bristly ox-tongue (*Helminthotheca echioides*) and deerweed (*Lotus scoparius*). Small numbers of young individual coast live oak (*Quercus agrifolia*) trees were also observed within this community as well as adjacent to the BSA. The coastal sage scrub vegetation community on-site most closely corresponds to Central Lucian coastal scrub as described by Holland (1986) and to *Artemisia californica* Shrubland Alliance as described by Sawyer et al. (2009).

Coyote brush scrub
Coyote brush scrub occurs within both portions of the BSA, between the edge of the reservoir and the entrance to the existing spillway, as well as on the eastern edge of the BSA along a spillway access road. Coyote brush is the dominant shrub species within this habitat type withsome California sagebrush also found intermixed in this area. The portion of this habitat adjacent to the reservoir is covered in loose rocky substrate, is heavily disturbed and includes numerous non-native invasive plants such as tree tobacco (*Nicotiana glauca*). The coyote brush scrub vegetation community within the project site most closely corresponds to Central (Lucian) coastal scrub described by Holland (1986) and to the *Baccharis pilularis* Shrubland Alliance described by Sawyer et al. (2009), however the species composition listed within these element types varies considerably from the species composition observed onsite.

Imagery provided by ESRI and its licensors © 2013.
Additional data provided by MNS Engineers, 2013.

Biological Study Area
Ruderal/Disturbed
Coastal sage scrub
Coyote bush scrub

N
0 250 500 Feet

Natural Communities Figure 3

Ruderal/Disturbed

Given that this community type is not naturally occurring, it is not described in either the Holland (1986) or Sawyer et al. (2009) classification systems. This habitat is present along the southern edge of the southeastern portion of the BSA where a temporary haul road and dredging stockpile area are found Within the BSA this habitat consists of bare ground and stockpiled dredge material, as well as patches of annual grasses such as slender wild oat (*Avena barbata*) and red brome (*Bromus madritensis* ssp. *rubens*). Individual scattered young coyote brush shrubs and arroyo willows (*Salix lasiolepis*) are also present.

3.3 GENERAL WILDLIFE

Wildlife activity was generally low during the site visit. Bird species observed on-site included California quail (*Callipepla californica*), western scrub jay (*Aphelocoma californica*), ruby-crowned kinglet (*Regulus calendula*), American bushtits (*Psaltriparus minimus*), California towhee (*Melozone crissalis*), northern flicker (*Colaptes auratus*), and red-tailed hawk (*Buteo jamaicensis*). A coyote (*Canis latrans*) was heard calling and a woodrat (*Neotoma* sp.) nest was observed while surveying the coastal sage scrub community. Mule deer (*Odocoileus hemionus*) tracks were also observed along the dirt road leading to the drain exit to the spillway. A broken rattle from a western rattlesnake (*Crotalus oreganus*) was observed at the mouth of the spillway adjacent to the reservoir.

SECTION 4 – SENSITIVE BIOLOGICAL RESOURCES

This section discusses the potential for special status species to occur within the project site. 'Potential to occur' is based on the presence or absence of suitable habitat for each special status species evaluated, as well as the general ecological requirements for each species and known occurrences on and/or within the vicinity of the BSA. All occurrences of special status species, sensitive vegetation communities, and USFWS designated critical habitats that have been reported by the resource agencies within a five-mile radius of the BSA are shown in Figure 4. The evaluation of potential to occur for each species identified in the records search is presented in Appendix C.

4.1 SPECIAL STATUS SPECIES

Rincon staff determined that the project site contains suitable habitat for 15 special status species; seven plants and eight animals.

4.1.1 SPECIAL STATUS PLANT SPECIES

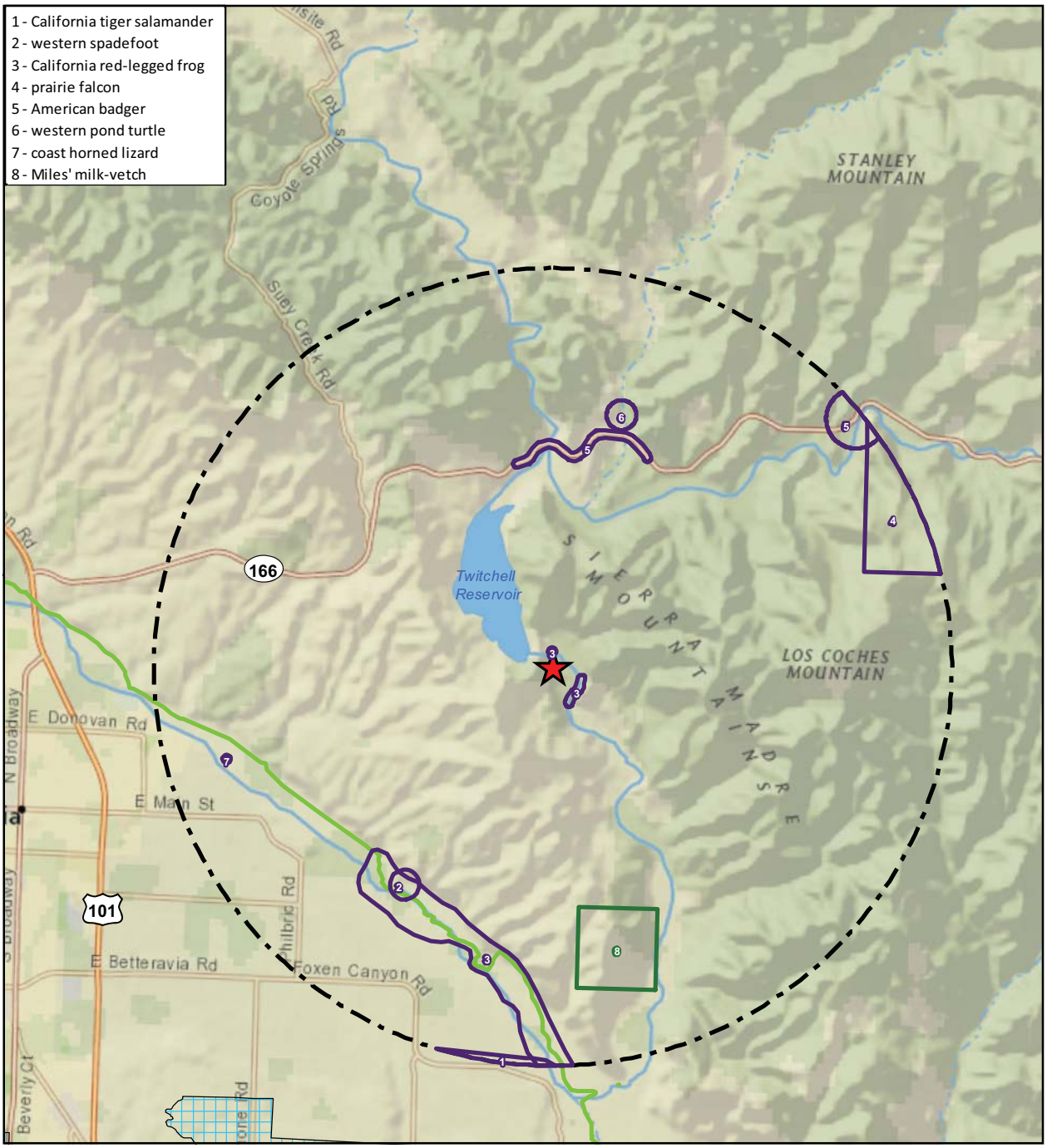
No sensitive plant species were observed during the reconnaissance survey of the BSA. Thirty-two special status plant species were identified within the 9-quad search area that includes the BSA. Only one of these, Miles' milk-vetch (*Astragalus didymocarpus* var. *milesanianus*) has been documented within five miles of the BSA (Figure 4). Most of the sensitive plant species documented within the vicinity of the BSA are associated with specialized habitat/soil types that do not occur within the study area and are, therefore, not expected to occur within the BSA (see Appendix C). The following special status plant species were determined to have potential to occur on-site based on the presence of suitable habitat:

- Miles' milk-vetch – California Rare Plant Rank (CRPR) 1B.2
- Blochman's leaf daisy (*Erigeron blochmaniae*) – CRPR 1B.2
- Mesa horkelia (*Horkelia cuneata* var. *puberula*) – CRPR 1B.1
- Kellogg's horkelia (*Horkelia cuneat*a var. *sericea*) – CRPR 1B.1
- Santa Barbara honeysuckle (*Lonicera subspicata* var. *subspicata*) – CRPR 1B.2
- Hubby's phacelia (*Phacelia hubbyi*) – CRPR 4.2
- South coast branching phacelia (*Phacelia ramosissima* var. *austrolitoralis*) – CRPR 3.2

Miles' milk-vetch has been documented approximately 3.6 miles south of the BSA (CNDDB Occurrence #4) at the mouth of the Cuyama River. The other six special status plant species listed above are documented within the 9-quad search area but greater than 5 miles from the BSA. Each of these species has the potential to occur in the coastal scrub and coyote brush scrub habitat on-site.

4.1.2 SPECIAL STATUS ANIMAL SPECIES

No special status animal species were observed during the reconnaissance field survey. Twenty-six special status animal species were identified within the 9-quad search area, seven of which have been documented within five miles of the BSA (Figure 4). Eight special status animals species were determined to have the potential to occur on-site based on the presence of suitable habitat:



Map images provided by National Geographic Society, ESRI and its licensors © 2013.
Additional data layers from California Natural Diversity Database, January, 2013.
Critical habitat shown is that most recently available from U.S. FWS.
Check with U.S. FWS or Federal Register to confirm.

Project Location

5-Mile Radius Buffer
Animals
Plant
Critical Habitat
S Calif Steelhead FCH
California Tiger Salamander FCH (Sta Barbara Cty)

N
0 0.5 1 1.5 2 Miles

Sensitive Elements Reported in the California Natural Diversity Database and Federally Designated Critical Habitats Within 5 Miles

Figure 4

- Prairie falcon (*Falco mexicanus*) – state Watch List: This species is not expected to breed on-site as the cliffs it requires for nesting are not found within the BSA. However, because this species will travel far to forage and the CNDDB has a recorded observation for prairie falcons within five miles of the project site this species may forage or occur transiently within the BSA.

- California red-legged frog – federally Threatened and state Species of Special Concern: The coastal scrub type habitats found within the BSA could provide upland habitat for California red-legged frogs (CRLF), which typically use upland habitat for dispersal. No aquatic features are within the BSA that could provide suitable breeding habitat for CRLF. During the reconnaissance survey conducted by Rincon, an area of ponded water was identified at the outlet to the reservoir approximately 600 feet from the BSA. This area contained emergent vegetation and water at least three feet deep. Althouse and Meade, Inc. conducted protocol level surveys in 2008 for the Twitchell Dam Watercourse Project and observed seven CRLF individuals at the reservoir outlet as well as along the Cuyama River in the vicinity of the dam (Alhouse and Meade, 2008). Althouse and Meade did not consider this area suitable breeding habitat because of frequent water releases from the reservoir during the spring. Instead they believed these individuals were dispersing from suitable breeding habitat further downstream. Based upon the distance of these observations from the BSA, CRLFmay occur transiently within the BSA.

- Silvery legless lizard (*Anniella pulchra pulchra*) – state Species of Special Concern: The CNDDB contains records of observations for this species greater than five miles from the BSA, however suitable habitat is present on-site where loose, friable soils occur in the coastal sage scrub and coyote brush scrub. This species can also be found buried within litter at the base of trees and shrubs.

- Western pond turtle (*Emys marmorata*) – state Species of Special Concern: The CNDDB has one record for western pond turtles approximately three miles north of the BSA in Alamo Creek (CNDDB Occurrence #1187). Six additional records are located within the 9-quad search area but greater than five miles from the BSA and are generally associated with riparian/aquatic habitats. Western pond turtle use upland habitat up to 1650 feet from water for egg-laying, and also use upland habitats for dispersal. The coastal scrub type habitats found within the BSA provides suitable upland habitat for this species. Also according to a Biological Assessment, surveys conducted in 2008 detected western pond turtles within the Cuyama River near Twitchell Dam (Althouse and Meade, 2008). Based upon the distance of these observations from the project site, western pond turtles may occur within the BSA.

- Coast horned lizard (*Phrynosoma blainvillii*) – state Species of Special Concern: The coastal scrub type habitats within the BSA are suitable for coast horned lizards. The CNDDB has one documented observation for this species approximately 4.2 miles to the southwest of the BSA in the Santa Maria River. During wildlife surveys conducted in 2007 and 2008 (Althouse and Meade, Inc., 2008), a single coast horned lizard was detected along an access road on the southeast base of Twitchell Dam. Based upon this observation coast horned lizards are likely to be present within the BSA.

- Western red bat (*Lasiurus blossevillii*) – state Species of Special Concern: Western red bats have been documented within the 9-quad search area surrounding the BSA, but they have not been documented within 5 miles of the BSA. This species prefers habitat edges and mosaics, which are abundant within the vicinity of the BSA. The trees found within the BSA could provide potential roosting habitat for western red bats and the entire BSA provides suitable foraging habitat

- Hoary bat (*Lasiurus cinereus*) – This species has no special status but is included on the CDFW Special Animals List (2011). The CNDDB does not contain records for this species within five miles of the BSA, but it has been documented within the greater 9-quad search area around the BSA. This species prefers open habitats and mosaics, which are present within the vicinity of the BSA. The trees found within the BSA could provide roosting habitat for hoary bats, and suitable foraging habitat is present throughout the BSA.

- American badger (*Taxidea taxus*) – state Species of Special Concern: The CNDDB contains numerous records of American badgers within the 9-quad search area around the BSA, most of which are observations of road kill along SR 166, SR 101, SR 1, and SR 135. The closest CNDDB record is approximately 2.5 miles north of the BSA along SR 166. This species utilizes a wide variety of scrub, forest and grassland habitats with friable soils and is expected to be common throughout the region. Suitable habitat is present on-site.

In addition to the above species, the state Fish and Game Code and the Migratory Bird Treaty Act (MBTA) both protect native birds and their nests. While the survey timing was after the bird nesting season, native trees and shrubs occur on or adjacent to the BSA that likely provide nesting habitat. No previously occupied nests were observed during the reconnaissance survey of the BSA.

4.2 SENSITIVE PLANT COMMUNITIES

Two sensitive plant communities are recorded in the CNDDB within the 9-quad search area around the BSA: Southern California threespine stickle back stream and southern vernal pool (Table 1). Neither are documented within 5 miles of the BSA (Figure 4), and neither were observed during the site reconnaissance survey. The coastal sage scrub community mapped within the BSA resembles the Central (Lucian) coastal scrub, which is considered by the CDFW to be vulnerable. The area which resembles this habitat classification can be found within the portion of the BSA south of the existing spillway. In addition to these sensitive plant communities, two federally designated critical habitats are mapped on Figure 4: southern California steelhead Critical Habitat, which is associated with the Santa Maria River, and California tiger salamander Critical Habitat (for Santa Barbara County DPS), which is mapped more than five miles to the southwest of the BSA in the southern portion of the City of Santa Maria. Neither will be affected by the proposed project.

Table 1. Sensitive Plant Communities Within the Vicinity of the BSA

Plant Community	G-Rank/ S-Rank	Potential for Impact	Rational
Southern California threespine stickleback stream	G?/SNR	None	No aquatic habitats occur within the BSA and no observations were made during the survey.
Southern vernal pool	G?/SNR	None	No vernal pools occur within the BSA and no observations were made during the survey.
Central (Lucian) coastal scrub	G3/S3.3	Low	Coastal scrub which is consistent with the description of this habitat type occurs within the BSA south of the spillway.

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind3

4.3 JURSIDICTIONAL WATERS AND WETLANDS

No potentially jurisdictional drainages and/or wetland features were observed within the project site during the reconnaissance field survey.

4.4 WILDLIFE MOVEMENT

The project is not located within any known regional wildlife movement corridors, nor is it located in any locally-important movement corridors (e.g., riparian corridors). Given the low impact of the proposed project, implementation is not expected to interfere within wildlife movement.

4.5 RESOURCES PROTECTED BY LOCAL POLICIES AND ORDINANCES

The project site is located on federally-owned lands. Therefore, local policies and ordinances are not applicable.

SECTION 5 - IMPACT ANALYSIS AND MITIGATION MEASURES

This section discusses the possible adverse impacts to biological resources that may occur from implementation of the proposed project and suggests appropriate mitigation measures that would reduce those impacts to less than significant levels. The criteria used to evaluate potential project-related impacts to biological resources are presented in Section 2.1.2.

5.1 SPECIAL STATUS SPECIES

Impact # 1 Special Status Plants
The proposed project has potential to result in direct impacts to special status plants. The project site contains suitable habitat for seven special status plant species (Section 4.1.1). Impacts are likely limited to direct removal during vegetation clearance activities. Special status plants may also be crushed as the dredge pipe is being installed; however, special status plant species are not expected to be abundant on-site. It is likely that special status plant species can be avoided through strategic placement of the pipeline. Indirect impacts may result from colonization of disturbed areas by invasive non-native plant species. Possible impacts to special status plants resulting from implementation of the proposed project are potentially significant.

Recommended Mitigation Measures

- Prior to any vegetation removal or other construction activities, a qualified botanist should conduct a seasonally timed and comprehensive special status plant survey. The intent of these surveys is to document the location(s) and number(s) of any special status plant species that occur within the BSA so that an effective mitigation program can be accomplished if necessary. The special status plant survey should coincide with the appropriate blooming periods for each species with potential to occur on-site. The special status plant surveys should be conducted in accordance with the current regional, state, and federal protocols. If no special status plants are observed within the BSA then no further mitigation would then be required.
- If any special status plant species are observed within the BSA during the survey, they should be mapped onto an aerial photograph of the site at a scale no less than 1 inch = 200 ft. A special status plant survey technical report should be prepared to document the survey results prior to the onset of construction activities.
- To avoid project-related impacts to special status plants, pipe should be placed no less than 10 feet from individual sensitive plants and/or sensitive plant populations. A qualified botanist should monitor the pipe placement and document avoidance to demonstrate compliance.

Implementation of these recommended mitigation measures would reduce potential impacts to special status plants to less than significant levels.

Impact #2 Special Status Animals
The proposed project has potential to result in direct impacts to eight special status animals, if present during implementation of the project (Section 4.1.2). Prairie falcon, if present, is discussed below under *Impact #3 Nesting Birds and Raptors*. Direct impacts, in the form of injury and harassment, may occur from vegetation removal activities and placement of the dredge pipe. Since CRLF (Federally Threatened) could be impacted, this project would require a formal consultation with the United States Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act. Impacts to CRLF resulting from implementation of the proposed project are potentially significant.

Silvery legless lizard and coast horned lizard may be present on-site; however, given the small area of potential disturbance, the number of individuals of either species that may be harmed during implementation of the project would not result in a significant decline in the local population. Furthermore, silvery legless lizards are fossorial (i.e., live underground) throughout the year and coast horned lizards are fossorial during the winter months when cold temperatures are experienced. Both should be minimally affected by the surface disturbing activities such as vegetation clearing for pipe placement or transit of vehicles. Impacts to silvery legless lizard and coast horned lizard due to implementation of the project would be less than significant.

The trees found within the BSA are small and young and likely provide only marginal roosting habitat for western red bats and hoary bats. These trees would not be suitable for maternity roots for either species. Direct impacts would result if roosting bats are disturbed during implementation of the project; however, it is expected that all trees will be avoided during pipe placement. Bats may be disturbed if project activities occur adjacent to roosts, but the number of bats that could be impacted is likely to be very low and would not contribute to a substantial decline in the populations of either bat species. Impacts to western red bats and hoary bats due to implementation of the project would be less than significant.

No evidence of American badgers was found on-site; however, American badgers are highly mobile and are expected to be present throughout the region. American badgers could be found on-site at any time of the year. Direct impacts could result if ground disturbing activities and pipe installation/removal directly affects an occupied American badger den. These impacts should be easily avoided through surveys to identify occupied dens within the project site. Impacts to American badgers could be significant if breeding American badgers with offspring are present within the proposed disturbance area during project implementation.

California Red-legged Frog Recommended Mitigation Measures

The following avoidance and minimization measure is sufficient to reduce the potential for impacts to CRLF.

- Prior to start of project activities, a qualified biologist should conduct a “tailgate” education session to familiarize all personnel conducting project activities with the identification and life-history of CRLF.
- Ground disturbing activities and pipe installation/removal should be conducted between May 1 and October 31 during dry weather conditions to minimize the potential for encountering CRLF. Work should be restricted to daylight hours.
- A qualified biologist should conduct a survey of the project site within 48 hours of ground disturbing activities and pipe installation/removal. The survey area should include the proposed disturbance area and all proposed ingress/egress routes, plus a 100 foot buffer. If any life stage of CRLF is found within the survey area, the biologist should revisit the site on subsequent days to determine if the CRLF has left the site. If the CRLF has not left the site after three days, the USFWS should be consulted to determine the appropriate course of action.
- If ground disturbing activities and pipe installation/removal must occur between November 1 and April 30, or if wet conditions are present on-site, the qualified biologist should conduct a pre-activity clearance sweep each day prior to start of project activities.
- Vegetation disturbance should be the minimum necessary to achieve the goals of the project.
- All trash should be removed from the site daily and disposed of properly to avoid attracting potential predators to the site.

- No pets should be permitted on-site during project activities.
- All vehicles should be in good working condition and free of leaks. All leaks should be contained and cleaned up immediately to reduce the potential or soil/vegetation contamination.
- All refueling, maintenance, and staging of equipment and vehicles should occur at least 100 feet from riparian habitat or water bodies and in a location from where a spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water).
- The number of access routes, size of staging areas, and the total area of the activity should be limited to the minimum necessary to achieve the project goals. Environmentally Sensitive Areas will be delineated to confirm access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to California red-legged frog habitat.
- To ensure that diseases are not conveyed between work sites by the qualified biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force should be followed at all times.
- Disturbed areas should be re-vegetated with an assemblage of upland vegetation suitable for the area. Invasive, exotic plants should be controlled to the maximum extent practicable.
- No herbicide should be use on-site.

Western Pond Turtle Recommended Mitigation Measures

- A pre-construction survey for western pond turtle should be conducted where suitable habitat is present not less than 14 days prior to the initiation of construction.
- If western pond turtle is found and these individuals are likely to be killed or injured by construction activities, a qualified biologist should be allowed sufficient time to capture and relocated the animals from the project site before construction activities begin. A qualified biologist(s) should relocate the individuals the shortest distance possible to a location that contains suitable habitat not likely to be affected by activities associated with the proposed project. The biologist(s) should maintain sufficiently detailed records of any individual observed, captured, relocated, etc., including size, coloration, any distinguishing features and photographs (preferably digital) to assist him or her in determining whether translocated animals are returning to the project site.
- A qualified biologist should conduct a training session for all construction personnel prior to the start of construction. At a minimum, the training should include a description of the species and their habitats, the specific measures that will be implemented to conserve and protect them for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.

American Badger Recommended Mitigation Measures

- A pre-construction survey for active badger dens should be conducted where suitable habitat is present not less than 14 days prior to the initiation of construction. The surveys should include a thorough walking survey of the entire site. The survey should cover the entire area proposed for disturbance plus a 100-foot buffer.
- Active dens located within the survey area should be avoided during the breeding season (March 1 through June 30). A minimum buffer of 100 feet around the active den should be demarcated by flagging or construction fencing installed one foot above ground to permit movement of badgers in and out of the buffer zone. If the den must

be impacted, a biologist should then use appropriate tracking and observation methods to determine when an active den is no longer in use.

- A qualified biologist should conduct a training session for all construction personnel prior to the start of construction. At a minimum, the training should include a description of the species and their habitats, the specific measures that will be implemented to conserve and protect them for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.

Implementation of these recommended mitigation measures would reduce potential impacts to special status animals to less than significant levels.

Impact #3 Nesting Birds and Raptors
The proposed project has potential to result in direct impacts to nesting birds, including raptors such as the prairie falcon, if they are nesting within the project site and/or immediate vicinity during construction activities (Section 4.1.2). Possible impacts to nesting birds resulting from implementation of the proposed project are potentially significant.

Recommended Mitigation Measures

- To avoid take of nesting birds and raptors, vegetation removal and initial ground disturbance should occur outside the nesting bird breeding season, which is approximately February 1 through September 1. If ground disturbance and pipe installation/removal must begin within the bird breeding season, then a nesting bird and raptor pre-construction survey shall be conducted by a qualified biologist within the disturbance footprint plus a 100-foot buffer no more than two weeks prior to initiation of such activities.
- If nests are found, their locations should be flagged and then mapped onto an aerial photograph of the project site at a scale no less than 1”=200’ and/or recorded with the use of a GPS unit. An appropriate avoidance buffer ranging in size from 50 to 300 feet within the project site, depending upon the species and the proposed work activity, should be determined and demarcated by a qualified biologist with bright orange construction fencing.
- Pre-construction nesting bird and raptor surveys shall be conducted during the time of day when birds are active and shall be of sufficient duration to reliably conclude presence/absence of nesting birds and raptors onsite and within the designated vicinity. A report of any nesting bird and raptor survey results should be prepared to document compliance . Active nests should be monitored at a minimum of once per week until it has been determined that the nest is no longer being used by either the young or adults.

Implementation of these recommended mitigation measures would reduce potential impacts to nesting birds and raptors to less than significant levels.

5.2 SENSITIVE PLANT COMMUNITIES

Impact #4 Sensitive Plant Communities
Small areas of central (Lucian) coastal scrub habitat may be affected by vegetation removal along the path of the dredge pipe. However, central (Lucian) coastal scrub is common throughout the region in which the project is located. Furthermore, the habitat on-site is disturbed and does not represent an intact, pristine assemblage of central (Lucian) coastal scrub species. The amount of acreage that is likely

to be impacted will be very small and would not result in a substantial decrease in the total area of central (Lucian) coastal scrub in the region. As such, impacts to central (Lucian) coastal scrub are expected to be less than significant and no mitigation is recommended.

5.3 JURISDICTIONAL WETLANDS AND WATERS

No impacts to jurisdiction wetlands and waters are expected.

5.4 WILDLIFE MOVEMENT

No impacts to wildlife movement corridors are expected.

5.5 LOCAL POLICIES AND ORDINANCES

Since the project is located on federally-owned lands, local policies and ordinances are not applicable. As such, no impacts would occur.

SECTION 6 - LIMITATIONS, ASSUMPTIONS, AND USER RELIANCE

This Biological Resources Assessment has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed. Biological surveys for the presence or absence of certain taxa have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis, or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, review of CNDDB RareFind3, and specified historical and literature sources. Standard data sources relied upon during the completion of this report, such as the CNDDB, may vary with regard to accuracy and completeness. In particular, the CNDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary research and analysis.

SECTION 7 - REFERENCES

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SECTION 8 – LIST OF PREPARERS

RINCON CONSULTANTS, INC.

- Primary Author:
  - Michael Tom, Associate Biologist
- Secondary Authors:
  - Carie Wingert, Biologist
- Technical Review:
  - John Dreher Jr., Principal
- Graphics:
  - Craig Huff, Program Manager – Information Technology and Graphics Services
- Production:
  - Stephanie Lopez, Administrative Assistant
- Field Reconnaissance Survey:
  - Kristie Haydu, Botanist/ Biologist
  - Michael Tom, Associate Biologist

Appendix A

Site Plans

Project: Upstream Sediment Removal In Front Of Intake Structure

Project Purpose & Goals

The purpose of this project is the removal of sediment that has accumulated and threatens to block the lower inlet portal of the Twitchell Dam Inlet Structure. This is emerging as an essential sediment management requirement that must be repeated as needed. It is proposed to perform this work utilizing a floating hydraulic dredge as described in this project description.

The goals of the project are to:

1. Clear sediment away from the immediate vicinity of the Intake Structure Lower Portal,
2. Clear sediment for some reasonable area in front of the structure to reduce the frequency of build-up of sediment at the Lower Portal; and
3. Reduce the slope angle of the sediment surrounding the Intake Structure to reduce the frequency of build-up of sediment at the Lower Portal.

2002 Contract for Sediment Removal

Background

A similar project was accomplished in 1999 on an emergency basis by Woods Brothers Contractors and again in 2002 by John Madonna Construction after sediment blocked the lower inlet portal. Both previous times the reservoir had been drained and was empty, so the work was accomplished by mechanical dredging using heavy earth-moving equipment. Adjacent & below are three photos of this work being accomplished utilizing mechanical dredging techniques.

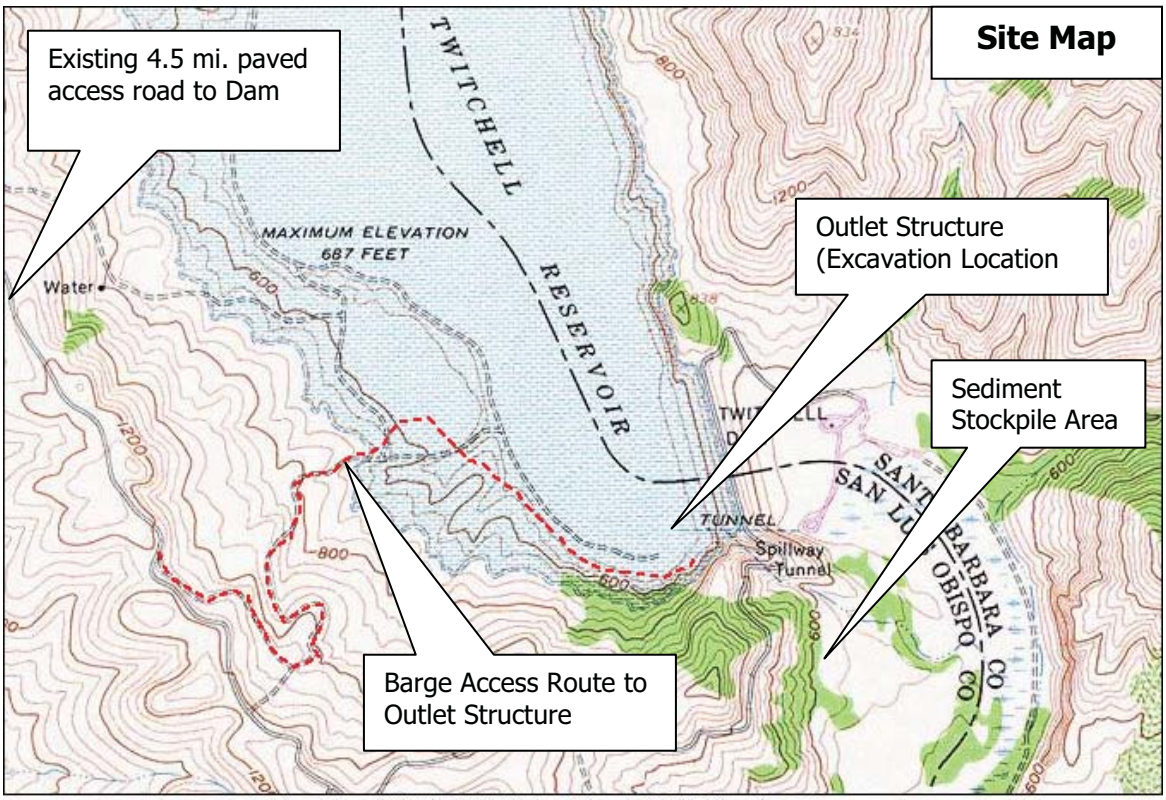
There is currently water in the reservoir, and for operational purposes the reservoir will not be drained and the work must be accomplished by hydraulic

2002 Contract for Sediment Removal

dredging.

This project will be needed on a recurring basis & may be needed after every significant storm season or significant storm event. It is needed again now.

Construction Method Description
Access to the reservoir and dam is via the 6-mile long dam access driveway off of State Route 166. A small hydraulic dredge barge will be placed in the reservoir following an existing access road. See general site map below.



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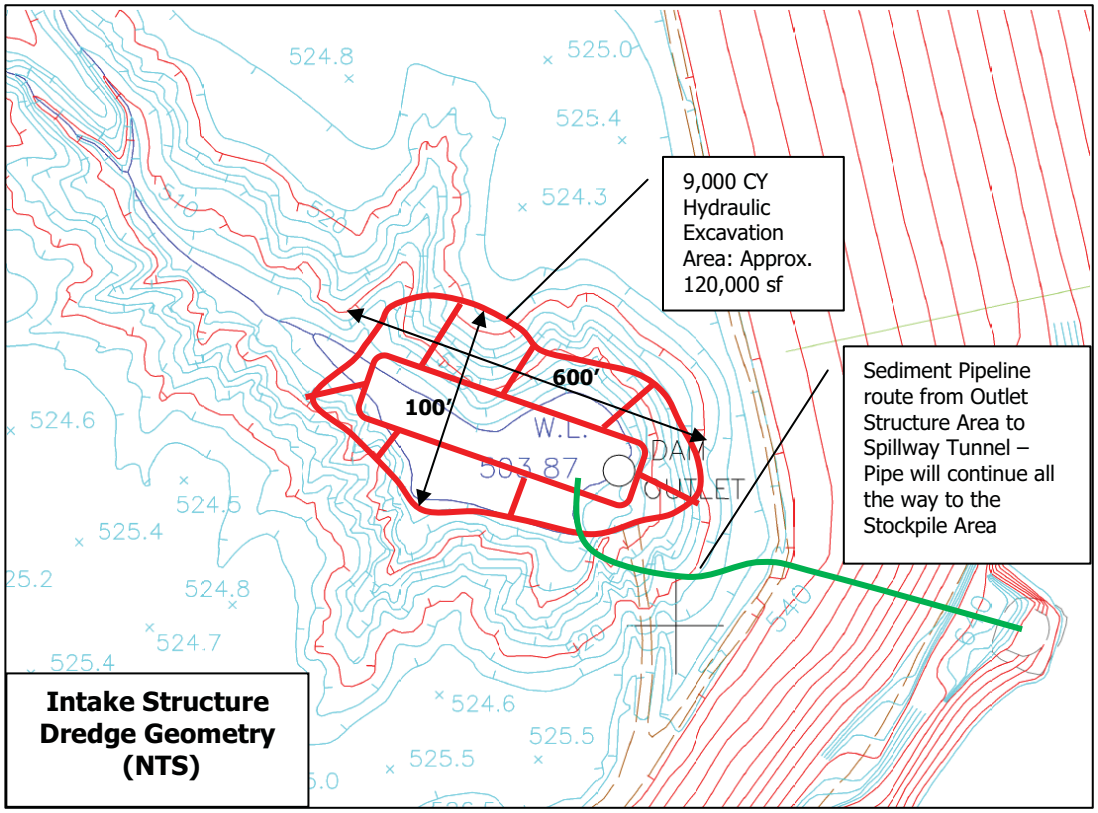
A 6" or 8" dredge pump will be used, likely in conjunction with a corresponding 6" or 8" booster pump located on the upstream side of the dam to lift the sediment to the elevation required to move it to the stockpile area. The dredge sediment pipe will be a temporary, surface line routed as follows:

1. From the dredge located on the barge via a floating line to the shore below the Spillway Tunnel,
2. Up the hill and through the spillway tunnel, through the hill and to the Spillway Access Road. Minimum disturbance of vegetation on this hillside will be achieved by laying pipe by hand or utilizing the Spillway Entrance Access Road.
3. Along the Spillway Access Road approximately 100' to the turn-out to an old dam construction haul road.
4. The line will run for several hundred feet along an old unimproved haul road that was used during dam construction. Minimum disturbance of vegetation will be achieved along this old graded road by laying pipeline by hand so far as is possible. Some clearing of

vegetation along the old haul road will be required for pipe placement. This clearing is anticipated to be no more than 10' wide.

5. Once in the stockpile area, the pipe will be manipulated through construction to feed sediment into any of several sedimentation basins created in that area.

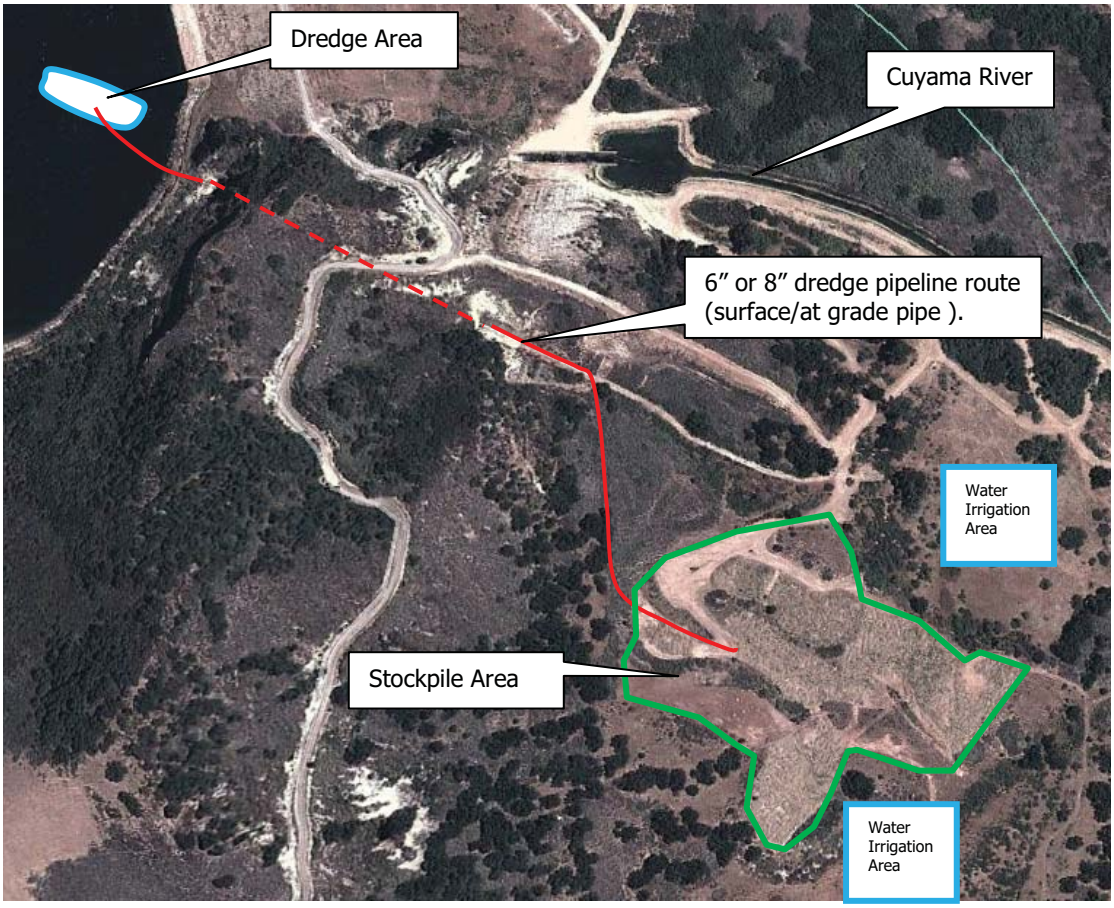
A minimum beneficial excavation is approx. 600' x 100' x 4' deep, for a total of 9,000 cubic yards (see exhibit below).



Removed sediment will be stockpiled downstream in the established sediment stockpile area. The established stockpile area was previously the borrow area for construction material for the earthen dam. It is located outside the 100-year floodplain and has been previously permitted for this purpose through the appropriate jurisdictional agencies. The location is shown on the site map above.

The proposed dredge pipeline route from the Outlet Structure to the stockpile area is shown below.

After the dredged material has been dewatered in the sedimentation basins at the stockpile area, the water will be distributed to one of two large grazing fields located adjacent to the stockpile area. No water will be allowed to flow freely back into the Cuyama River.



The estimated value of construction is $600,000 with a total project cost of $800,000.

The anticipated power equipment is as follows:

1. 6” or 8” Hydraulic Dredge Pump (gas)
2. 6” or 8” Booster pump (gas)
3. 4 Delivery Trucks (Gas) & Trailers briefly on site at the beginning & end of the project to deliver the Dredge Barge, Booster Pump and Heavy Equipment used in the stockpile area.
4. One D-6 or D-8 Bulldozer (Diesel) for creating the sedimentation basins in the Stockpile Area.
5. One large front-end loader(Diesel)
6. One Motor Grader(Diesel)
7. Service Truck/tender (Diesel)
8. Irrigation pump 5 HP (Gas)
9. 3 Pick-up trucks.

Appendix B

Regulatory Setting

REGULATORY SETTING

Special-status habitats are vegetation types, associations, or sub-associations that support concentrations of special-status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife.

Listed species are those taxa that are formally listed as endangered or threatened by the federal government (e.g. U.S. Fish and Wildlife Service [USFWS]), pursuant to the Federal Endangered Species Act (FESA) or as endangered, threatened, or rare (for plants only) by the State of California (i.e. California Fish and Game Commission), pursuant to the California Endangered Species Act or the California Native Plant Protection Act. Some species are considered rare (but not formally listed) by resource agencies, organizations with biological interests/expertise (e.g. Audubon Society, CNPS, The Wildlife Society), and the scientific community.

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. A number of federal and state statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the project site include:

- *U.S. Army Corps of Engineers (wetlands and other waters of the United States);*
- *Regional Water Quality Control Board (waters of the State);*
- *U.S. Fish and Wildlife Service (federally listed species and migratory birds);*
- *California Department Fish and Wildlife (riparian areas and other waters of the State, state-listed species);*

U.S. Army Corps of Engineers. Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) has authority to regulate activities that could discharge fill of material or otherwise adversely modify wetlands or other "waters of the United States." Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. The USACE also implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetland value or acres. In achieving the goals of the Clean Water Act, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any fill or adverse modification of wetlands that are hydrologically connected to jurisdictional waters would require a permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetland acres or values is met through compensatory mitigation involving creation or enhancement of similar habitats.

Regional Water Quality Control Board. The State Water Resources Control Board (SWRCB) and the local Central Coast Regional Water Quality Control Board (RWQCB) have jurisdiction over "waters of the State," pursuant to the Porter-Cologne Water Quality Control Act, which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements (WDRs) regarding discharges to "isolated" waters of the State (Water Quality Order No. 2004-0004-DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction). The Central Coast RWQCB enforces actions under this General Order for isolated waters not subject to federal jurisdiction, and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the Clean Water Act for waters subject to federal jurisdiction.

United States Fish and Wildlife Service. The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the Federal Endangered Species Act (FESA) (16 USC § 153 *et seq.)*. The USFWS generally implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadramous species. Projects that would result in "take" of any federally listed threatened or endangered species are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. "Take" under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of FESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

California Department of Fish and Wildlife. The CDFW derives its authority from the Fish and Game Code of California. The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 *et. seq.)* prohibits take of state listed threatened, endangered or fully protected species. Take under CESA is restricted to direct mortality of a listed species and does not prohibit indirect harm by way of habitat modification. The CDFW also prohibits take for species designated as Fully Protected under the Code.

California Fish and Game Code sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs.

Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands. The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 *et seq.*). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of plant.

Perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 et seq. of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the stream zone (which could extend to the 100-year flood plain) consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake.

Appendix C

Special Status Species Evaluation Tables

Table D1. Special Status Plant Species in the Regional Vicinity of the Twitchell Dam Biological Study Area

Scientific Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale
Agrostis hooveri Hoover's bent grass	--/-- G2/S2.2 1B.2	Bloom period: April-July. Usually occurs in sandy soils within closed-cone coniferous forest, chaparral, cismontane woodland, and valley and foothill grassland. Elevation: 19-2001 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Amsinckia douglasiana Douglas' fiddleneck	--/-- G2/S2.2 1B.2	Bloom period: March-May. Occurs in dry Monterey shale within cismontane woodland and valley and foothill grassland. Elevation: 0-6397 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Arctostaphylos obispoensis Bishop manzanita	--/-- G3?/S3? 4.3	Bloom period: February – June. Occurs in rocky serpentinite within closed-cone coniferous forest, chaparral and cismontane woodland. Elevation: 492-3215 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Arctostaphylos pilosula Santa Margarita manzanita	--/-- G3/S3 1B.2	Bloom period: December-May. Occasionally sandstone substrates within broadleaf upland forest, closed-cone coniferous forest, chaparral, and cismontane woodland. Elevations: 557-3608 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Arctostaphylos purissima La Purisima manzanita	--/-- G2?/S2? 1B.1	Bloom period: November-May. Occurs in sandy chaparral and coastal scrub. Elevations: 196-1279 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Arctostaphylos rudis sand mesa manzanita	--/-- G2/S2.2 1B.2	Bloom period: November-February. Occurs in sandy soils within maritime chaparral and coastal scrub in the Lompoc/Nipomo area. Elevations: 82-1056 feet.	None	Coastal scrub present, but soils are unsuitable and site is further inland than this species is known to occur. No observations were made during survey.
Arenaria paludicola marsh sandwort	FE/SE G1/S1 1B.1	Bloom period: May-August. Occurs in sandy openings within marshes and swamps (freshwater brackish). Elevations: 9-557 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Astragalus didymocarpus var. *milesianus* Miles' milk-vetch	--/-- G5T2/S2.2 1B.2	Bloom period: March-June. Occurs in clay soils within coastal scrub. Elevations: 65-295 feet.	Low	Coastal scrub and clay soils occur within the BSA. Occurrences have also been documented within 5 miles of the BSA. Not observed during site visit.

Table D1. Special Status Plant Species in the Regional Vicinity of the Twitchell Dam Biological Study Area

Scientific Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale
Calochortus simulans La Panza mariposa-lily	--/-- G2/S2.3 1B.3	Bloom period: April-June. Occurs in sandy, often granitic soils as well as occasionally in serpentinite within chaparral, cismontane woodland, lower montane coniferous forest and valley and foothill grassland. Elevations: 1295-3608 feet.	None	No suitable soils present within project limits or vicinity and no observations were made during survey.
Calycadenia villosa dwarf calycadenia	--/-- G2/S2.3 1B.1	Rocky, fine soils within chaparral, cismontane woodland, meadows and seeps, and valley and foothill grassland. Bloom period: May-October. Elevations: 787-4429 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Calystegia subcaulis ssp. *episcopalis* Cambria morning-glory	--/-- G3T3/S3 4.2	Bloom period: March-July. Occurs in usually clay soils within chaparral, cismontane woodland, coastal prairie and valley and foothill grassland. Elevations: 98-1640 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Chorizanthe blakleyi Blakley's spineflower	--/-- G2/S2.3 1B.3	Bloom period: April-June. Occurs in chaparral and pinyon juniper woodland. Elevations: 1968-5249 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Cicuta maculate var. *bolanderi* Bolander's water-hemlock	--/-- G5T3T4/S2 2.1	Bloom period: July-September. Occurs in coastal freshwater or brackish marshes and swamps. Elevations: 0-656 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Cirsium scariosum var. *loncholepis* La Grociosa thistle	FE/ST G5T1/S1 1B.1	Bloom period: May-August. Occurs in mesic sandy soils within cismontane woodland, coastal dunes, coastal scrub, brackish marshes and swamps and valley and foothill grassland. Elevations: 13-721 feet.	None	No suitable soils or moist conditions present within project limits or vicinity and no observations were made during survey.
Cladium californicum California saw-grass	--/-- G4/S2.2 2.2	Bloom period: June-September. Occurs in meadows and seeps as well as alkaline or freshwater marches and swamps. Elevations: 196-2837 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Clinopodium mimuloides monkey-flower savory	--/-- G3/S3.2 4.2	Bloom period: June-October. Occurs in mesic areas of stream banks within chaparral, north coast coniferous forest. Elevations: 1000-5905 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.

Table D1. Special Status Plant Species in the Regional Vicinity of the Twitchell Dam Biological Study Area

Scientific Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale
Cordylanthus rigidus ssp. *littoralis* seaside bird's-beak	--/SE G5T2/S2 1B.1	Bloom period: April-October. Occurs in sandy soils often in disturbed sites within closed-cone coniferous forest, maritime chaparral, cismontane woodland, coastal dunes and coastal scrub. Elevations: 0-1394 feet.	None	No suitable soils and BSA is further inland that this species typically occurs. No observations were made during survey.
Deinandra increscens ssp. *villosa* Gaviota tarplant	FE/SE G4G5T2/S2 1B.1	Bloom period: May-October. Occurs in coastal bluff scrub, coastal scrub and valley and foothill grassland. Elevations: 65-1410 feet.	None	Coastal scrub habitat occurs within the BSA; however, there are no known occurrences this far inland. Not expected to occur on-site.
Delphinium parryi ssp. *blochmaniae* dune larkspur	--/-- G4T2/S2.2 1B.2	Bloom period: April-June. Occurs in maritime chaparral and coastal dunes. Elevations: 0-656 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Delphinium umbraculorum umbrella larkspur	--/-- G2G3/S2S3.3 1B.3	Bloom period: April-June. Occurs in cismontane woodland. Elevations: 1312-5249 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Erigeron blochmaniae Blochman's leaf daisy	--/-- G2/S2.2 1B.2	Bloom period: June-August. Occurs in coastal dunes and coastal scrub. Elevations: 9-147 feet.	Low	Coastal scrub habitat occurs within the BSA. Not observed during site visit.
Eriodictyon capitatum Lompoc yerba santa	FE/SR G2/S2 1B.2	Bloom period: May-August. Occurs in sandy soils within closed-cone coniferous forest and maritime chaparral. Elevations: 131-2952 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Fritillaria ojaiensis Ojai fritillary	--/-- G2/S2 1B.2	Bloom period: February-May. Occurs in rocky areas within mesic broad-leafed upland forest, chaparral and lower montane coniferous forest. Elevations: 984-3274 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Horkelia cuneata var. *puberula* mesa horkelia	--/-- G4T2/S2.1 1B.1	Bloom period: February-September. Occurs in sandy or gravelly soils within maritime chaparral, cismontane woodland and coastal scrub. Elevations: 229-2657 feet.	Low	Not observed during site visit, but suitable habitat and soils present.

Table D1. Special Status Plant Species in the Regional Vicinity of the Twitchell Dam Biological Study Area

Scientific Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale
Horkelia cuneata var. *sericea* Kellogg's horkelia	--/-- G4T2/S2? 1B.1	Bloom period: April-September. Occurs in openings in sandy or gravelly soils within Closed-cone coniferous forest maritime chaparral, coastal dunes and coastal scrub. Elevations: 32-656 feet.	Low	Not observed during site visit, but suitable habitat and soils present.
Lonicera subspicata var. *subspicata* Santa Barbara honeysuckle	--/-- G5T2/S2 1B.2	Bloom period: May-February. Occurs in chaparral, cismontane woodland and coastal scrub. Elevations: 114-3280 feet.	Low	Coastal scrub habitat occurs within the BSA. Not observed during site visit.
Lupinus ludovicianus San Luis Obispo County lupine	--/-- G2/S2.2 1B.2	Bloom period: April-July. Occurs in sandstone or sandy soils within chaparral and cismontane woodland. Elevations: 164-1722 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Nasturtium gambelii Gambel's water cress	FE/ST G1/S1 1B.1	Bloom period: April-October. Occurs in freshwater or brackish marshes and swamps. Elevations: 16-1082 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Navarretia fossalis spreading navarretia	FT/-- G1/S1 1B.1	Bloom period: April-June. Occurs in chenopod scrub, assorted shallow freshwater marshes and swamps, playas, and vernal pools. Elevations: 98-2148 feet.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Phacelia hubbyi Hubby's phacelia	--/-- G3/S3.2 4.2	Bloom period: April-June. Occurs in gravelly, rocky and talus soils within chaparral, coastal scrub and valley and foothill grassland. Elevations: 0-3280 feet.	Low	Coastal scrub and rocky soils occur within the BSA. Not observed during site visit.
Phacelia ramosissima var. *austrolitoralis* south coast branching phacelia	--/-- G5?T3/S3.2 3.2	Bloom period: March-August. Occurs in sandy and sometimes rocky soils within chaparral, coastal dunes, coastal scrub as well as coastal salt marshes and swamps. Elevations: 16-984 feet.	Low	Coastal scrub and rocky soils occur within the BSA. Not observed during site visit.
Scrophularia atrata black-flowered figwort	--/-- G2/S2.2 1B.2	Bloom period: March-July. Occurs in closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub and riparian scrub. Typically occurs on diatomaceous and/or sandy soils, usually around swales and sand dunes. Elevations: 32-1640 feet.	None	Not observed during site visit. Site is further inland than this species is known to occur.

Table D1. Special Status Plant Species in the Regional Vicinity of the Twitchell Dam Biological Study Area

Scientific Name	Status Fed/State ESA G-Rank/S-Rank CRPR	Habitat Requirements	Potential for Impact	Rationale

Regional Vicinity refers to the Twitchell Dam USGS 7.5 min Quad and surrounding eight quads.
FE = Federally Endangered FT = Federally Threatened
SE = State Endangered ST = State Threatened SR = State Rare
G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind3.
CRPR (CNPS California Rare Plant Rank):
1A=Presumed Extinct in California
1B=Rare, Threatened, or Endangered in California and elsewhere
2=Rare, Threatened, or Endangered in California, but more common elsewhere
3=Need more information (a Review List)
4=Plants of Limited Distribution (a Watch List)
CRPR Threat Code Extension:
.1=Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2=Fairly endangered in California (20-80% occurrences threatened)
.3=Not very endangered in California (<20% of occurrences threatened)

Table D2. Special Status Animal Species in the Regional Vicinity of the Twitchell Dam Biological Study Area

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence
Birds				
Agelaius tricolor tricolored blackbird	--/-- G2G3/S2 SSC	Requires open water, protected nesting substrate, and foraging area with insect prey within a few miles of the colony. Nesting/breeding season: March-August.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Athene cunicularia burrowing owl	--/-- G4/S2 SSC	Burrow sites in open dry annual or perennial grasslands, deserts and scrublands characterized by low growing vegetation. Also inhabits anthropogenic habitats such as campuses, golf courses, cemeteries, airports, and grazed pastures. Nesting/breeding season: March-August.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Dendroica petechial brewsteri yellow warbler	--/-- G5T3?/S2 SSC	Commonly associated with riparian plant communities. Prefers willows, cottonwoods, aspens, sycamores and alders for nesting and foraging. This species can also nest in montane shrubbery in open conifer forests. Nesting/breeding season: March-August.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Empidonax trallii extimus southwestern willow flycatcher	FE/SE G5T1T2/S1 --	Requires dense riparian habitats associated with rivers, swamps, and lakes. Wintering habitat is not well known, but is considered to be brushy savannah edges, second growth, shrubby clearings and pastures, and woodlands near water. Nesting/breeding season: March-August.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Falco mexicanus prairie falcon	--/-- G5/S3 WL	Inhabits dry grasslands, shrub-steppe, deserts, and other open areas up to about 10,000 feet elevation. Utilizes cliffs for nesting. Will fly far afield to forage. Nesting/breeding season: March-August.	Low	Marginal habitat is present throughout the BSA and is restricted to foraging habitat. This species may occur transiently within the BSA. This species has been documented within 5 miles of the BSA by the CNDDB. If, present, implementation of mitigation measures will reduce impacts to less than significant.

Table D2. Special Status Animal Species in the Regional Vicinity of the Twitchell Dam Biological Study Area

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence
Gymnogyps californianus California condor	FE/SE G1/S1 FP	Forages in open foothill grasslands and oak savannahs. Roosts in large trees, dead snags, and on large cliffs. Breeds in remote mountainous areas of pine forest or chaparral with cliffs and large rock outcrops and caves. Nesting/breeding season: January-June.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Vireo bellii pusillus least Bell's vireo	FE/SE G5T2/S2 --	Low dense brushy riparian vegetation in vicinity of water or in dry river bottoms; below 2000 feet. Nesting/breeding season: March-August.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Amphibians				
Ambystoma californiense California tiger salamander – Santa Barbara County DPS	FT/ST G2G3/S2S3 SSC	Vernal and seasonal pools and associated grasslands, oak savanna, woodland, and coastal scrub. Needs underground refuges (i.e., small mammal burrows, pipes) in upland areas such as grassland and scrub habitats. Nesting/breeding season: Rainy season.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Anaxyrus californicus arroyo toad	FE/-- G2G3/S2S3 SSC	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian as well as desert wash. This species also inhabits rivers with sandy banks, willows, cottonwoods, and sycamores. In drier parts of the range loose and gravelly areas of streams can be utilized. Nesting/breeding season: Spring.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Rana draytonii California red-legged frog	FT/-- G4T2T3/S2S3 SSC	Semi-permanent or permanent water at least 2 feet deep, bordered by emergent or riparian vegetation, and upland grassland, forest or scrub habitats for refugia and dispersal. Nesting/breeding season: January-March.	Low	Suitable upland habitat is present on-site. This species is not expected to breed within the BSA and would only occur transiently within it. This species has been documented within 5 miles of the BSA by the CNDDB and has been documented at the dam outlet northeast of the project. If, present, implementation of mitigation measures will reduce impacts to less than significant.

Table D2. Special Status Animal Species in the Regional Vicinity of the Twitchell Dam Biological Study Area

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence
Spea hammondii western spadefoot toad	--/-- G3/S3 SSC	Open areas with sandy or gravelly soils, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rain pools that do not support bullfrogs, fish, or crayfish are required for breeding. Nesting/breeding season: January-August.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Reptiles				
Anniella pulchra pulchra silvery legless lizard	--/-- G3G4T3T4Q/S3 SSC	Sandy or loose loamy soils under sparse vegetation such as coastal dune scrub, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather often indicate suitable habitat. Nesting/breeding season: May-September.	Low	Suitable habitat is present within the BSA. This species could be found buried in the soil under shrubs and trees found within the BSA. If, present, implementation of mitigation measures will reduce impacts to less than significant.
Emys marmorata western pond turtle	--/-- G3G4/S3 SSC	Rivers, ponds, freshwater marshes; nests in upland areas (sandy banks or grassy open fields) up to 1,640 feet from water. Nesting/breeding season: April-August.	Low	Suitable upland habitat is present throughout the BSA. This species has been documented at the dam outlet northeast of the BSA and has also been documented within 5 miles by the CNDDB. If, present, implementation of mitigation measures will reduce impacts to less than significant.
Phrynosoma blainvillii coast horned lizard	--/-- G4G5/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial and abundant supply of ants and other insects. Nesting/breeding season: May-September.	Low	Suitable upland habitat is present within the scrub areas within the BSA. This species has been documented near Twitchell dam and has also been documented within 5 miles by the CNDDB. If, present, implementation of mitigation measures will reduce impacts to less than significant.

Table D2. Special Status Animal Species in the Regional Vicinity of the Twitchell Dam Biological Study Area

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence
Thamnophis hammondii two-striped garter snake	--/-- G3/S2 SSC	Occurs near pools, creeks, cattle tanks, and other water sources, often in rocky areas, within oak woodland, chaparral, scrub communities, and coniferous forest. Nesting/breeding season: Spring.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Mammals				
Antrozous pallidus pallid bat	--/-- G5/S3 SSC	Deserts, grasslands, shrublands, woodlands, and forest. Most common in open, dry, habitats with rocky area for roosting. Roost must protect bats from high temperatures. Very sensitive to disturbance of roosting sites. Nesting/breeding season: Spring-summer.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Corynorhinus townsendii Townsend's big-eared bat	--/-- G4/S2S3 SSC	Mesic habitats throughout California. Requires caves, tunnels, mines, or abandon buildings for roosting. Nesting/breeding season: November-February.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Lasiurus blossevillii western red bat	--/-- G5/S3 SSC	Roosts primarily in trees. Prefers habitat edges and mosaics with open areas for foraging and trees that are protected from above and open below. Nesting/breeding season: August and September.	Low	Trees within an adjacent to the BSA provide suitable roosting habitat for this species. This species could also utilize the area within the BSA for foraging. If, present, implementation of mitigation measures will reduce impacts to less than significant.
Lasiurus cinereus hoary bat	--/-- G5/S4 --	Roosts in dense foliage of large trees. Requires water. Prefers open habitats or habitat mosaics with access to trees for cover and open areas of habitat edge for feeding. Nesting/breeding season: Fall.	Low	Trees within an adjacent to the BSA provide suitable roosting habitat for this species. This species could also utilize the area within the BSA for foraging. If, present, implementation of mitigation measures will reduce impacts to less than significant.

Table D2. Special Status Animal Species in the Regional Vicinity of the Twitchell Dam Biological Study Area

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence
Myotis yumanensis Yuma myotis	--/-- G5/S4 --	Optimal habitats are open forests and woodlands with sources of water to forage over. Maternity colonies are located in caves, mines, buildings or crevices. Nesting/breeding season: Spring-summer.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Taxidea taxus American badger	--/-- G4/S4 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Needs sufficient food, friable soils, and open uncultivated ground. Cannot live in frequently plowed fields. Preys on burrowing rodents. Nesting/breeding season: February-May.	Low	The coastal scrub and disturbed areas of the BSA provides marginal habitat for this species. American badgers have been documented within 5 miles of the BSA by the CNDDB. If, present, implementation of mitigation measures will reduce impacts to less than significant.
Invertebrates				
Danaus plexippus monarch butterfly	--/-- G5/S3 --	Roosts in wind-protected tree groves (eucalyptus, Monterey pine, cypress) with nectar and water sources nearby. Species is common in general, but overwintering habitat protected by Santa Barbara County. Nesting/breeding season: September-March.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Branchinecta lynchi vernal pool fairy shrimp	FT/-- G3/S2S3 --	Endemic to the grasslands of the Central Valley, central Coast Mountains, and South Coast Mountains. Inhabits, small clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools. Nesting/breeding season: Fall and Winter.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Fish				
Gasterosteus aculeatus williamsoni unarmored threespine stickleback	FE/SE G5T1/S1 FP	Weedy pools, backwaters and among emergent vegetation at the stream edge in small southern California streams. Water temperatures are <24C. Nesting/breeding season: Year round.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.

Table D2. Special Status Animal Species in the Regional Vicinity of the Twitchell Dam Biological Study Area

Scientific Name Common Name	Status Fed/State ESA G-Rank/S-Rank CDFW	Habitat Requirements	Potential for Impact	Potential for Occurrence
Oncorhynchus mykiss irideus steelhead – south-central California coast DPS	FT/-- G5T2Q/S2 SSC	Fresh water, fast flowing, highly oxygenated, clear, cool stream where riffles tend to predominate pools; small streams with high elevation headwaters close to the ocean that have no impassible barriers; spawning: high elevation headwaters. Nesting/breeding season: January – March.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.
Oncorhynchus mykiss irideus steelhead – southern California DPS	FE/-- G5T2Q/S2 SSC	Fresh water, fast flowing, highly oxygenated, clear, cool stream where riffles tend to predominate pools; small streams with high elevation headwaters close to the ocean that have no impassible barriers; spawning: high elevation headwaters. Nesting/breeding season: January-March.	None	No suitable habitat present within project limits or vicinity and no observations were made during survey.

Regional Vicinity refers to the Twitchell Dam USGS 7.5 min Quad and surrounding eight quads.
FT = Federally Threatened SE = State Endangered
FC = Federal Candidate Species ST = State Threatened
FE = Federally Endangered SR = State Rare
FS=Federally Sensitive SS=State Sensitive
G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind3.
SC = CDFW Species of Special Concern FP = Fully Protected

Appendix D

USFWS IPaC Natural Resources of Concern

U.S. Fish and Wildlife Service

Natural Resources of Concern

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

VENTURA FISH AND WILDLIFE OFFICE
2493 PORTOLA ROAD, SUITE B
VENTURA, CA 93003
(805) 644-1766

Endangered Species Act species list information for your project is NOT available online for the following FWS Field Offices:

SACRAMENTO FISH AND WILDLIFE OFFICE
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
(916) 414-6600

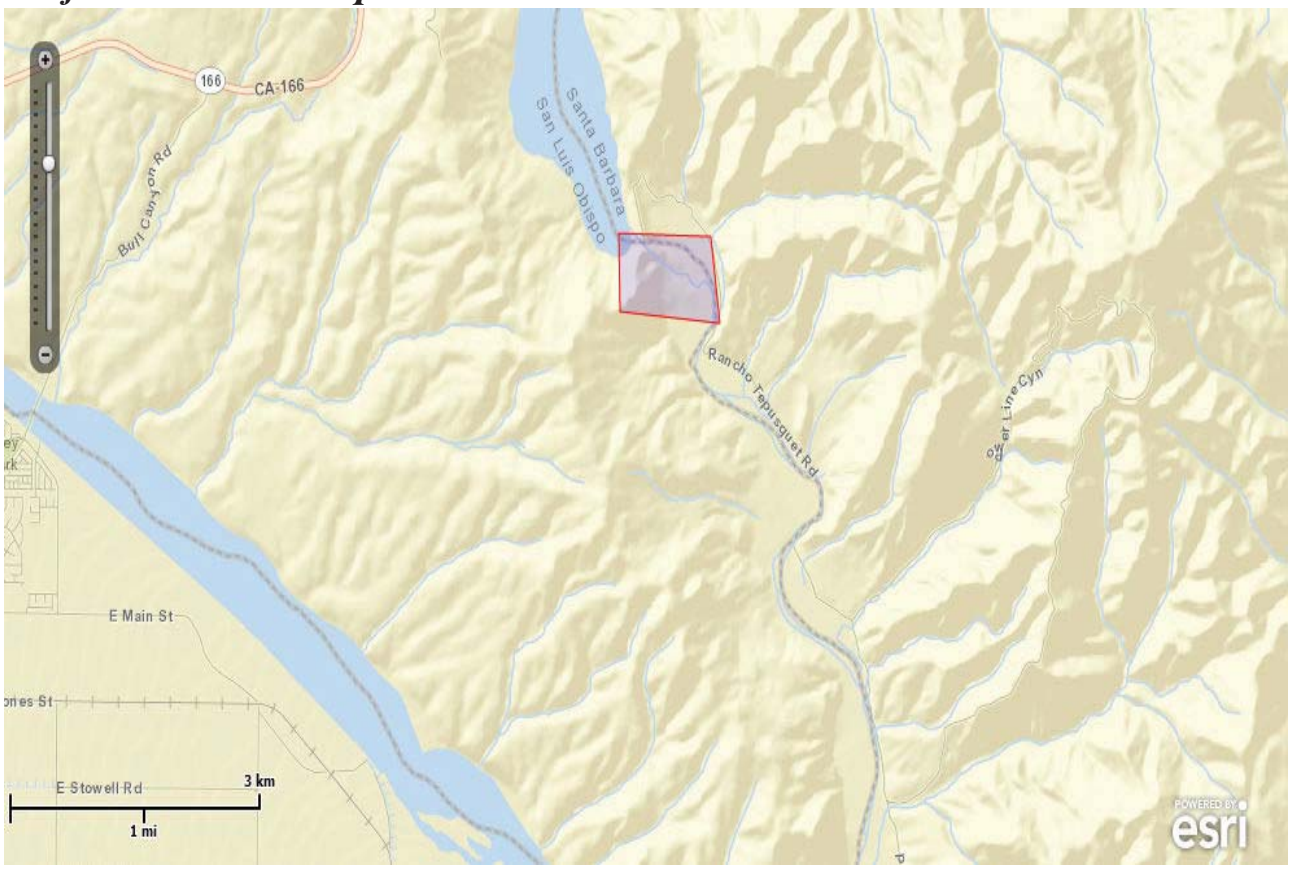
Project Name:

Twitchell Dam Dredging

U.S. Fish and Wildlife Service

Natural Resources of Concern

Project Location Map:



Project Counties:

San Luis Obispo, CA | Santa Barbara, CA

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-120.3259072 34.9848464, -120.3137192 34.9845651, -120.3125176 34.9772513, -120.3257355 34.9782359, -120.3259072 34.9848464)))

Project Type:

Dredge / Excavation

U.S. Fish and Wildlife Service

Natural Resources of Concern

Endangered Species Act Species List (USFWS Endangered Species Program).

There are a total of **10** threatened, endangered, or candidate species, and/or designated critical habitat on your species list. Species on this list are the species that may be affected by your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Please contact the designated FWS office if you have questions.

Species that may be affected by your project:

Amphibians	Status	Species Profile	Contact
Arroyo toad (*Bufo californicus*)	Endangered	species info	Ventura Fish And Wildlife Office
California Tiger Salamander (*Ambystoma californiense*) Population: U.S.A. (CA - Santa Barbara County)	Endangered	species info	Ventura Fish And Wildlife Office
California red-legged frog (*Rana draytonii*) Population: Entire	Threatened	species info	Ventura Fish And Wildlife Office
Birds			
California condor (*Gymnogyps californianus*) Population: Entire, except where listed as an experimental population below	Endangered	species info	Ventura Fish And Wildlife Office
Least Bell's vireo (*Vireo bellii pusillus*)	Endangered	species info	Ventura Fish And Wildlife Office
Southwestern Willow flycatcher (*Empidonax traillii extimus*)	Endangered	species info	Ventura Fish And Wildlife Office
Crustaceans			
Vernal Pool fairy shrimp (*Branchinecta lynchi*)	Threatened	species info	Ventura Fish And Wildlife Office
Flowering Plants			
Gambel's watercress (*Rorippa gambellii*)	Endangered	species info	Ventura Fish And Wildlife Office
Marsh Sandwort (*Arenaria paludicola*)	Endangered	species info	Ventura Fish And Wildlife Office

U.S. Fish and Wildlife Service

Natural Resources of Concern

Spreading navarretia (*Navarretia fossalis*)	Threatened	species info		Ventura Fish And Wildlife Office

FWS National Wildlife Refuges (USFWS National Wildlife Refuges Program).

There are no refuges found within the vicinity of your project.

FWS Migratory Birds (USFWS Migratory Bird Program).

Most species of birds, including eagles and other raptors, are protected under the Migratory Bird Treaty Act (16 U.S.C. 703). Bald eagles and golden eagles receive additional protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668). The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

NWI Wetlands (USFWS National Wetlands Inventory).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

Appendix E

Floral and Faunal Compendia

Plant and Animal Species Observed at the Twitchell Dam Biological Study Area

December 21, 2012

Family Name	*Scientific Name*	Common Name
Plants		
Adoxaceae	*Sambucus nigra* ssp. *caerulea*	blue elderberry
Anacardiaceae	*Toxicodendron diversilobum*	western poison oak
Apiaceae	*Foeniculum vulgare***	fennel
Apiaceae	*Sanicula crassicaulis*	Pacific sanicle
Apocynaceae	*Asclepias fascicularis*	narrow leaf milkweed
Asteraceae	*Ambrosia psilostachya*	western ragweed
Asteraceae	*Artemisia californica*	California sagebrush
Asteraceae	*Baccharis pilularis*	coyote brush
Asteraceae	*Carduus pycnocephalus***	Italian thistle
Asteraceae	*Centaurea melitensis***	tocalote
Asteraceae	*Corethrogyne filaginifolia*	California aster
Asteraceae	*Eriophyllum confertiflorum*	golden yarrow
Asteraceae	*Helminthotheca echioides***	bristly ox-tongue
Asteraceae	*Pseudognaphalium* sp.	cudweed
Asteraceae	*Pseudognaphalium luteoalbum**	cudweed
Asteraceae	*Silybum marianum***	milk thistle
Asteraceae	*Xanthium strumarium*	cocklebur
Brassicaceae	*Hirschfeldia incana***	perennial mustard
Convolvulaceae	*Convolvulus arvensis***	field bindweed
Crassulaceae	*Dudleya* sp.	dudleya
Cyperaceae	*Cyperus eragrostis*	tall flatsedge
Fabaceae	*Acmispon glaber*	deerweed
Fabaceae	*Trifolium* sp.	clover
Fagaceae	*Quercus agrifolia*	coast live oak
Geraniaceae	*Erodium botrys***	filaree
Geraniaceae	*Geranium molle***	woodland geranium
Lamiaceae	*Salvia leucophylla*	purple sage
Lamiaceae	*Stachys bullata*	hedge-nettle
Myrsinaceae	*Anagallis arvensis**	scarlet pimpernel
Papaveraceae	*Eschscholzia californica*	California poppy
Phrymaceae	*Mimulus aurantiacus*	bush monkeyflower
Platanaceae	*Platanus racemosa*	California sycamore
Poaceae	*Avena barbata***	slender wild oat
Poaceae	*Bromus madritensis* ssp. *rubens***	red brome
Poaceae	*Elymus condensatus*	giant wild-rye
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat
Polygonaceae	*Eriogonum* sp.	buckwheat

Family Name	*Scientific Name*	Common Name
Polygonaceae	*Rumex crispus***	curly dock
Polygonaceae	*Rumex* sp.	rumex
Rhamnaceae	*Rhamnus ilicifolia*	hollyleaf redberry
Rosaceae	*Cercocarpus betuloides*	mountain mahogany
Salicaceae	*Salix exigua*	sandbar willow
Salicaceae	*Salix laevigata*	red willow
Scrophulariaceae	*Scrophularia* sp.	figwort
Solanaceae	*Nicotiana glauca***	tree tobacco
Solanaceae	*Solanum* sp.	nightshade
Urticaceae	*Urtica dioica*	stinging nettle
Verbenaceae	*Verbena lasiostachys*	verbena
Viscaceae	*Phoradendron serotinum*	mistletoe
Animals		
Accipitridae	*Buteo jamaicensis*	Red-tailed hawk
Aegithalidae	*Psaltriparus minimus*	Bushtit
Canidae	*Canis latrans*	Coyote
Cervidae	*Odocoileus hemionus*	Mule deer
Corvidae	*Aphelocoma californica*	Western scrub jay
Cricetidae	*Neotoma* sp.	Woodrat
Emberizidae	*Melozone crissalis*	California towhee
Odontophoridae	*Callipepla californica*	California quail
Picidae	*Colaptes auratus*	Northern flicker
Regulidae	*Regulus calendula*	Ruby-crowned kinglet
Viperidae	*Crotalus oreganus*	Western rattlesnake

*Indicates a non-native species.
** Indicates a non-native species that is recognized and being tracked by the California Invasive Plant Council (Cal-IPC).

Appendix F

Site Photographs

Coyote bush scrub habitat found within the dredge pipe path northwest of the spillway mouth. This photo was taken facing east.

Photo depicting coastal sage scrub habitat found east of the spillway access road. This photo was taken facing north.