
Biological Resources Evaluation
for the
Pilgrim Quarry Project
Amador County, CA

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I. SUMMARY OF FINDINGS

The project study area (PSA) contains potential habitat for species listed under the federal and state endangered species acts (FESA & CESA) and the California Native Plant Protection Act (NPPA). Potential impacts to such species are considered for projects subject to the California Environmental Quality Act (CEQA) and may require incidental take permits if the species are present.

A total of approximately 360 ac of chaparral, oak woodlands, and grassland was surveyed in the PSA, which includes the land boundaries of the entire site for the proposed Pilgrim Quarry project. The actual footprint of the proposed quarry and associated access and work areas within the 360 ac area is approximately 140 acres.

The PSA contains potential habitat for other special-status species that are not listed under FESA, CESA, or the NPPA. Potential impacts to these species are also considered for projects subject to CEQA. Only one special-status wildlife species (white-tailed kite) was observed in the PSA, though potential exists for several other special-status bird species to occur on the site, and California tiger salamander or Western pond turtle could potentially enter the property from adjoining grassland areas to utilize seasonal ponds on the margin of the site. Three elderberry shrubs, which may provide habitat for the federal-threatened Valley elderberry longhorn beetle (VELB), were observed in widely separate locations on the site, though two appear to be outside of the proposed footprint of the mining project; a cursory examination of the trunks of these shrubs did not find any potential exit holes caused by VELB.

Two vernal pools were noted on the extreme southern edge of the property, well outside of the footprint of the proposed quarry. There is potential for special-status invertebrates and plants to occur in these pools. Ephemeral drainages occur on the property and many were wet at the time of the survey, though not flowing (it had not rained for several days). Flat spots in some of these drainages, particularly where crossed by dirt roads, had standing water and some wetland-related plant species, such as rushes, were present.

The PSA contains potential nesting habitat for birds-of-prey and migratory birds protected by state and federal law; red-tailed hawk, white-tailed kite, and turkey vulture were observed flying over or perched on the site, though no nests were observed.

II. INTRODUCTION

A. Purpose of Report

The purpose of this report is to document biological resources in the Pilgrim Quarry PSA, with the focus being on rare Ione plant species. This report may be used in support of permit applications and in the California Environmental Quality Act (CEQA) review process. Project impacts, including cumulative effects, and mitigation may be identified once project design has been finalized and is not part of this report.

B. Project Location

The Pilgrim Quarry project site is entirely within Amador County, about ½ mile east of the Sacramento County line. The site is accessed by vehicle from Highway 16 (Jackson Road) on the south side via Mariah Heights Road or Long Gate Road. The site consists of about nine forty-acre parcels, about 360 acres total, arranged in the shape of a 'T', with the northwest corner (main road access point) roughly at 38°28'15.31"N, 121°1'10.13"W.

C. Project Description

The applicant intends to develop approximately 140 acres of the site as a quarry. Project design has not been finalized. A site description has been provided by the developer's in other project documents.

III. STUDY METHODS

A. Studies Conducted

Studies included conducting a field survey, obtaining and analyzing data from state and federal agencies, and reviewing maps, aerial photographs, and published and unpublished literature. An evaluation of biological resources was conducted to determine if any special-status plant or wildlife species or their habitat occurs within the PSA. Special-status species are those listed under the federal or state endangered species acts, under the California Native Plant Protection Act, as a California species of special concern by the CDF&W, or that are on List 1 or 2 of the California Native Plant Society's Inventory of Rare and Endangered Plants of California.

Note, no wetland delineations were performed, though potential wetland areas and ephemeral drainages were noted. No collections or hands-on sampling was performed to detect wildlife and only animals observed during the course of botanical surveys were noted. No detailed mapping of resources was attempted and location drawings in this report showing significant resources are approximate (coordinates derived from on-site photo GPS data is shown in Section F).

B. Survey Dates and Personnel

Biological surveys were conducted by Roy Woodward on April 30 and May 1, 2019. Roy had previously surveyed the site in 2004 and has performed rare plant surveys on many other sites in Amador County, and is very familiar with the rare Ione plant species.

C. Problems Encountered and Limitations That May Influence Results

The timing of the survey was excellent for detection of the rare plant species and the previous high-rainfall winter resulted in lush germination and vegetation growth this spring. None of the special-status plants with the potential to occur in the PSA were observed during biological surveys and there is high-confidence they would have been observed if present. Weather was perfect during the surveys and access throughout the site by vehicle or on foot was good.

Seasonal ponds exist at the NW corner of the site and these have potential to contain California Tiger Salamander or Western Pond Turtle, though none were observed. A netting survey for salamander larvae or extended observations for turtles would be necessary to confirm presence/absence.

Three elderberry shrubs, potential habitat for the federally listed Valley elderberry longhorn beetle (VELB), were found, but only a cursory examination of the main stems was made to determine VELB presence of exit holes (none were found) and a focused study by VELB experts would be necessary to confirm presence/absence.

Two seasonal-wetland vernal pools were found on the extreme southern boundary of the site, far removed from the proposed quarry area. Though pool plant species were present, and some were blooming, the pools had no standing water at the time of the survey and no survey for active rare vernal pool invertebrates was possible.

No other problems or limitations were encountered that may have influenced the results.

D. Literature Search

Information on the biology, distribution, taxonomy, legal status, and other aspects of the special-status species was obtained from readily available online documents. Standard references used for the biology and taxonomy of plants and plant communities included Manual of California Vegetation (CSawyer and Keeler-Wolf (2009)) and flora was identified per The Jepson Manual (2012).

A search of the California Natural Diversity Database (CNDDDB/RareFind, Nov 2018 version) was conducted for the USGS 9 quads surrounding the Pilgrim Quarry site to determine known records of special-status species in, or in the vicinity of, the PSA.

California Department of Fish & Wildlife (email letter from CDFW Environmental Scientist Ian Boyd to Amador County, March 26, 2019) also provided information regarding past findings of endangered, threatened, and rare plants in the western Amador County area.

The species and habitats considered and the findings for each are contained in Table 1 and Table 2.

E. Field Survey Methods

Biological surveys consisted of walking through the PSA to assess potential habitat for special-status species and sensitive communities. Plant and animal species and vegetative communities were identified and recorded. Access was done using existing roads/trails and walking cross-country (note, this was very difficult through the chamise chaparral areas).

F. Mapping

A Google Earth aerial photo serves as the basis for mapping of biological resources in Figure 1. Coordinates of significant Biological Resources on the site:

Resource	Lat	Long
Elderberry 1 (outside quarry)	38°28'4.44° N	121°0'39.92" W
Elderberry 2 (outside quarry)	38°27'42.33° N	121°0'19.89" W
Elderberry 3 (inside quarry)	38°28'1.61° N	121°0'7.61" W
Vernal pools (outside quarry)	38°27'34.82° N	121°0'16.46" W

Seasonal ponds (probably outside quarry)	38°28'14.61° N	121°1'8.78" W
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Resources were mapped in the field using satellite imagery and in the office using GPS coordinates derived from onsite photos. The drawing in Figure 2 showing proposed extent of the Pilgrim Quarry was provided by Youngdahl Consulting Group (project engineers).

Figure 1. Significant biological resources of the Pilgrim Quarry site. Note, lesser vegetation types are labeled on the drawing, with the majority of the site dominated by dense chaparral (approx. 76% cover) being unlabeled. Compare with Figure 2 to determine the proposed area of the quarry.

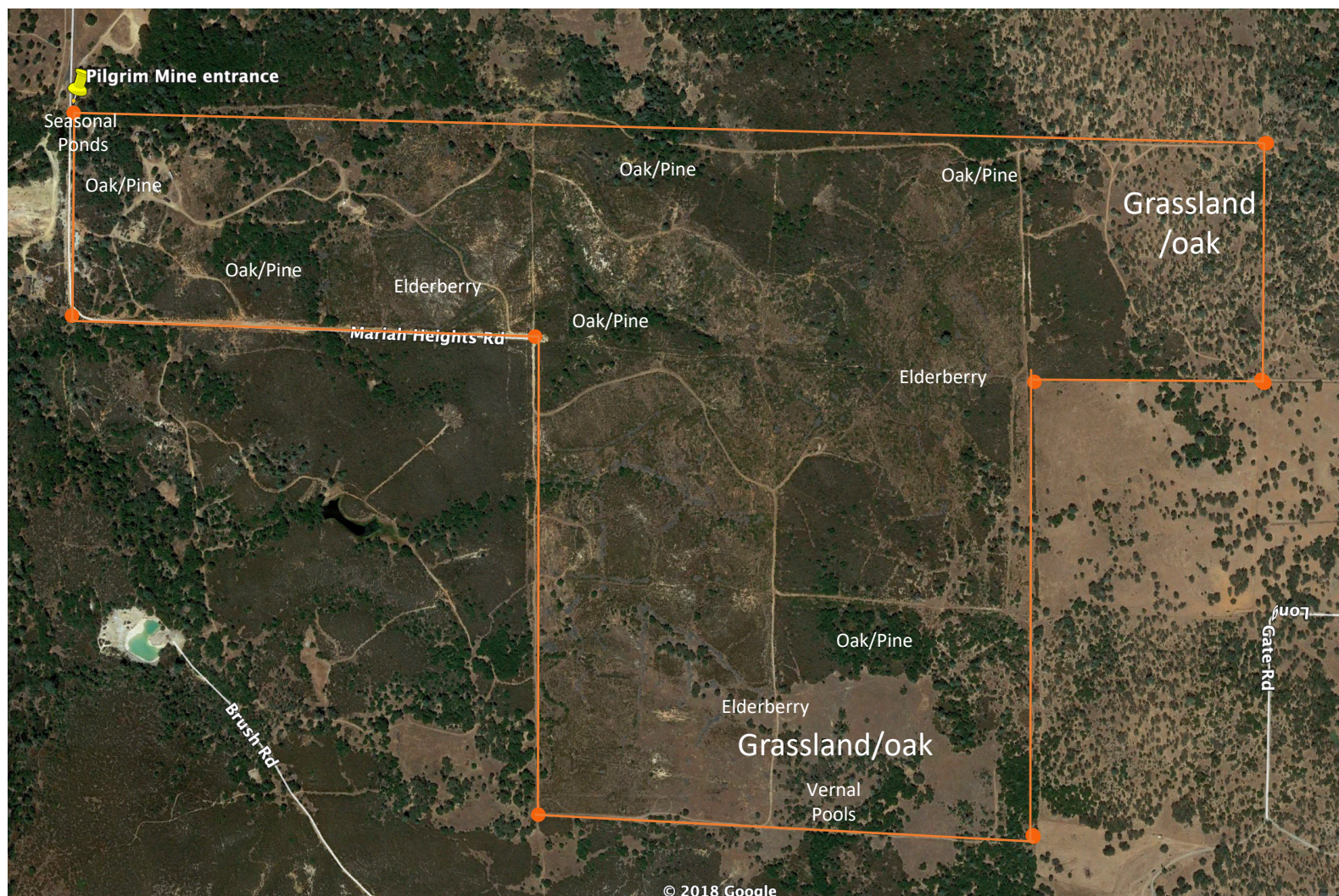
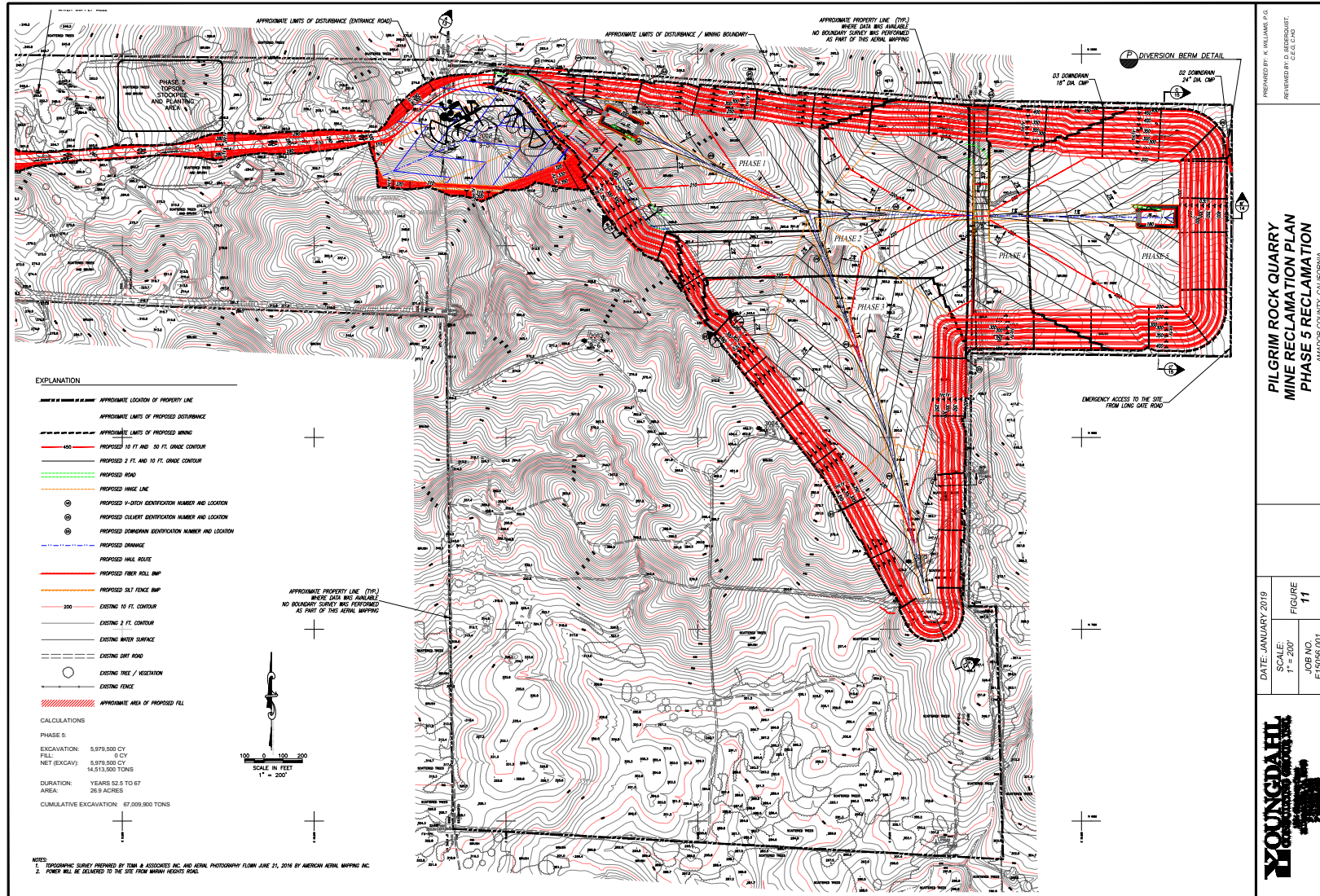


Figure 2. Proposed Pilgrim Quarry disturbance area shown within red boundaries.



IV. ENVIRONMENTAL SETTING

The PSA is in the western foothills of the Sierra Nevada and is characterized by low hills containing dense chaparral, oak woodland, and grassland. The elevation ranges from approximately 250 to 450 ft. The PSA is mostly surrounded by undeveloped land, though there are nearby houses on the western edge.

Biological Communities

Biological communities are defined by species composition and relative abundance. The biological communities described below correlate where applicable with the list of California terrestrial natural communities recognized by the California Natural Diversity Database. Biological community boundaries are not mapped in detail, but general locations are shown in Figure 1. A list of plant and wildlife species observed is in Table 2.

Table 1 lists biological community types or land condition and approximate acreages.

Table 1. Biological communities.

Community Type	TOTAL Acreage	Proposed Quarry Area
California Annual Grassland	10	0
Blue Oak – Grassland	40	20
Live Oak – Blue Oak – Foothill Pine	30	15
Chamise Chaparral	275	103
Vernal Pool	0.01	0
Bare/Road	5	2
Ponds, Ephemeral Channels, and Wet Spots	0.5	0.25
TOTAL:	360	140

Acreages estimated from aerial photos and field survey.

1. California Annual Grassland

Herbaceous species dominate this community. The most common species are nonnative annual grasses including a prevalence of soft brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis*), wild oat (*Avena* sp.), foxtail (*Hordeum marinum* ssp. *gussoneanum*), and Italian ryegrass (*Lolium multiflorum*). There was a noticeable amount of the native bunchgrass purple needlegrass (*Nassella pulchra*), (here and in the Blue/Oak Grass type) and, though cover is less than 1%, it was as great a density of this

native as I've seen anywhere in this part of the California foothills, perhaps owing to the recent wet winters. Native and nonnative annuals and perennials also occur at a lower abundance.

2. Blue Oak / Grass

Blue oak (*Quercus douglasii*) trees dominate this community, with a few interior live oak (*Quercus wislizenii* var. *wislizenii*), canyon live oak (*Quercus chrysolepis*), and foothill pine (*Pinus sabiniana*) as lesser elements (some of the foothill pines are >20" basal diameter). Some chaparral shrubs are present. The community has an understory of native and nonnative grasses and forbs similar to the California annual grassland. One large mature elderberry shrub (*Sambucus* sp.) occurs in this type on the far southern side of the property outside of the proposed quarry area (see Figs 1 and 2).

3. Live Oak – Blue Oak – Foothill Pine

This community is similar to the blue oak / grass community except live oaks and foothill pines occur commonly throughout the woodland. Some of these stands are quite dense and have a significant understory of chaparral shrubs.

4. Chamise Chaparral

This community is dominated by chamise (*Adenostoma fasciculatum*). Several other shrubs occur in a mosaic with the chamise, including whiteleaf manzanita (*Arctostaphylos visida* and *A. sp.*), toyon (*Heteromoles arbutifolia*), coyote brush (*Baccharis pilularis*), poison oak (*Toxicodendron diversilobum*), yerba santa (*Eriodictyon californicum*), Scotch broom (*Cytisus scoparius*), deer brush (*Ceanothus* sp.), deer weed (*Acmispon glaber*), and sticky/bush monkey-flower (*Diplacus aurantiacus*). The herb layer is sparse.

Two large mature elderberry shrubs (*Sambucus* sp.) were found blooming in this type, one in the proposed quarry area and one outside of the proposed quarry area (see Figs 1 and 2).

Also, one tree-of-heaven (*Ailanthus altissima*), about 10' tall and 2" basal diameter, was found growing by itself in the chaparral. This is an exotic shrub that is a serious invader in many areas in California; just something to keep an eye-on if the site is disturbed.

5. Vernal Pool

Two small vernal pools occur in the PSA. The vernal pools appear to pond water to a depth of less than 6 inches for at least several weeks during the wet season. Plant species that are present that are typical of northern hardpan vernal pool areas includes button-celery (*Eryngium* sp.), buttercup (*Ranunculus bonariensis*), common owl's clover (*Triphysaria eriantha*), goldfields (*Lasthenia* sp.), bractless hedgehyssop (*Gratiola ebracteata*), tidy-tips (*Layia* sp.), and popcorn flower (*Plagiobothrys* sp.).

The pools are associated with the Blue Oak – Grassland vegetation type and the area has been disturbed in the past by vehicles (but not this year). In less wet years these pools would be very marginal and probably more dominated by annual grassland species.

6. Bare/Road

This type is caused by human disturbance and extends throughout the site, though no large bare areas exist.

7. Ponds, Ephemeral Channels, and Wet Spots

No perennial streams or permanent ponds occur on or adjacent to the site.

At the entrance in the NW corner of the site are some small man-made seasonal ponds (some extend to neighboring property and some are off the property). Currently, these ponds are outside of the proposed quarry development.

These ponds were holding water at the time of the survey and in total covered an area of approximately a few thousand square feet, with a maximum depth of about a foot. They appear to dry completely during the summer, but probably hold water every wet season because of directed inflow. No cattails were present, but several species of *Juncus* and *Ranunculus*, along with other wetland plants were present. No aquatic vertebrates were observed, but I have seen similar ponds in the foothills being used in the spring by western pond turtles and California tiger salamander, and there are nearby annual grassland areas to the north, off the Pilgrim Quarry property, that could be salamander summer habitat.

There are many ephemeral drainages on the property. None of these were flowing at the time of the survey, but there was standing water in some flat areas along their courses, particularly at dirt road crossings. Plants species that indicated these wet areas include *Juncus* species and monkey-flower (*Mimulus guttatus*). Some of the small channels (most less than 1' across) had exposed rock and were somewhat defined, but most apparently only flow on a rare basis and no set channel is defined. Interestingly, none of the three elderberry shrubs observed on the site were associated with these drainages. In one location near a drainage, dominated by interior live oak and blue oak, about a dozen California buckeye (*Aesculus californica*) shrubs occur beside an intermittent channel. Some of these shrubs are over 10' tall and extend 10' across. California buckeye is not a riparian species and commonly grows on dry hillsides, and were not found elsewhere on the site, so perhaps these shrubs were introduced by humans in the past.

Along some of the drainages and road flat spots are seasonal puddles with plant species common to such areas, including centaury (*Centaurium muehlenbergii*), toad rush (*Juncus bufonius*), Baltic rush (*Juncus balticus*), Italian ryegrass (*Lolium multiflorum*), quaking grass (*Briza minor*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), dock (*Rumex pulcher*), and annual geranium (*Geranium* sp.). These spots are typically a few square feet in size, but a couple of areas dominated by *Juncus* were very damp at the time of the survey and cover low spots covering a couple of hundred square feet.

V. BIOLOGICAL RESOURCES IN THE PROJECT STUDY AREA

A. Determination of Special-Status Species in the Project Study Area

File data from USFWS, CNDDDB lists and RareFind records, California Native Plant Society (CNPS), and field surveys were used to determine the species that could occur in the PSA. Special-status species for which habitat is present in the PSA are listed in Table 2. Valley elderberry longhorn beetle is also included because elderberry shrubs occur in the PSA.

Table 2. Special-Status Species for which habitat may be present in the PSA.

Special-Status Species	Common Name	Federal Status	State Status	Habitat Present?/ Species Observed?
Invertebrates				
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	T	--	Yes/ No
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	T	--	Yes/ No
<i>Lepidurus packardii</i>	Vernal pool tadpole shrimp	E	--	Yes/ No
Amphibians				
<i>Ambystoma californiense</i> (Central Valley pop.)	California tiger salamander	T	T	
<i>Rana aurora draytonii</i>	California red-legged frog	T	CSC	Yes/ No
<i>Rana boylei</i>	Foothill yellow-legged frog	--	T	Yes/ No
Reptiles				
<i>Clemmys marmorata marmorata</i>	Northwestern pond turtle	--	CSC	Yes/ No
<i>Phrynosoma coronatum</i>	California horned lizard	--	CSC	Yes/ No
Birds				
<i>Accipiter cooperi</i>	Cooper's hawk	--	CSC	Yes/ No
<i>Amphispiza belli belli</i>	Bell's sage sparrow	--	CSC	Yes/ No
<i>Agelaius tricolor</i>	Tricolored blackbird		T	
<i>Aquila chrysaetos</i>	Golden eagle	--	CSC, FP	Yes/ No
<i>Asio flammeus</i>	Short-eared owl	--	CSC	Yes/ No
<i>Athene cunicularia</i>	Western burrowing owl	--	CSC	Yes/ No
<i>Buteo regalis</i>	Ferruginous hawk	--	CSC	Yes/ No
<i>Buteo swainsoni</i>	Swainson's hawk	--	T	Yes/ No
<i>Circus cyaneus</i>	Northern harrier	--	CSC	Yes/ No

Table 2. Continued.

Special-Status Species	Common Name	Federal Status	State Status	Habitat Present?/ Species Observed?
<i>Elanus leucurus</i>	White-tailed kite	--	Tracked in CNDDDB	Yes/ Yes
<i>Falco columbarius</i>	Merlin	--	CSC	Yes/ No
<i>Falco mexicanus</i>	Prairie falcon	--	CSC	Yes/ No
<i>Haliaeetus leucocephalus</i>	Bald eagle	delisted	E	Yes/ No
<i>Lanius ludovicianus</i>	Loggerhead shrike	--	CSC	Yes/ No
Birds of prey and migratory birds		--	--	Yes/ Yes
Mammals				
<i>Taxidea taxus</i>	American badger	--	CSC	Yes/ No
Plants / CNPS List				
<i>Arctostaphylos myrtifolia</i>	Ione manzanita	T	--/ 1B.2	Yes/ No
<i>Eriogonum apricum</i> var. <i>apricum</i>	Ione buckwheat	E	E/ 1B.1	Yes/ No
<i>Eriogonum apricum</i> var. <i>prostratum</i>	Irish Hill buckwheat	E	E/ 1B.1	Yes/ No
<i>Eryngium pinnatisectum</i>	Tuolumne button-celery	--	--/ 1B.2	Yes/ No
<i>Crocianthemum suffrutescens</i>	Bisbee Peak rush-rose	--	--/ 3.2	Yes/ No
<i>Horkelia parryi</i>	Parry's horkelia	--	--/ 1B.2	Yes/ No
<i>Legenere limosa</i>	Legenere	--	--/ 1B.1	Yes/ No
<i>Navarretia myersii</i> ssp. <i>myersii</i>	Pincushion navarretia	--	--/ 1B.1	Yes/ No
<i>Sphenopholis obtusata</i>	Prairie wedgegrass	--	--/ 2.2	Yes/ No
Sensitive Natural Communities				
Northern hardpan vernal pool		--	--	Yes/ Yes
Oak Woodland		--	--	Yes/ Yes

Listing Status: Codes used in table are:

E = Endangered; **T** = Threatened; **P** = Proposed; **C** = Candidate; **R** = California Rare; * = Possibly extinct; **CSC** = Species of Special Concern

CNPS List (plants only): **1A** = Presumed Extinct in CA; **1B** = Rare or Endangered (R/E) in CA and elsewhere; **2** = R/E in CA and more common elsewhere; **3** = Need more information; **4** = Plants of limited distribution; **0.1** = Seriously endangered in CA; **0.2** = Fairly endangered in CA; **0.3** = Not very endangered in CA.

B. Special-Status Species Not in the Project Study Area

The survey focused on finding rare habitats and species, particularly listed Ione species of manzanita, buckwheat, Bisbee rush rose, and Parry's horkelia because they are known to occur in the vicinity of the site. Ione manzanita occurs on a slope immediately to the south of the property (less than ½ mile) and is clearly visible from the site.

I've conducted many surveys for the rare Ione plants in this part of Amador County (and eastern Sacramento County) and Ione manzanita, Ione buckwheat, and Irish Hill buckwheat are not present on the Pilgrim Quarry site. I've observed these species invading disturbed areas, but only where the disturbance was immediately adjacent to an extant population or soil with a natural seed bank was moved to a nearby area. I've seen these species invade clay stockpiles placed in areas where they naturally grew, but only some piles and not others in close proximity. It's perplexing as to why they grow where they do, apparently some factor of soil chemistry and associated microbiota. I would not expect them to invade the Pilgrim Quarry area unless soil with seed from an existing population were brought there, and even then, they may not persist.

C. Evaluation of Special-Status Wildlife Species

1. Invertebrates

Valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*)

HABITAT AND BIOLOGY: This species requires an elderberry shrub (*Sambucus mexicana* or *Sambucus racemosa* var. *microbotrys*) as a host plant to complete its life cycle. Adults forage on leaves and larvae eat the inner stem tissues. Elderberry shrubs provide breeding and foraging habitat for this species. The VELB inhabits stems of elderberry shrubs greater than 1 inch in diameter at ground level. VELB habitat consists of riparian forests whose dominant species include cottonwood, sycamore, Valley oak, and willow, with an understory of elderberry shrubs. The beetle is most likely to occur where elderberry shrubs are not isolated from one another. The beetle does not appear to disperse widely from existing populations.

RANGE: Elderberry shrubs occur in Valley oak woodlands along the margins of rivers and streams from the upper Sacramento Valley to the central San Joaquin Valley. The beetle's range extends throughout the Central Valley and associated foothills from about the 3,000 ft level on the east and the watershed of the Central Valley on the west. VELB is known from 31 counties from Redding south to Bakersfield and from the western foothills of the Sierra Nevada to the eastern foothills of the Coast Range.

HABITAT PRESENT IN THE PSA: Three widely spaced mature elderberry shrubs were observed in the PSA.

DISCUSSION: It's unlikely VELB occurs on the Pilgrim Quarry site even though elderberry shrubs are present.

Vernal pool fairy shrimp (VPFS; *Branchinecta lynchi*) and vernal pool tadpole shrimp (VPTS; *Lepidurus packardii*)

HABITAT AND BIOLOGY: VPFS occur in grassy (occasionally mud-bottomed), swale, earth slump, or basalt-flow depression pools in unplowed grasslands. VPTS occur in a variety of vernal pool habitats.

RANGE: These species are found in the California Central Valley, coastal mountains, and foothills.

HABITAT PRESENT IN THE PSA: The two small pools in the southern area of the site are shallow and in dry years may not contain continually standing water during the winter.

DISCUSSION: The vernal pools may contain conditions suitable for the completion of the VPFS and VPTS life cycles. USFWS protocol surveys would need to be conducted to determine the presence

or absence of VPFS and VPTS for the purpose of consultation under the federal Endangered Species Act.

2. Amphibians

California red-legged frog (CRLF; *Rana aurora draytonii*)

HABITAT AND BIOLOGY: CRLF habitat combines both a specific aquatic and terrestrial component. The adults typically require dense, shrubby, or emergent riparian vegetation closely associated with deep (>0.7 m) still or slowly moving water. Deep-water pools with dense stands of overhanging willows intermixed with cattails support the highest densities of CRLF. Well-vegetated terrestrial areas within a riparian corridor may provide important sheltering habitat during the winter. CRLF spend considerable time resting and feeding in riparian vegetation when it is present.

CRLF require water to breed. Female CRLF deposit egg masses on emergent vegetation so that the masses float on the surface of the water. Breeding habitats for CRLF vary from deep still or slow-moving water with dense riparian or emergent vegetation to shallow sections of streams that are not covered with riparian vegetation. While CRLF successfully breed in streams, high flows and cold temperatures in streams during the spring often make these sites risky environments for eggs and tadpoles. Stock ponds that have vegetative cover and few nonnative predators may be used by CRLF for breeding. CRLF do not occupy water that exceeds temperatures of 70° F.

During summer, CRLF often disperse upstream or downstream from their breeding habitat to forage or seek aestivation habitat if water is not available. Aestivation habitat is essential for the survival of CRLF within a watershed. During dry periods, CRLF are rarely encountered far from water. Summer habitat could include spaces under boulders or rocks and organic debris, such as downed trees or logs; or industrial debris, such as drains and watering troughs. CRLF use small mammal burrows and moist leaf litter to aestivate during the summer if water is not available. CRLF use large cracks in the bottom of dried ponds as refugia. CRLF are frequently encountered in open grasslands occupying seeps and springs. Such bodies may not be suitable for breeding but may function as foraging habitat or refugia for frogs.

RANGE: CRLF are endemic to CA and Baja California, Mexico. The known elevation range extends from near sea level to elevations of about 5,200 ft. Nearly all sightings have occurred below 3,500 ft. CRLF historically occurred through Pacific slope drainages from the vicinity of Redding (Shasta Co.) inland, west to Point Reyes (Marin Co., CA), and southward to the Santo Domingo River drainage in Baja California and Mexico. CRLF are now known only from isolated localities in the Sierra Nevada and occurs in the north Bay counties of Marin and Sonoma (not further north where NRLF occurs) and in the smaller drainages of the central Coast Ranges.

HABITAT PRESENT IN THE PSA: There is no RLF habitat on the project site.

DISCUSSION: There is no RLF habitat on the project site.

Foothill yellow-legged frog (FYLF; *Rana boylei*)

HABITAT AND BIOLOGY: This species occurs in woodland and forest areas near streams and rivers, especially near riffles where there are rocks. This species requires permanent streams in which to reside.

RANGE: This species was once known from most Pacific drainages from the Santiam River system (Marion County, OR) to the San Gabriel River system (Los Angeles County, CA). FYLF has not been observed south of the Transverse Ranges since 1970.

HABITAT PRESENT IN THE PSA: There is no RLF habitat on the project site.

DISCUSSION: There is no RLF habitat on the project site.

3. Reptiles

Northwestern pond turtle (NWPT; *Clemmys marmorata marmorata*)

HABITAT AND BIOLOGY: NWPT prefers aquatic habitats with abundant vegetative cover and exposed basking sites such as logs. Their color may appear olive, dark brown or black with darker spots or dashes. Western pond turtles may live 30-40 years and attain a shell length of seven inches. Mating occurs in April or May, after which females build nests along wetland margins or in adjacent uplands. The female will travel over 400 meters to find suitable nest sites in upland areas with southern exposure away from flood-prone areas. In late spring, one to 13 eggs are laid in a shallow hole at least 10 cm deep and covered with organic, silty soil. Hatchlings emerge in approximately 12 weeks. They are associated with permanent or nearly permanent water in a wide variety of habitat types, normally in ponds, lakes, streams, irrigation ditches, or permanent pools along intermittent streams. They are omnivorous generalists and opportunistic predators whose prey includes small insects, aquatic invertebrates, fish, frogs, snakes, and small mammals. They also eat aquatic plant material.

RANGE: NWPT occur throughout northern CA west of the Sierra Nevada.

HABITAT PRESENT IN THE PSA: The small seasonal ponds near the Pilgrim Quarry site entrance may be used by NWPT during the spring when the ponds contain water.

DISCUSSION: A detailed survey would be needed to determine presence/absence.

California horned lizard (*Phrynosoma coronatum frontale*)

HABITAT AND BIOLOGY: California horned lizard prefers loose or sandy soil in a variety of habitats including scattered shrubs, clearings in riparian woodlands, dry uniform chamise chaparral, and annual grassland with perennial seepweed (*Suaeda* spp.) or saltbush (*Atriplex* spp.). Historically this species was most abundant in relict lake sand dunes and old alluvial fans bordering the San Joaquin Valley.

RANGE: California horned lizard historically ranged from Shasta to Los Angeles cos. in the Central Valley and portions of the Coast Ranges and Sierra Nevada foothills. The known elevation range is from near sea level to 6,500 ft.

HABITAT PRESENT IN THE PSA: There is no habitat on the project site for this species.

DISCUSSION: There is no habitat on the project site for this species

4. Birds

Cooper's hawk (*Accipiter cooperi*)

HABITAT AND BIOLOGY: Prefers dense stands of live oak, riparian deciduous, or other forest habitats near water. Nests in second-growth conifer stands or deciduous riparian areas, usually near streams. Nests are placed in deciduous trees in crotches 10-80 ft above the ground. Feeds on small birds, especially young during nesting season and small mammals; also takes reptiles and

amphibians; catches prey in air, on ground, and in vegetation. Nesting sites are of concern to CF&W.

RANGE: Breeding resident throughout most of the wooded portion of CA.

HABITAT PRESENT IN THE PSA: There is little, if any, habitat on the project site for this species

DISCUSSION: There is little, if any, habitat on the project site for this species.

Bell's sage sparrow (*Amphispiza belli belli*)

HABITAT AND BIOLOGY: Frequents chaparral dominated by chamise and coastal scrub dominated by sage. Seeks cover in fairly dense stands in chaparral and scrub habitats during the breeding season; uses more arid, open shrub habitats in winter. Nests either on the ground beneath a shrub or in a shrub (usually 6 to 18 inches above the ground). Breeds in fairly dense chaparral and forages on the ground beneath and between shrubs. Winter habitat is similar in structure to breeding habitat, but may be more open.

RANGE: Bell's sage sparrow adheres closely to chamisal (*Adenosotoma fasciculatum*) associations and occurs within two disjunct ranges: (1) inner Coast Ranges from Shasta County southward, extending to the vicinity of the coast from Marin County south to San Diego County; and (2) western foothills of the Sierra Nevada from Placer County south to at least Mariposa County. The subspecies is resident within much of its range, but the northernmost CA populations are reported to be migratory.

HABITAT PRESENT IN THE PSA: The chamise chaparral provides potential habitat for Bell's sage sparrow.

DISCUSSION: Bell's sage sparrow was not observed in the PSA, but may occur within the chamise chaparral biological community.

Tri-colored Blackbird (*Agelaius tricolor*)

HABITAT AND BIOLOGY: Largely endemic to California it closely resembles the more familiar red-winged blackbird. It nests in colonies, sometimes consisting of tens-of-thousands of birds, located often in wetland areas dominated by large cattail or reeds or in agricultural fields with tall grasses (e.g., barley). Destruction of nest colony locations has led to significant declines in the population of this bird. It's a bird of open areas and generally never to far from water. Colonies often feed in the same location and colonies can often be found by observing long relatively narrow streams of birds flying to/from feeding and nesting areas.

RANGE: Uncommon permanent resident throughout central California and is known to nest a few miles from the PSA in the Sloughouse area.

HABITAT PRESENT IN THE PSA: The PSA has no habitat for the tri-colored blackbird.

DISCUSSION: The PSA has no habitat for the tri-colored blackbird.

Golden eagle (*Aquila chrysaetos*)

HABITAT AND BIOLOGY: Typically inhabits rolling foothills, mountain areas, sage-juniper flats, and deserts. Uses secluded cliffs with overhanging ledges and large trees for cover. Nests on cliffs of all heights and in large trees in open areas. Rugged, open habitats with canyons and escarpments are used most frequently for nesting. Needs open terrain for hunting. Wintering sites are of concern to CDF&W.

RANGE: Uncommon permanent resident and migrant throughout California, except the center of the Central Valley. Perhaps more common in southern California than in the north. Ranges from sea level up to 11,500 ft.

HABITAT PRESENT IN THE PSA: The PSA provides potential wintering habitat for golden eagle.

DISCUSSION: Golden eagle was not observed, but may occur in the PSA.

Short-eared owl (*Asio flammeus*)

HABITAT AND BIOLOGY: This species inhabits open areas with elevated sites for perches in annual and perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and freshwater emergent wetlands. Requires dense vegetation; tall grasses, brush, ditches, and wetlands for resting and roosting cover. Nests on dry ground in topographic depressions concealed in vegetation and occasionally nests in a burrow. Nesting sites are of concern to CDF&W.

RANGE: A widespread winter migrant, found primarily in the Central Valley, in the western Sierra Nevada foothills, and locally in the southern desert region. An uncommon winter migrant in southern California, including the Channel Islands. Occasionally breeds in northern CA.

HABITAT PRESENT IN THE PSA: The PSA provides potential nesting habitat for short-eared owl.

DISCUSSION: Short-eared owl was not observed, but may occur in the PSA.

Western Burrowing owl (*Athene cunicularia*)

HABITAT AND BIOLOGY: Western burrowing owl forages day and night in open dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats. This species nests in old burrows of ground squirrels or other small mammals and eats mostly insects, but is also known to feed on small mammals, reptiles, birds, and carrion. Western burrowing owl is a yearlong resident in CA and breeds from 1 February to 31 August. Burrow sites are of concern to CDF&W.

RANGE: Central Valley, Sierra Nevada, and coastal ranges.

HABITAT PRESENT IN THE PSA: The California annual grassland provides potential nesting habitat for burrowing owl.

DISCUSSION: No burrowing owls or areas with suitable burrows were found in the PSA.

Ferruginous hawk (*Buteo regalis*)

HABITAT AND BIOLOGY: Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. Requires large, open tracts of grasslands, sparse shrub, or desert habitats with elevated structures for nesting. Nests in foothills or prairies, on low cliffs, buttes, cut banks, shrubs, trees or in other elevated structures, natural or human-made. Wintering sites are of concern to CDF&W.

RANGE: A winter resident of the Modoc Plateau, Central Valley, and Coast Ranges. Fairly common winter resident of grasslands and agricultural areas in southwestern California. This species is not known to breed in central California.

HABITAT PRESENT IN THE PSA: The PSA provides potential wintering habitat for ferruginous hawk.

DISCUSSION: Ferruginous hawk was not observed, but may occur in the PSA.

Swainson's hawk (*Buteo swainsoni*)

HABITAT AND BIOLOGY: An uncommon breeding resident and migrant in CA in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Forages in grasslands or suitable grain fields, alfalfa fields, or pastures. Feeds on small birds, rodents, mammals, reptiles, large arthropods, amphibians, and, rarely, fish. Nests in open riparian habitat, in scattered trees or in small groves in sparsely vegetated flatlands. Nesting areas are usually located near water, but are occasionally found in arid regions. Typical habitat includes open desert, grassland, or cropland containing scattered, large trees or small groves. It breeds from late March to late October.

RANGE: The summer range of this species is the California Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. California populations of this species are believed to overwinter in Mexico.

HABITAT PRESENT IN THE PSA: The California annual grassland provides potential foraging habitat for this species.

DISCUSSION: Swainson's hawk was not observed, but may occur in the PSA. In and near the California Central Valley, Swainson's hawk is typically associated with irrigated agricultural fields, which are not present on the survey site.

Northern harrier (*Circus cyaneus*)

HABITAT AND BIOLOGY: Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded areas. Uses tall grasses and forbs in wetland, or at wetland/ field border for cover. Nests on the ground in shrubby vegetation, usually at marsh edge. Mostly nests in emergent wetlands or along rivers and lakes, but may nest in grasslands, grain fields, or on sagebrush flats several miles from water. Nesting sites are of concern to CDF&W.

RANGE: Occurs from annual grassland up to lodgepole pine and alpine meadow habitats as high as 10,000 ft. Breeds from sea level to 5,700 ft in the Central Valley and Sierra Nevada, and up to 3,600 ft in northeastern California. Permanent resident of the northeastern plateau and coastal areas; less common resident of the Central Valley. Widespread winter resident and migrant in suitable habitat.

HABITAT PRESENT IN THE PSA: The California annual grassland provides potential nesting and foraging habitat for northern harrier.

DISCUSSION: Northern harrier was not observed in the PSA and habitat is quite limited.

White-tailed kite (*Elanus leucurus*)

HABITAT AND BIOLOGY: This species feeds on small diurnal mammals, birds, insects, reptiles, and amphibians in open grasslands, wetlands, and farmlands. This species builds nests in trees near foraging areas. Nests are usually constructed 20-100 ft above the ground. It is a year-round resident of CA. It breeds from February to October. Nesting sites are of concern to CDF&W.

RANGE: Most open habitats in coastal and valley lowlands in California.

HABITAT PRESENT IN THE PSA: The PSA provides potential nesting and foraging habitat for white-tailed kite.

DISCUSSION: White-tailed kite was observed in the PSA during the field survey. A single bird perched on a large, dead foothill pine close to a turkey vulture. No evidence of raptors nests of any kind were found during the field survey.

California horned lark (*Eremophila alpestris actia*)

HABITAT AND BIOLOGY: A common to abundant resident in a variety of open habitats. Ground nester that occurs usually where trees and large shrubs are absent. Frequents grasslands and other open habitats with low, sparse vegetation.

RANGE: Found in grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above tree line. Less common in mountain regions, on the North Coast and in coniferous or chaparral habitats.

HABITAT PRESENT IN THE PSA: The California annual grassland provides potential habitat for California horned lark.

DISCUSSION: California horned lark was not observed, but may occur in the PSA.

Merlin (*Falco columbarius*)

HABITAT AND BIOLOGY: Uncommon winter migrant from September to May. Seldom found in heavily wooded areas or open deserts. Frequents coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges, and early successional stages. Ranges from annual grasslands to ponderosa pine and montane hardwood-conifer habitats. Dense tree stands close to bodies of water are needed for cover. Does not breed in California. Wintering sites are of concern to CDF&W.

RANGE: Occurs in most of the western half of the state below 3,900 ft.

HABITAT PRESENT IN THE PSA: The PSA provides potential wintering habitat for merlin.

DISCUSSION: Merlin was not observed, but may occur in the PSA.

Prairie Falcon (*Falco mexicanus*)

HABITAT AND BIOLOGY: Prairie falcon usually nests in a scrape on a sheltered ledge of a cliff overlooking a large, open area. Southeast-facing nest sites are apparently preferred. They sometimes nest on old raven or eagle stick nests on a cliff, bluff, or rock outcrop. Prairie falcon require sheltered cliff ledges for cover. Prairie falcon are distributed from annual grasslands to alpine meadows, but are associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas. Prairie falcon forage in open grasslands and eat mostly small mammals, some small birds, and reptiles. The breeding season is from mid-February through mid-September, and peaks in April to early August.

RANGE: Uncommon permanent resident and migrant that ranges from southeastern deserts northwest along the inner Coast Ranges and Sierra Nevada. Not found in northern coastal fog belt, or along the coastline.

HABITAT PRESENT IN THE PSA: The PSA provides potential nesting and foraging habitat for prairie falcon.

DISCUSSION: Prairie falcon was not observed in the PSA.

Bald eagle (*Haliaeetus leucocephalus*)

HABITAT AND BIOLOGY: Occurs along coasts, rivers, and large, deep lakes and reservoirs inland. Requires large, stoutly limbed trees, snags, broken topped trees, or high rock ledges for perches.

RANGE: Permanent resident, and uncommon winter migrant, now restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity counties.

HABITAT PRESENT IN THE PSA: There is no habitat on the project site for this species.

DISCUSSION: There is no habitat on the project site for this species.

Loggerhead shrike (*Lanius ludovicianus*)

HABITAT AND BIOLOGY: Loggerhead shrike is a resident in lowlands and foothills. This species prefers open grasslands or scrub with shrubs or trees and low, sparse herbaceous cover with perches available (fences, posts, utility lines). Nests in a densely-foliaged shrub or tree. Critical nesting season in CA is from March into August. Feeds mostly on insects; also takes birds, mammals, fish, reptiles, amphibians, carrion, and small invertebrates. Nesting sites are of concern to CDF&W.

RANGE: Loggerhead shrike is widespread throughout California except at higher elevations and is rarely found in the Coast Ranges north of Mendocino.

HABITAT PRESENT IN THE PSA: The oak woodlands in the PSA contain potential nesting habitat for loggerhead shrike.

DISCUSSION: Loggerhead shrike was not observed, but may occur in the PSA.

Birds-of-prey and migratory birds

HABITAT PRESENT IN THE PSA: The PSA provides habitat for birds-of-prey and migratory birds.

DISCUSSION: Fish and Game Code 3503.5 protects all birds in the orders Falconiformes and Strigiformes (collectively known as birds-of-prey). Migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any bird listed in 50 CFR Part 10 including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21).

5. Mammals

American badger (*Taxidea taxus*)

HABITAT AND BIOLOGY: American badgers are most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. They feed on fossorial rodents and some reptiles, insects, earthworms, bird eggs, and carrion. Badgers dig burrows in friable soil for cover and frequently reuse old burrows. Badgers are highly specialized fossorial mammals that are somewhat tolerant of human activities.

RANGE: Uncommon permanent resident found throughout most of the state, except in the North Coast area.

HABITAT PRESENT IN THE PSA: The PSA provides potential habitat for American badger.

DISCUSSION: No American badgers and no dens were observed, but American badger could occur in the PSA.

6. Plants

Ione Manzanita (*Arctostaphylos myrtifolia*)

HABITAT AND BIOLOGY: Perennial shrub endemic to lateritic soils in the Ione area of Amador County. Often grows in nearly pure stands with few other accompanying shrubs.

RANGE: Amador and Calaveras Counties. Its small stature and leaf size make it distinctive among manzanitas in this area.

HABITAT PRESENT IN THE PSA: The areas with chaparral soils appear to provide biological habitat for this species.

DISCUSSION: No Ione Manzanita was discovered on the project site, though it does occur within a ½ mile to the south. There is no evidence the species has been extirpated in this area as the chaparral areas are dominated by other native shrubs.

Ione buckwheat (*Eriogonum apricum* var. *apricum*) and Irish Hill buckwheat (*Eriogonum apricum* var. *prostratum*)

HABITAT AND BIOLOGY: Perennial sub-shrub endemic to lateritic soils in the Ione area of Amador County. Grows in very select areas, often in pure stands and not overtopped by any other shrub. The two varieties do not naturally occur together in the same stands.

RANGE: Amador County. Both types of buckwheat have a distinctive appearance and would be confused with any other species to anyone familiar with the species.

HABITAT PRESENT IN THE PSA: The areas with chaparral soils appear to provide biological habitat for this species.

DISCUSSION: Neither buckwheat variety was discovered on the project site, though they do occur within a mile or so to the south. There is no evidence the species has been extirpated in this area as the chaparral areas are dominated by other native shrubs.

Tuolumne button-celery (*Eryngium pinnatisectum*)

HABITAT AND BIOLOGY: Annual to perennial herb found in mesic cismontane woodland, lower montane coniferous forest, and vernal pools from 230 to 3,000 ft in elevation. Blooms June through August.

RANGE: Known from Amador, Calaveras, Sacramento, and Tuolumne counties.

HABITAT PRESENT IN THE PSA: The vernal pools could provide potential habitat for Tuolumne button-celery.

DISCUSSION: Tuolumne button-celery was not observed in the PSA. Focused botanical surveys during the evident and identifiable period could determine the presence or absence of Tuolumne button-celery.

Bisbee Peak rush-rose (*Crocانthemum suffrutescens*)

HABITAT AND BIOLOGY: Evergreen shrub found in chaparral from 150 to 2,750 ft in elevation. Often found on serpentine, gabbro or Ione soils. Blooms April through June. It is usually found on the fringes of vegetation stands and does not like to be overtopped. In some places it's fairly common along dirt roads and is easily identifiable from other chaparral shrubs, especially when in bloom.

RANGE: Known from Amador, Calaveras, El Dorado, Sacramento, and Tuolumne counties.

HABITAT PRESENT IN THE PSA: The chamise chaparral biological community provides potential habitat for Bisbee Peak rush-rose.

DISCUSSION: Bisbee Peak rush-rose was not observed in the PSA.

Parry's horkelia (*Horkelia parryi*)

HABITAT AND BIOLOGY: Perennial herb found in cismontane woodland especially in Ione formation and chaparral from 260 to 3,400 ft in elevation. Blooms April through June and uncommonly through September. It is distinctive among chaparral plants, fairly evident when it is present in an area, and would not be confused with any other species to anyone knowledgeable with the species.

RANGE: Known from Amador, Calaveras, El Dorado, and Mariposa counties.

HABITAT PRESENT IN THE PSA: The chamise chaparral biological community provides potential habitat for Parry's horkelia.

DISCUSSION: Parry's horkelia was not observed in the PSA.

Legenere (*Legenere limosa*)

HABITAT AND BIOLOGY: Annual herb found in vernal pools from 3 to 2,900 ft in elevation. Blooms April through June. Very small (some less than 1" long) and difficult to find (a belly plant) as it often grows vine-like and is always mixed with other low-growing vernal pool species.

RANGE: Known from the Central Valley and Coast ranges and would be restricted to the vernal pools on the Pilgrim Quarry site.

DISCUSSION: Legenere was not observed in the PSA. Focused botanical surveys during the evident and identifiable period could determine the presence or absence of legenere.

Pincushion navarretia (*Navarretia myersii* ssp. *myersii*)

HABITAT AND BIOLOGY: Annual herb found in vernal pools from 65 to 1,100 ft in elevation. Blooms in May. Fairly distinctive when in bloom, often forming large stands.

RANGE: Known from Amador, Calaveras, Merced, Placer, and Sacramento counties.

HABITAT PRESENT IN THE PSA: The vernal pools could provide potential habitat for pincushion navarretia.

DISCUSSION: Pincushion navarretia was not observed in the PSA. Focused botanical surveys during the evident and identifiable period could determine the presence or absence of pincushion navarretia.

Prairie wedgegrass (*Sphenopholis obtusata*)

HABITAT AND BIOLOGY: Perennial herb found in mesic cismontane woodland, meadows, and seeps from 980 to 6,600 ft in elevation. Blooms April through July.

RANGE: Known from Amador, Fresno, Inyo, Mono, Riverside, San Bernardino, Tulare counties and outside CA.

HABITAT PRESENT IN THE PSA: The seasonally wet swales and vernal pools could provide potential habitat for prairie wedgegrass.

DISCUSSION: Prairie wedgegrass was not observed in the PSA. Focused botanical surveys during the evident and identifiable period could determine the presence or absence of prairie wedgegrass.

VI. PREPARERS

The field survey was conducted, and this report prepared by, Roy Woodward. Roy has a Ph.D. in Botany from the University of California, Davis, and is retired from state service (working for the (names of agency when he worked there) California Department of Parks and Recreation, California Department of Forestry and Fire Protection, and California Department of Fish & Game). He has conducted many botanical and wildlife surveys throughout California, including over 10 years of surveys and monitoring in western Amador County. He was a contractor with the U.S. Fish & Wildlife Service to prepare the first DRAFT Recovery Plan for rare Ione plant species. He currently resides in Rigby, Idaho, and works as a private environmental consultant.

APPENDIX A.

Plant and Wildlife Species Observed

Pilgrim Quarry
 Amador County, CA

Plant Species Observed.

Family	Scientific Name	Common Name
FERNS & ALLIES		
Selaginellaceae	<i>Selaginella hansenii</i>	Spike-moss
CONIFERS		
Pinaceae	<i>Pinus sabiniana</i>	Foothill pine
DICOTS		
Adoxaceae	<i>Sambucus</i> sp.	Elderberry
Anacardiaceae	<i>Toxicodendron diversilobum</i>	Western poison oak
Apiaceae	<i>Conium maculatum</i>	Hemlock
	<i>Daucus</i> sp.	Wild carrot
	<i>Eryngium vaseyi</i>	Coyote thistle
	<i>Sanicula bipinnata</i>	Sanicle
	<i>Sanicula bipinnatifida</i>	Purple sanicle
	<i>Torilis arvensis</i>	Spreading hedgeparsley
Asclepiadaceae	<i>Asclepias fascicularis</i>	Narrow-leaf milkweed
Asparagaceae	<i>Chlorogalum angustifolium</i>	Soap plant
Asteraceae	<i>Achillea millefolium</i>	Yarrow
	<i>Agoseris heterophylla</i>	Annual agoseris
	<i>Ambrosia</i> sp.	Ragweed
	<i>Baccharis pilularis</i>	Coyote brush
	<i>Carduus pycnocephalus</i>	Italian thistle
	<i>Cirsium</i> sp.	Thistle
	<i>Gnaphalium</i>	Cudweed
	<i>Hypochaeris glabra</i>	Smooth cat's ear
	<i>Lactuca serriola</i>	Prickly lettuce
	<i>Madia</i> sp.	Tarweed
	<i>Sonchus oleraceus</i>	Sow thistle
	<i>Taraxacum officinale</i>	Dandelion
	<i>Xanthium strumarium</i>	Cocklebur
Boraginaceae	<i>Amsinckia</i> sp.	Fiddleneck
	<i>Eriodictyon californicum</i>	Yerba santa
	<i>Plagiobothrys</i> sp.	Popcornflower
Brassicaceae	<i>Cardamine oligosperma</i>	Bitter cress
	<i>Sisymbrium officinale</i>	Hedge mustard
Caryophyllaceae	<i>Cerastium glomeratum</i>	Mouse-ear chickweed
	<i>Stellaria media</i>	Common chickweed
Cucurbitaceae	<i>Marah</i> sp.	Wild cucumber
Ericaceae	<i>Arctostaphylos viscida</i> ssp. <i>viscida</i>	Manzanita
Euphorbiaceae	<i>Chamaesyce</i> sp.	Prostrate spurge
	<i>Eremocarpus setigerus</i>	Dove weed; Turkey mullein
Fabaceae	<i>Acmispon glaber</i>	Deerweed

	<i>Cytisus scoparius</i>	Scotch broom
	<i>Lotus micranthus</i>	Deervetch
	<i>Lotus purshianus</i>	Deervetch
	<i>Lupinus</i> sp.	Lupine
	<i>Medicago</i> sp.	Burclover
	<i>Melilotus</i> sp.	Sweet clover
	<i>Trifolium dubium</i>	Little hop clover
	<i>Trifolium hirtum</i>	Rose clover
	<i>Trifolium subterraneum</i>	Subterranean clover
	<i>Vicia</i> sp.	Vetch
Fagaceae	<i>Quercus douglasii</i>	Blue oak
	<i>Quercus chryrolepis</i>	Canyon live oak
	<i>Quercus wislizenii</i> var. <i>wislizenii</i>	Interior live oak
Gentianaceae	<i>Centaurium muehlenbergii</i>	Centaury
Geraniaceae	<i>Erodium botrys</i>	Filaree
	<i>Erodium cicutarium</i>	Filaree
	<i>Geranium dissectum</i>	Cranesbill
	<i>Geranium molle</i>	Cranesbill
Hippocastanaceae	<i>Aesculus californica</i>	California buckeye
Hydrophyllaceae	<i>Nemophila pedunculata</i>	Baby blue eyes
Hypericaceae	<i>Hypericum anagalloides</i>	Tinker's penny
	<i>Hypericum perforatum</i>	Klamathweed
Lamiaceae	<i>Mentha pulegium</i>	Pennyroyal
	<i>Stachys</i> sp.	Hedge nettle
Linaceae	<i>Linum</i> sp.	Blue flax
Onagraceae	<i>Clarkia</i> sp.	Clarkia
Plantaginaceae	<i>Gratiola ebracteata</i>	hedgelyssop
	<i>Plantago lanceolata</i>	English plantain
Polygonaceae	<i>Polygonum californicum</i>	Knotweed
	<i>Polygonum</i> sp.	Knotweed
	<i>Rumex conglomeratus</i>	Dock
	<i>Rumex crispus</i>	Curly dock
	<i>Rumex pulcher</i>	Fiddle dock
Portulacaceae	<i>Claytonia perfoliata</i> ssp. <i>perfoliata</i>	Miner's lettuce
Primulaceae	<i>Anagallis arvensis</i>	Scarlet pimpernel
Ranunculaceae	<i>Aconitum columbianum</i>	Western monkshood
	<i>Ranunculus bonariensis</i> var. <i>trisepalus</i>	Buttercup
	<i>Ranunculus californicus</i>	Buttercup
	<i>Ranunculus muricatus</i>	Buttercup
Rhamnaceae	<i>Ceanothus cuneatus</i> var. <i>cuneatus</i>	Buck brush
	<i>Ceanothus</i> sp.	California lilac
Rosaceae	<i>Adenostoma fasciculatum</i>	Chamise
	<i>Heteromeles arbutifolia</i>	Toyon
Rubiaceae	<i>Galium aparine</i>	Goose grass
Saxifragaceae	<i>Saxifraga californica</i>	Saxifrage
Scrophulariaceae	<i>Diplacus aurantiacus</i>	Bush monkey-flower
	<i>Mimulus guttatus</i>	Yellow monkey-flower
	<i>Triphysaria eriantha</i> ssp. <i>eriantha</i>	Butter-and-eggs
Simaroubaceae	<i>Ailanthus altissima</i>	Tree-of-heaven
Viscaceae	<i>Phoradendron villosum</i>	Oak mistletoe

MONOCOTS		
Cyperaceae	<i>Cyperus eragrostis</i>	Nutsedge
	<i>Cyperus</i> sp.	Nutsedge
Iridaceae	<i>Sisyrinchium</i> sp.	Blue-eyed grass
Juncaceae	<i>Juncus</i> sp.	Rush
	<i>Juncus bufonius</i>	Toad rush
Liliaceae	<i>Calochortus</i> sp.	Mariposa lily
	<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	Blue dicks
	<i>Triteleia</i> sp.	Triplet lily
Poaceae	<i>Andropogon virginicus</i> var. <i>virginicus</i>	Broomsedge bluestem
	<i>Aristida oligantha</i>	Oldfield three-awn
	<i>Avena</i> sp.	Wild oats
	<i>Briza minor</i>	Quaking grass
	<i>Bromus diandrus</i>	Ripgut brome
	<i>Bromus hordeaceus</i>	Soft brome
	<i>Bromus madritensis</i>	Red brome
	<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley
	<i>Lolium multiflorum</i>	Italian ryegrass
	<i>Melica torreyana</i>	Melic
	<i>Muhlenbergia rigens</i>	Deergrass
	<i>Nassella pulchra</i>	Purple needlegrass
	<i>Poa annua</i>	Annual bluegrass

Wildlife Species Observed.

Common Name	Scientific Name
BIRDS	
Acorn woodpecker (acorn granary)	<i>Melanerpes formicivorus</i>
Anna's hummingbird	<i>Calypte anna</i>
Black phoebe	<i>Sayornis nigricans</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
California quail	<i>Callipepla californica</i>
Common raven	<i>Corvus corax</i>
Dark-eyed junco	<i>Junco hyemalis</i>
European starling	<i>Sturnus vulgaris</i>
Northern flicker	<i>Colaptes auratus</i>
Pacific Slope flycatcher	<i>Empidonax difficilis</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Tree swallow	<i>Tachycineta bicolor</i>
Turkey vulture	<i>Cathartes aura</i>
Turkey	<i>Meleagris gallopavo</i>
Western kingbird	<i>Tyrannus verticalis</i>
California scrub-jay	<i>Aphelocoma californica</i>
Yellow-rumped warbler	<i>Dendroica coronata</i>
MAMMALS	
Botta's pocket gopher (mounds)	<i>Thomomys bottae</i>
Cottontail rabbit	<i>Sylvilagus bachmani</i>
Mule deer/Black-tailed deer (scat)	<i>Odocoileus hemionus</i>
Wild pig (tracks, rootings)	<i>Sus scrofa</i>
Coyote (scat)	<i>Canis latrans</i>

APPENDIX B.

Photographs

Pilgrim Quarry Project Amador County, CA

1 - General aspect of the site taken from the north across extensive chaparral area.



2 – Dense chamise chaparral typical of the site. Chamise was just starting to bloom at the time of the survey.



3 – Elderberry shrub in NW portion of site growing in midst of dense chaparral.



4 – Yerba santa, a common chaparral shrub, was in full-bloom at the time of the survey.



5 – Typical aspect of the Blue Oak-Grassland.



6 – Small man-made seasonal ponds exist in the extreme NW corner of the site.



7 – Shallow vernal pools exist on the south edge of the property.



8 – Bottom of shallow vernal pools on the south edge of the property with *Lasthenia*, *Eryngium*, *Gratiola*, and other vernal pool plant species.



9 – Ephemeral drainage, which are common throughout the hilly terrain on the site, with *Juncus* dominant. Note damage by rooting wild pigs.



10 – Ephemeral drainage crossing of a dirt road where water has ponded, supporting some *Juncus* and *Rumex*.



11 –Grassland area dominated by exotic annuals, but clumps of native purple needlegrass are evident in the stand. The purple wildflower is the fairly common native western monkshood (*Aconitum columbianum*).

