

Biological Resource Assessment

For

Aerojet Mining

Sacramento County, California

April 7, 2006

Prepared for:

Granite Construction Company



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

CONTENTS

Biological Resource Assessment

Aerojet Mining

INTRODUCTION 1

 Previous Studies 3

 Existing Site Conditions 4

 Annual Grasslands 6

 Woodland Communities..... 6

 Scrub Communities..... 6

RESULTS AND DISCUSSION 7

 Waters of the U.S. 7

 Wetlands 10

 Season Wetlands..... 10

 Vernal Pools..... 10

 Seasonal Wetland Swales..... 10

 Other Waters 11

 Ephemeral Drainage 11

 Isolated Wetlands..... 11

 Special-Status Species 11

 Plants 12

 Invertebrates 12

 Fish 14

 Amphibians 16

 Reptiles 16

 Birds..... 17

 Nesting Raptors 17

 Nesting Songbirds 18

 Non-Nesting Species..... 18

 Mammals 19

 Native Oak Trees..... 20

CONCLUSION..... 20

REFERENCES 23

LIST OF TABLES

Table 1. Waters of the U.S. 7

LIST OF FIGURES

Figure 1. Project Site and Vicinity Map 2
Figure 2. Aerial View of Project Site 5
Figure 3. Natural Resources Conservation Service Soil Types 8
Figure 4. Wetland Delineation 9
Figure 5. CNDDDB Special-Status Species Map 13
Figure 6. Elderberry Locations 15
Figure 7. Tree Locations 21

LIST OF ATTACHMENTS

- Attachment A – Wetland Delineation and Elderberry Locations
- Attachment B – Potentially Occurring Special-Status Species
- Attachment C – CNDDDB Report for the Buffalo Creek Quadrangle
- Attachment D – Gibson and Skordal Elderberry Stem Count Data for Shrubs Located Within the Project Site

INTRODUCTION

The 1,319±-acre Aerojet Mining project site (project site) is located south of White Rock Road, north of Douglas Road, and east of Sunrise Boulevard (Figure 1. *Project Site and Vicinity Map*). The site corresponds to unsectioned portions of Townships 8 North and 9 North, Range 7 East (MDBM) of the "Buffalo Creek, California" 7.5-minute quadrangle (U.S. Department of the Interior, Geological Survey, 1967, photorevised 1980). The site is located at approximately 38° 34' 50" North and 121° 13' 00" West within the Lower American River Watershed (#18020111, U.S. Department of Interior, Geological Survey 1978).

The purpose of this biological resource assessment is to identify waters of the U.S. and to assess the potential for occurrence of special-status plant and wildlife species within the project site.

For the purposes of this assessment, "special-status" refers to those species which:

- Have been designated by the Fish and Game Commission or the U.S. Fish and Wildlife Services (USFWS) as either *rare*, *threatened*, or *endangered*; and are legally protected under the California and/or federal Endangered Species Acts; or
- Are proposed or candidate species being considered for listing under either the California or federal Endangered Species Acts; or
- Are of expressly stated interest to resource regulatory agencies, or local jurisdictions, such as California Department of Fish and Game (CDFG) species of special concern, federal species of concern, or California Native Plant Society (CNPS) List 1 and 2 species.

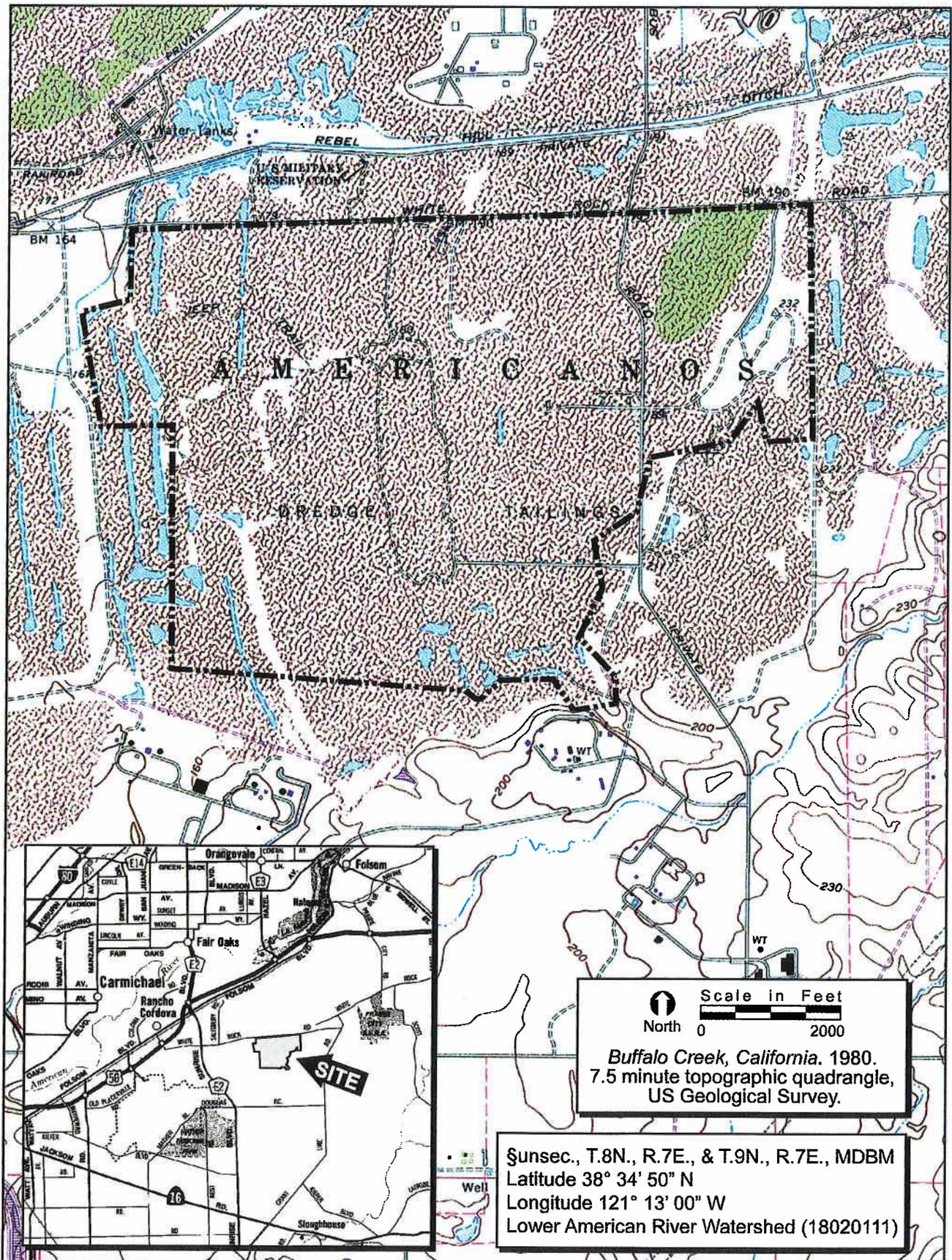


FIGURE 1. Project Site and Vicinity Map

Previous Studies

A variety of references were obtained and reviewed in an effort to incorporate biological information previously collected within the project site and its immediate vicinity. The project site is contained within the Rio Del Oro property. Several surveys have been previously conducted on-site. The following reports were used in the preparation of this biological resource assessment:

- *Results of Surveys for Special-Status Wildlife Species at the Aerojet Property, Sacramento County, California* (Miriam Green Associates, April 1999)
A series of wildlife surveys were conducted on the 3,860-acre Aerojet Property south of White Rock Road and north of Douglas Road during February and March of 1999. The purpose of these surveys was to search for special-status wildlife species and to identify whether suitable habitat for any of these species is present on the site.
- *Jurisdictional Delineation Rio del Oro Property* (Gibson and Skordal, June 1999)
A wetland delineation of the 3,860-acre Rio Del Oro property was conducted to identify potential waters of the U.S.
- *Listed Vernal Pool Branchiopods Wet Season Survey* (Gibson and Skordal, August 2000)
Protocol surveys for listed vernal pool branchiopods were conducted during the year 2000 wet season within an approximately 1,800-acre portion of the 3,860-acre Rio Del Oro property.
- *Listed Vernal Pool Branchiopods Wet Season Survey* (Gibson and Skordal, July 2001)
Protocol surveys for listed vernal pool branchiopods were conducted during the year 2001 wet season throughout a portion (subset of the lands surveyed in 2000) of the 3,860-acre Rio Del Oro property.
- *Elderberry Survey* (Gibson and Skordal, September 2000)
A focused survey for elderberry (*Sambucus mexicana*) shrubs located within the 3,860-acre Rio Del Oro property was conducted during July and August 2000.

- *Rio del Oro, Rancho Cordova, California – Rare Plant Survey* (ECORP Consulting, Inc., August 2003)

Rare plant surveys were conducted throughout potentially suitable habitats located within the 3,892±-acre Rio Del Oro property during various dates in May 2003.

- *Biological Assessment for Rio del Oro* (ECORP Consulting, Inc., September 2003)

A biological assessment was prepared for the 3,892±-acre Rio Del Oro property. The purpose of this assessment was to identify potential waters of the U.S. and to assess the potential for occurrence of special-status plant and wildlife species within the property.

- *Wetland Delineation for Rio del Oro* (ECORP Consulting, Inc., December 9, 2004)

A wetland delineation of the 3,893±-acre Rio Del Oro project area was conducted to identify potential waters of the U.S. The site was previously delineated by Gibson and Skordal in 1999 and subsequently verified by the U.S. Army Corps of Engineers on January 5, 2000. Due to the pending expiration of the original verification, the project area was re-delineated in June 2004.

Existing Site Conditions

The site was used for gold mining operations from the 1920s through the 1950s. The mining activities consisted of dredging ancient alluvial deposits. The areas that were mined are marked today by alternating piles of dredge tailings and lower areas where the finer sediment settled out. Linear dredge tailing piles, some reaching 60 feet in height, are prevalent throughout the site (Figure 2. *Aerial View of Project Site*). The cobble piles themselves are xeric environments characterized by cobble and remnant soils with sparse vegetation. Vegetation communities occur primarily within the low-lying areas between the tailing piles. Vegetation communities identified within the project site can generally be grouped into three categories: woodland, scrub, and grassland communities.



FIGURE 2. Aerial View of Project Site

2005-068

AEROJET MINING



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Annual Grassland

Non-native, naturalized Mediterranean grasses represent the predominant species within this community. Species commonly encountered include soft brome (*Bromus hordeaceus*), wild oat (*Avena fatua*), medusahead grass (*Taeniatherum caput-medusae*), Italian ryegrass (*Lolium multiflorum*), and little quaking grass (*Briza minor*). Other herbaceous species that occur in this community include yellow star-thistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), filaree (*Erodium botrys*), rose clover (*Trifolium hirtum*), sticky tarweed (*Holocarpha virgata*), and common vetch (*Vicia sativa*).

Woodland Communities

Woodland communities present within the project site can further be defined as Fremont cottonwood woodland, Fremont cottonwood-willow woodland, willow woodland, and oak woodland. These communities generally occur within the depressions between the tailing piles and have relatively open tree canopies. Fremont cottonwood (*Populus fremontii*), willows (*Salix* spp.), and interior live oaks (*Quercus wislizenii*) are the predominant tree species. The understory of these communities also tends to be relatively open. Species commonly observed in the understory include a variety of annual grasses, coyote brush (*Baccharis pilularis*), and willow.

Scrub Communities

Scrub communities present within the project site include coyote brush scrub, willow scrub, and mixed scrub. These communities generally occur within low-lying areas between tailing piles. Coyote brush and willow are typically the dominant species, forming shrub layers that range from relatively dense to open. An herbaceous understory, consisting of a variety of annual grasses and forbs, typically occurs in the openings between shrubs.

According to the *Soil Survey of Sacramento County, California* (U.S. Department of Agriculture, Soil Conservation Service 1993), four soil units, or types, have been mapped within the project site (Figure 3. *Natural Resources Conservation Service Soil Types*). These are: (159) Hicksville gravely loam, occasionally flooded, 0-2% slopes; (196) Red Bluff-Xerorthents, 2-50% slopes; (223) Slickens; and (245) Xerorthent, dredge tailings, 2-50% slopes. Of these soil types, only (223) Slickens contain a listed hydric component. Although the components of the remaining three soil types are non-hydric, they are known to contain hydric inclusions.

RESULTS AND DISCUSSION

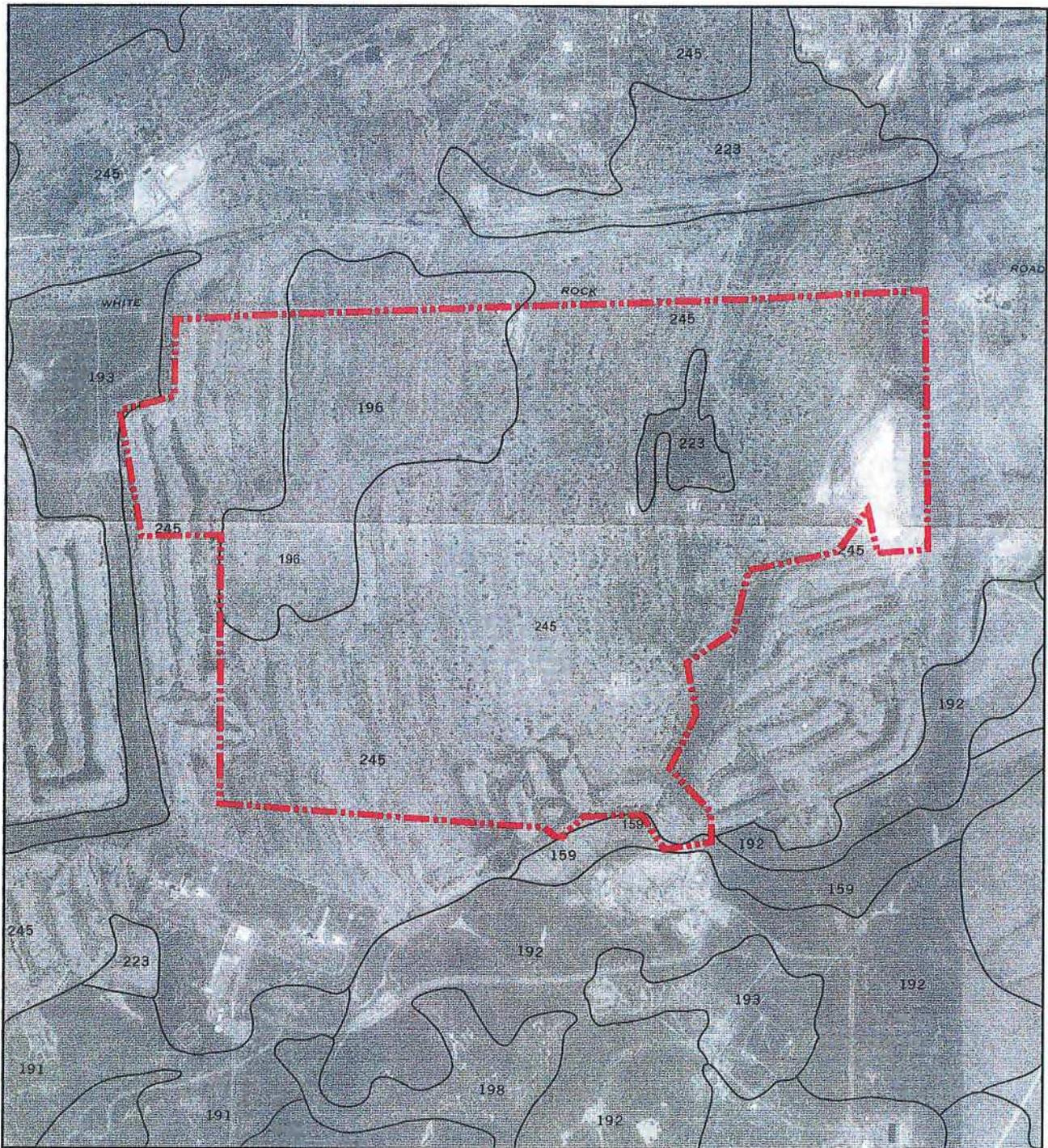
Waters of the U.S.

A wetland delineation of Rio Del Oro, including the project site, was first conducted by Gibson and Skordal in 1999 and was later revised by ECORP Consulting, Inc. on October 21, 2004. A field verification was conducted with the U.S. Army Corps of Engineers (Corps) on September 30, 2004, and the delineation was subsequently verified on January 10, 2005. A total of 0.224 acre of jurisdictional waters of the U.S. were identified within the project site (Table 1, Figure 4. *Wetland Delineation, Attachment A*). In addition, 8.800-acres of non-jurisdictional (isolated) wetlands were identified in the project site.

Table 1. Waters of the U.S.

Type	Acreage¹		
	Jurisdictional	Isolated	Existing
Wetlands			
Seasonal Wetlands	0.047	8.655	8.702
Vernal Pool	0.000	0.072	0.072
Seasonal Wetland Swale	0.008	0.073	0.081
Other Waters			
Ephemeral Drainage	0.169	0.000	0.169
Total:	0.224	8.800	9.024

¹ The waters of the U.S. acreages were verified by the Corps in a letter dated January 10, 2005.



- 159* Hicksville gravelly loam, occassionally flooded, 0-2% slopes
- 196* Red Bluff-Xerorthents, 2-50% slopes
- 223** Slickens
- 245* Xerorthents, dredge tailings, 2-50% slope

* Soil unit contains listed hydric inclusions.
 ** Soil unit consists of listed hydric components.

NRCS Soil Survey, Sacramento County, California, 1993.

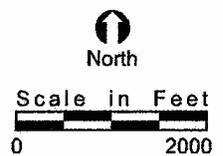
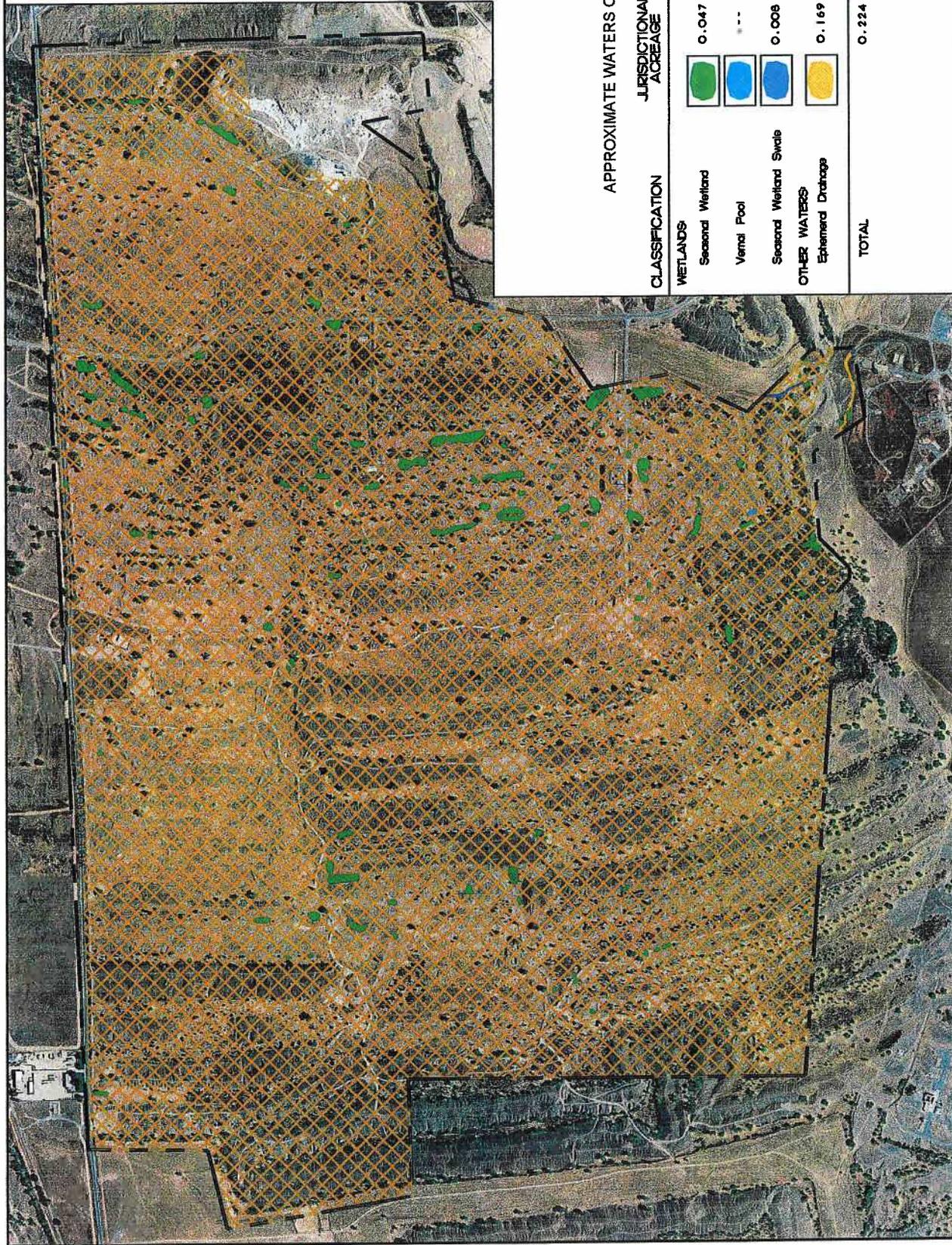


FIGURE 3. Natural Resources Conservation Service Soil Types



SCALE IN FEET
 0 600 1200
 SCALE 1" = 1300'

APPROXIMATE WATERS OF THE U.S. ACREAGE ¹

CLASSIFICATION	JURISDICTIONAL ACREAGE	ISOLATED ACREAGE	EXISTING ACREAGE
WETLANDS			
Seasonal Wetland	0.047	6.655	6.702
Vernal Pool	---	0.072	0.072
Seasonal Wetland Swale	0.009	0.073	0.081
OTHER WATERS			
Ephemeral Drainage	0.169	---	0.169
TOTAL	0.224	6.800	9.024

X:\2005-068 Aerojet Mining\WD\AM-RDO-WD.dwg 3/18/06

FIGURE 4. Wetland Delineation

Wetlands

Seasonal Wetlands

Seasonal wetlands are ephemerally wet areas where surface runoff and rainwater accumulate within low-lying areas. They become inundated during the winter and fall but dry completely during the summer months. Seasonal wetlands are commonly dominated by non-native wetland generalist plants, such as Italian ryegrass, Mediterranean barley (*Hordeum marinum*), dock (*Rumex* spp.), and annual rabbit-foot grass (*Polypogon monspeliensis*). Less common are native species such as Baltic rush (*Juncus balticus*) and creeping spikerush (*Eleocharis macrostachya*).

Vernal Pools

A limited number of vernal pools are located within the annual grassland portions of the project site. Vernal pools are topographic basins that are typically underlain with an impermeable or semi-permeable hardpan or duripan layer. Vernal pools are typically inundated through the wet season and dry by late spring through the following wet season. Plant species observed within vernal pools include Carter's buttercup (*Ranunculus bonariensis*), Vasey's coyote-thistle (*Eryngium vaseyi*), creeping spikerush, and slender popcorn-flower (*Plagiobothrys stipitatus*).

Seasonal Wetland Swales

Seasonal wetland swales are linear wetland features that do not exhibit an ordinary high water mark and lack defined bed-and-bank characteristics. Plant species found within seasonal wetland swales include a variety of non-native naturalized species such as Italian ryegrass, Mediterranean barley, and dock, as well as native annual species including Vasey's coyote-thistle.

Other Waters

Ephemeral Drainage

Ephemeral drainages are seasonal, linear features that convey runoff for short periods of time, immediately following rain events and do not receive supplemental water from groundwater sources. In general, they exhibit bed-and-bank characteristics and are largely un-vegetated due to the scouring effects of flowing water. Occasionally however, some hydrophytic vegetation is present along the upper edges, and/or in areas where sediment accumulation provides suitable substrate for plant establishment.

Isolated Wetlands

A significant proportion of the wetland features (vernal pools, seasonal wetlands, and seasonal wetland swales) identified within the project site were mapped as non-jurisdictional because they were considered 'isolated' wetlands per the SWANCC decision (Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, No. 99-1178 [January 9, 2001]). According to the SWANCC decision, wetlands that are 'non-navigable, isolated, and intrastate' may fall outside of the Corps' jurisdiction. Isolated wetlands are those wetlands that are not part of (or adjacent to) the tributary system of traditional navigable waters or interstate waters. 'Adjacent' is defined by regulation as "bordering, contiguous, or neighboring." Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands' [33 C.F.R. §328.3(d)].

Special-Status Species

A list of potentially occurring special-status species was developed for the project site, based on vegetation communities and conditions present on-site, species' known distributive data, prior site studies, and various reference sources (e.g., CNPS 2001, CDFG 2003, Jennings and Hayes 1994) (Attachment B). A number of regionally occurring special-status species have been previously documented within the "Buffalo Creek, California" 7.5-minute quadrangle (CDFG

2003, Attachment C). California Natural Diversity Database occurrence records located within 5-miles of the project site are depicted on Figure 5 (*CNDDDB Special-Status Species Map*).

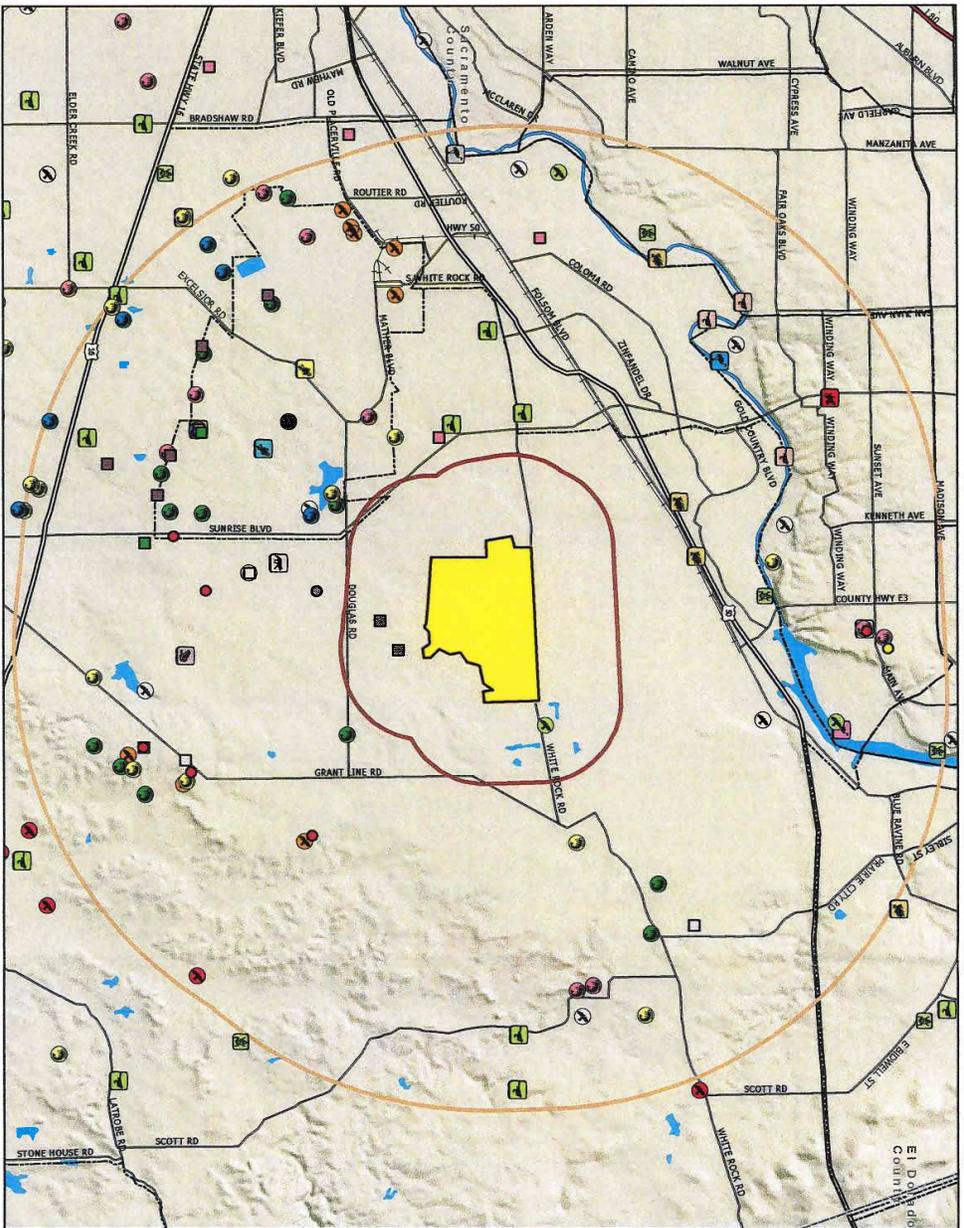
Plants

Special-status plant species with potential to occur on the project site include: dwarf downingia (*Downingia pusilla*, CNPS List 2 species); Boggs Lake hedge-hyssop (*Gratiola heterosepala*, California endangered and CNPS List 1B species); Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*, federal species of concern and CNPS List 1B species); Greene's legenera (*Legenera limosa*, federal species of concern and CNPS List 1B species); pincushion navarretia (*Navarretia myersii* ssp. *myersii*, federal species of concern and CNPS List 1B), slender Orcutt grass (*Orcuttia tenuis*, federal threatened, California endangered, and CNPS List 1B species); and Sacramento Orcutt grass (*Orcuttia viscida*, federal endangered, California endangered, and CNPS List 1B species). Of these, Boggs Lake hedge-hyssop, slender Orcutt grass, and Sacramento Orcutt grass are listed and protected pursuant to the California and/or federal Endangered Species Acts. Dwarf downingia, Greene's legenera, pincushion navarretia, and Ahart's dwarf rush are not listed and protected pursuant to either the California or federal Endangered Species Acts. However, these species may be considered by local jurisdictions during the CEQA review process.

No special-status plant species were observed within the project site during the spring 2003 surveys performed by ECORP Consulting, Inc. However, Greene's legenera was observed within the greater Rio Del Oro property.

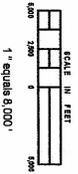
Invertebrates

The seasonal wetlands and vernal pools on the project site represent potential habitat for the vernal pool fairy shrimp (*Branchinecta lynchi*, federal threatened), vernal pool tadpole shrimp (*Lepidurus packardii*, federal endangered), midvalley fairy shrimp (*Branchinecta mesoaliensis*, federal species of concern), and California linderiella (*Linderiella occidentalis*, federal species of concern). Gibson and Skordal conducted wet season surveys during 2000 and 2001 on portions



NOTES

CORP California Natural Diversity Database (CNDDB), January 2008 Update (GIS Shapefile)
 Map Projection: California State Plane Zone II (NAD83) feet
 Map Extent: Located on USGS 7.5 Quadrangle: Chipmunk Heights, Polson, Chico, Colusa, Camanche,
 Butte Creek, Folsom, SE, Shinghouse and Carbonado, CA



VICINITY MAP

FIGURE 5. CNDDB SPECIAL-STATUS SPECIES MAP

<p>2005-068 Aerojet Mining</p>	
Location: GIS Maps/2005-068 Aerojet Mining	Map Name: AM_CNDDB.mxd
Original Production Date: 03/07/06	Project Manager: BALLARDA
Printing Date: 03/07/06	Scale: 1" equals 8,000'
GIS Specialist: JJS	

<p>Headquarters 2200 Douglas Blvd, Suite 100 Sacramento, CA 95820 Phone: 916.486.8000</p>	<p>Regional Office 1371 East 24th St, Suite 100 Sacramento, CA 95833 Phone: 916.486.8000</p>	<p>Central Office 2100 Embarcadero, Suite 201 San Francisco, CA 94133 Phone: 415.444.1000</p>	<p>Field Office 412 East 24th St, Suite 100 Sacramento, CA 95833 Phone: 916.486.8000</p>
---	--	---	--



Ecorp Consulting, Inc.
 ENVIRONMENTAL CONSULTANTS

- Map Features**
- Administrative Boundaries
 - City Boundary
 - County Boundary
 - Project Boundary
 - Buffers
 - 1 mile
 - 5 mile
 - Transportation Network
 - Interstate
 - State Highway
 - Roads
 - Railroads
 - Hydrologic Features
 - Lakes and Reservoirs
 - Rivers

- 1' CNDDB Occurrences**
- Plants**
- phacelia nevadensis
 - slender orcutt grass
 - Sacramento orcutt grass
 - Ahert's dwarf rush
 - Sartford's arrowhead
 - Boggs Lake hedge-hyssop
 - legume
 - Inverfezites
 - Dumortia oregonensis
 - Ricksecker's water scavenger beetle
 - Andrena subopacata
 - midvalley fairy shrimp
 - vernal pool fairy shrimp
 - vernal pool tadpole shrimp
 - California linderella
 - valley elderberry longhorn beetle
- Reptiles / Amphibians**
- western speedboat toad
 - northwestern pond turtle
- Birds**
- Cooper's hawk
 - Swainson's hawk
 - burrowing owl
 - white-tailed kite
 - double-crested cormorant
 - great egret
 - great blue heron
 - bank swallow
 - hooded malkin
 - Neotoma
 - American badger

of the project site. Vernal pool fairy shrimp and vernal pool tadpole shrimp were found in a limited number of surveyed wetlands in the open grassland communities adjacent to but not within the dredger tailing piles (Gibson and Skordal 2000a, 2001). Vernal pool fairy shrimp were documented in two seasonal wetlands located within the project site (SD100 and SD103 [SW123 and SW129, respectively, on the 2005 verified delineation]). Vernal pool tadpole shrimp were documented in five features located adjacent to, but not within, the project site (P2, P3, SD31, SD32, and SD33 [P1, P2, SW46, SW47, and SW48, respectively, on the 2005 verified delineation]). California linderiella were observed during both survey years in a variety of seasonal wetlands, ponds, and riparian wetlands (Gibson and Skordal 2000a, 2001). Midvalley fairy shrimp were not observed on-site during these survey efforts. The USFWS is ultimately responsible for making the determination of potentially suitable habitat.

Blue elderberry shrubs (*Sambucus mexicana*) present on-site, represent suitable habitat for the federally-threatened Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). The Valley elderberry longhorn beetle is completely dependent on its host plant, elderberry, which occurs in riparian and other woodland communities in California's Central Valley and associated foothills (USFWS 1999). Gibson and Skordal (2000b) conducted an elderberry survey on Rio Del Oro, including the project site, during July and August of 2000. A total of 266 elderberry shrubs were located on the project site (Figure 6. *Elderberry Locations*). A summary of the stem count data for these shrubs is provided in Attachment D. Evidence of Valley elderberry longhorn beetle occurrence (i.e., exit holes) was observed on 37 (14 percent) of these shrubs (Attachment D). Elderberry surveys are valid for a period of two years (USFWS 1999).

Fish

There is no habitat for special-status fish species on the project site.



Legend

Elderberry Location
266 strubs

SCALE IN FEET
0 200 400
SCALE 1" = 800'

DATA SOURCE: GIBSON & SKORDAL, 2000

X:\2005-048 Aerial Mining\VA\AM48D01.dwg 3/9/05

FIGURE 6. Elderberry Locations

2005-048 AERIAL MINING

Amphibians

The vernal pools and adjacent grasslands on-site represent potentially suitable habitat for the western spadefoot toad (*Spea hammondi*, federal species of concern and CDFG species of special concern). The western spadefoot toad utilizes ephemeral pools and drainages, which are typically absent of larger predatory fish and bullfrogs (*Rana catesbeiana*), for egg-laying and larval development. Upon metamorphosis, the adults are largely terrestrial in nature and will burrow underground using the hardened "spades" on the hind feet.

Miriam Green Associates observed western spadefoot toads on-site during surveys conducted in 1999 for special-status wildlife species. Based on the location descriptions provided in the report, two of the occurrences appear to be located within or adjacent to the project site. "One adult male was noted chorusing in the intermittent drainage near the northern end of the property along the north-south road from White Rock Road to Douglas Road on the night of February 26, 1999. Larval western spadefoot toads were first noted on March 4, 1999 in a shallow pool devoid of vegetation located in the northeastern corner of the property (Rio Del Oro). This pool exists in the center of the mineral mining operations presumably run by the Clark Cattle Company and can best be described as a puddle in the roadway" (Miriam Green Associates 1999).

Reptiles

Western pond turtles (*Emys* [= *Clemmys*] *marmorata*, federal species of concern and CDFG species of special concern) typically occur in perennial streams, creeks, ponds, marshes, and irrigation ditches with aquatic vegetation (CDFG 2003). The availability of basking sites and suitable upland environments for egg laying are important components of suitable habitat for this species. Western pond turtles were not observed during the 1999 special-status species surveys conducted by Miriam Green Associates. However, a pond located in the northeastern corner of the project site was identified as potentially suitable habitat for the species (Miriam Green Associates 1999). The pond appears to have received artificial discharge based on the presence of decomposing flex-hoses that lead into the feature. In the absence of the artificial water source, the pond has since dried up completely and was subsequently not included in the

verified wetland delineation. Therefore, as this feature has reverted to an upland setting, it is unlikely that it continues to represent potentially suitable habitat for western pond turtles.

Birds

Plant communities on-site represent potentially suitable habitat for a number of regionally occurring special-status bird species. Potentially occurring special-status birds include nesting raptors, nesting songbirds, and wintering or migrant birds.

Nesting Raptors

All raptors or birds of prey (owls, hawks, falcons), including common species, and their nests, are protected from take pursuant to Section 3503.5 of the Fish and Game Code of California, as well as, protected by the Federal Migratory Bird Treaty Act. In addition, the Swainson's hawk (*Buteo swainsoni*, California threatened) is protected pursuant to the California Endangered Species Act. Although not listed in accordance with either the California or federal Endangered Species Acts, with the exception of Swainson's hawk, the raptors described below may be considered during the CEQA review process. Nesting raptors include both tree nesting and ground nesting species. Nesting generally occurs from February – August. The lead agency may require pre-construction surveys on the project site.

Tree nesting species that may occur on-site are white-tailed kite (*Elanus leucurus*, federal species of concern and Fish and Game Code fully protected), Cooper's hawk (*Accipiter cooperii*, CDFG species of special concern), and Swainson's hawk. Both the white-tailed kite and Cooper's hawk have been documented within the Rio Del Oro property (Miriam Green Associates 1999, ECORP pers. obs.). In addition, the CNDDDB contains a Cooper's Hawk record along White Rock Road, located immediately to the east of the project site (CDFG 2003) (refer to Figure 5). There are no previously documented occurrences of Swainson's hawk within project site, or the greater Rio Del Oro property. Two adult and two juvenile (already fledged) Swainson's hawks were observed in July 2005 approximately 1-mile west of the project site (ECORP pers. obs.). The juveniles were observed perching in and soaring above a cottonwood, located approximately 400 feet north of White Rock Road, where a nest of appropriate size and

structure was observed. Based on the observation of a number of pellets and the remains of other prey items on the ground below the nest, and the apparent close association of the juveniles to the tree where the nest was located, it is likely that this site represented an active Swainson's hawk nest during the 2005 nesting season.

The annual grassland areas on-site represent potential nesting habitat for two ground-nesting species: northern harrier (*Circus cyaneus*, CDFG species of special concern) and western burrowing owl (*Athene cunicularia*, federal species of concern, USFWS Bird of Conservation Concern, and CDFG species of special concern). Northern harriers have been documented within the Rio Del Oro property (Miriam Green Associates 1999, ECORP pers. obs.). Although no burrowing owls were observed during the 1999 surveys (Miriam Green Associates 1999), potentially suitable habitat is present on-site.

Nesting Songbirds

Loggerhead shrikes (*Lanius ludovicianus*, federal species of concern, USFWS Bird of Conservation Concern, and CDFG species of special concern) and lark sparrows (*Chondestes grammacus*, CNDDDB) nest in small trees and shrubs within savannah and grassland communities. Both of these species have been previously observed within the Rio Del Oro property (Miriam Green Associates 1999, ECORP pers. obs.).

California thrashers (*Toxostoma redivivum*, federal species of concern) are typically associated with chaparral and riparian scrub communities. Coyote brush scrub, willow scrub, and mixed scrub communities present within the project site represent potentially suitable habitat. There are no documented occurrences of this species within the project site.

Non-Nesting Species

Other special-status birds that may occur on-site are not known to nest in this region and/or suitable nesting habitat is not present on-site. However, grasslands, woodlands, and other communities present on-site represent potential foraging habitat for these remaining species. These are sharp-shinned hawk (*Accipiter striatus*, CDFG species of special concern), ferruginous

hawk (*Buteo regalis*, federal species of concern, USFWS Bird of Conservation Concern, and CDFG species of special concern), golden eagle (*Aquila chrysaetos*, USFWS Bird of Conservation Concern, Fish and Game Code fully protected, and CDFG species of special concern), merlin (*Falco columbarius*, CDFG species of special concern), and tricolored blackbird (*Agelaius tricolor*, federal species of concern, USFWS Bird of Conservation Concern, and CDFG species of special concern).

Although not listed pursuant to either the California or federal Endangered Species Acts these species are designated as federal species of concern and/or CDFG species of special concern and as such may be considered during the CEQA review process.

Mammals

The project site may provide foraging and roosting habitat for three special-status bats that are known to occur in this region. These are: Yuma myotis (*Myotis yumanensis*, federal species of concern), Townsend's big-eared bat (*Corynorhinus townsendii*, federal species of concern and CDFG species of special concern), and pallid bat (*Antrozous pallidus*, CDFG species of special concern). Typical roost sites for these species include trees, snags, appropriate cliffs, abandoned and occupied buildings, caves, mines, and bridges.

Annual grasslands within the project area represent potentially suitable habitat for the American badger (*Taxidea taxus*, CDFG species of special concern). This species is an uncommon, permanent resident of suitable environments throughout most of the state (Zeiner et al. 1990b). There are no documented occurrences of this species within the project area. The nearest CNDDDB occurrence is located approximately 2 miles to the south of the project site (CDFG 2003) (refer to Figure 5).

Although these mammalian species are not listed and protected pursuant to either the California or federal Endangered Species Acts, they are designated as federal species of concern and/or CDFG species of special concern. Therefore, these species may be considered during the CEQA review process.

Native Oak Trees

While not considered a special-status species as defined above, native oak trees are regulated pursuant to the Sacramento County Tree Preservation and Protection Ordinance. In accordance with this ordinance, a "tree" refers to any living native oak tree having at least one trunk of six inches or more in diameter measured four and one-half (4.5) feet above the ground (dbh), or a multi-trunked native oak tree having an aggregate dbh of ten inches or more. Sierra Nevada Arborists completed a cruise-type inventory of native trees for the Rio Del Oro property. A total of 35 oak trees with a dbh greater than 6-inches have been documented on the project site (Sierra Nevada Arborists 2003). Tree locations within the project site are represented in Figure 7. The methods and results of the tree inventory are presented under separate cover.

CONCLUSION

A wetland delineation of Rio Del Oro, which includes the project site, was first conducted by Gibson and Skordal in 1999 and was later revised by ECORP Consulting, Inc. on October 21, 2004. A field verification was conducted with the Corps on September 30, 2004, and the delineation was subsequently verified on January 10, 2005. Approximately 9.024 acres of waters of the U.S. were identified within the project site. Of the total acreage, the Corps determined that approximately 0.224 acre was jurisdictional waters of the U.S., while the remaining 8.800 acres were isolated wetlands and therefore are not under the Corps jurisdiction. The jurisdictional waters of the U.S. consist of seasonal wetland (0.047 acre), seasonal wetland swale (0.008 acre), and ephemeral drainage (0.169 acre). The isolated wetlands consist of seasonal wetlands (8.655 acres), vernal pool (0.072 acre), and seasonal wetland swale (0.073 acre). Although impacts to isolated wetlands would not require permitting pursuant to Section 404 of the federal Clean Water Act, discharges to wetlands and other "waters of the state" must be reported to the Regional Water Quality Control Board, pursuant to the California Porter-Cologne Water Quality Control Act.



FIGURE 7. Tree Locations

2005-068 AIRBORNE MAPPING

X:\2005-068_Aerial\Maping\MISC\AM-RD-C-Tree.dwg 3/9/06
 DATA SOURCE: SIERRA, NEVADA ARBORIST
 SCALE: 1" = 800'
 SCALE IN FEET
 0 100 200


The vegetation communities present on-site represent potentially suitable habitat for several regionally occurring special-status species. Plants include: dwarf downingia, Boggs Lake hedge-hyssop, Ahart's dwarf rush, pincushion navarretia, Greene's legenera, slender Orcutt grass, and Sacramento Orcutt grass. Vernal pool fairy shrimp, vernal pool tadpole shrimp, midvalley fairy shrimp, and California linderiella may occur in vernal pools and seasonal wetlands. Elderberry shrubs on the project site represent habitat for the Valley elderberry longhorn beetle. Vernal pools and adjacent grasslands may provide habitat for the western spadefoot toad. Potentially suitable habitat for the coast horned lizard occurs within the project site. Potential nesting habitat is present for special-status raptors (white-tailed kite, Cooper's hawk, Swainson's hawk, northern harrier, burrowing owl, and other common raptor species) and special-status songbirds (loggerhead shrike, lark sparrow, and California thrasher). Other special-status birds that may occur in the project site, but are not known to nest in the region and/or suitable habitat is not present in the project site are: sharp-shinned hawk, ferruginous hawk, golden eagle, merlin, and tricolored blackbird. Special-status mammals that may occur in the project site include Yuma myotis, Townsend's big-eared bat, pallid bat, and American badger. Determinant surveys, conducted during the appropriate survey periods, will be required to ascertain the presence/absence of these species within the project site.

REFERENCES

- California Department of Fish and Game. 2003. Rarefind California Natural Diversity Database. Commercial Version 3.0.5. Dated January 4, 2006. Wildlife and Habitat Data Analysis Branch, Sacramento, CA.
- California Native Plant Society. 2001. Inventory of Rare and Endangered Plants of California (sixth edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society, Sacramento, CA. 388pp.
- ECORP Consulting, Inc. 2003. Rio Del Oro, Rancho Cordova, California - Rare Plant Survey. Letter Report Dated November 14, 2003.
- ECORP Consulting, Inc. 2003. Biological Assessment for Rio Del Oro, Sacramento County, California. Dated September 18, 2003.
- ECORP Consulting, Inc. 2004. Wetland Delineation for Rio Del Oro, Sacramento County, California. Dated December 9, 2004.
- Gibson and Skordal. 2000a. Listed Vernal Pool Branchiopods Wet Season Survey, Rio Del Oro Property, Sacramento County, California. Dated August 2000.
- Gibson and Skordal. 2000b. Elderberry Survey - Rio Del Oro Property, Sacramento County, California. Dated September 1, 2000.
- Gibson and Skordal. 2001. Listed Vernal Pool Branchiopods Wet Season Survey, Rio Del Oro Property, Sacramento County, California. Dated July 2001.
- Miriam Green Associates. 1999. Results of Surveys for Special-Status Wildlife Species at the Aerojet Property, Sacramento County, California. Dated April 8, 1999.
- U.S. Department of Agriculture, Soil Conservation Service. 1993. Soil Survey of Sacramento County, California. U.S. Department of Agriculture, Soil Conservation Service. Davis, California.
- U.S. Department of the Interior, Fish and Wildlife Service. 1999. Conservation Guidelines for the Valley Elderberry Longhorn Beetle. Dated July 9, 1999.
- U.S. Department of the Interior, Geological Survey. 1967 (photorevised 1980). "Buffalo Creek, CA" 7.5-minute Quadrangle. Geological Survey. Denver, Colorado.
- Stebbins, R. C. 2003. A Field Guide to the Western Reptiles and Amphibians. Third Edition. Houghton Mifflin Company, Boston, Massachusetts.
- Zeiner, D. C., W. F. Laudenslayer, Jr., and K. E. Mayer (eds). 1988. California's Wildlife, Volume I, Amphibian and Reptiles. California Statewide Habitat Relationships System, California Department of Fish and Game, Sacramento, CA.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White (eds). 1990a. California's Wildlife, Volume II, Birds. California Statewide Wildlife Habitat Relationships System. California Department of Fish and Game, Sacramento, CA.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White (eds). 1990b. California's Wildlife, Volume III, Mammals. California Statewide Wildlife Habitat Relationships System. California Department of Fish and Game, Sacramento, CA.