Scott Eliason
<seliason@fs.fed.us>
07/23/2009 01:53 PM

To howard.brown@omya.com
cc
bcc
Subject Butterfield Exp.

Hi Howard - Following on our conversation this morning, I made this rough little map to illustrate what I was trying to explain (attached). The green cross-hatching is the chms priority area that adds a level of complexity and longer timelines. The 200-300 feet or so between there and the old quarry, even though it is mostly in designated critical habitat, is category M2 under the CHMS (potential future developments, indicated by red line), meaning that only informal consultation is needed to ensure consistency with the chms and attain ESA compliance (low complexity and relatively quick timelines). The quarry is a category M1 (past and present mining) hole in the M2. The discrepancy between the green crosshatch and the M2 red line is sloppy mapping and the green crosshatch is more precise. The red cross hatching is where we currently have Oxytheca mapped (will be updated based on SW's findings.)

Let me know if you have any questions.

(See attached file: butterfield.pdf)

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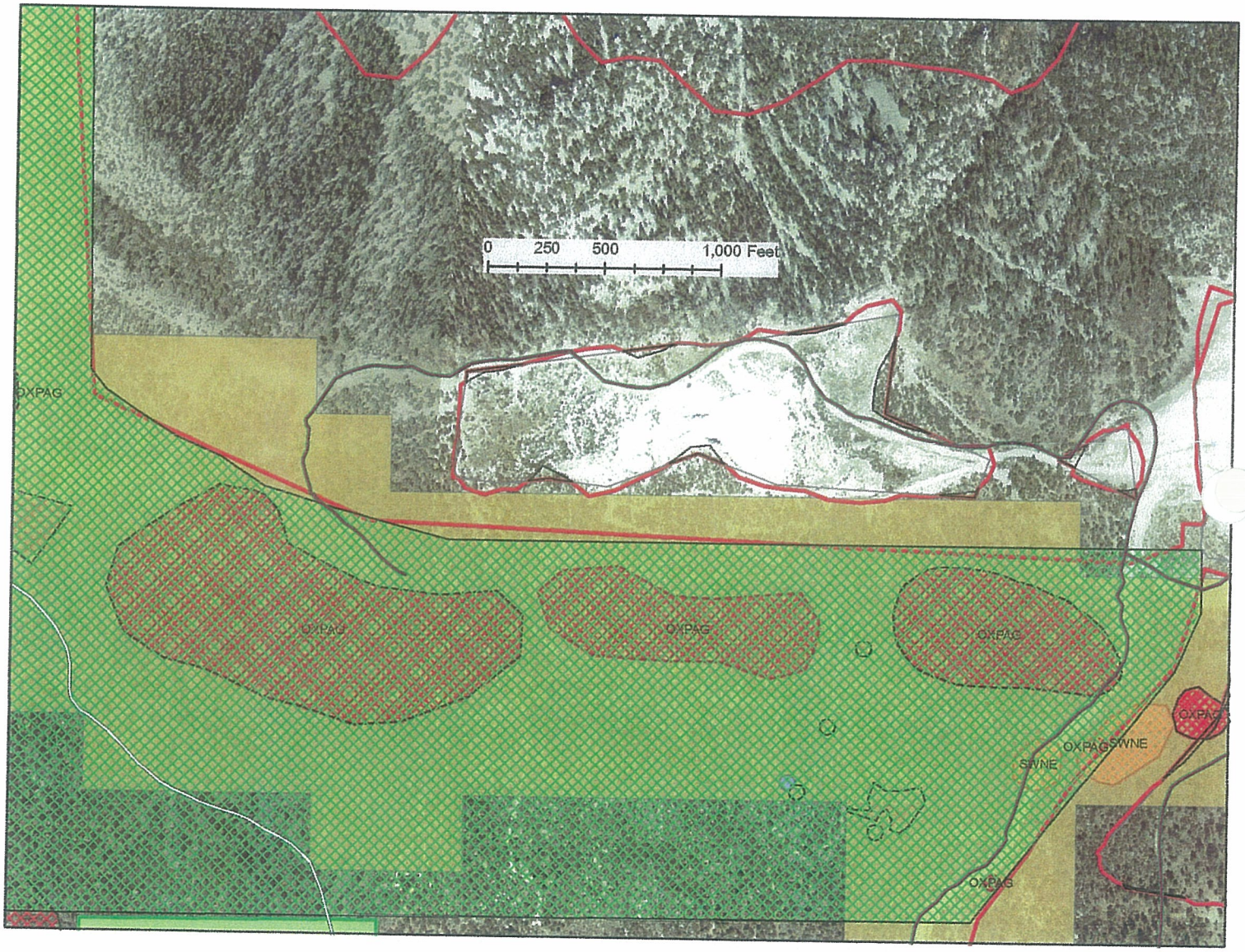
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24 August 2009

SCOTT WHITE
BIOLOGICAL CONSULTING

Howard Brown
OMYA (CALIFORNIA) INC.
PO Box 825
Lucerne Valley, CA 92356

Reg. Butterfield-3 Expansion area botanical survey

Dear Howard:

On 14 October 2008 and 24 June 2009, I surveyed the proposed expansion area at the Omya California Butterfield-3 Limestone Quarry in the San Bernardino National Forest (SBNF), San Bernardino County, California. In October 2008, Justin Wood (of Scott White Biological Consulting) and I surveyed the site, searching primarily for Cushenbury oxytheca, a federally listed endangered plant endemic to carbonate soils in the northern San Bernardino Mountains (USDI Fish and Wildlife Service 1994). We also targeted four other listed threatened or endangered carbonate-endemic plants and other special status species of the region during the survey, though the October field date limited the likelihood of finding many of these plants. In June 2009, I revisited the site with Joy England (of Scott White Biological Consulting) to complete in-season surveys for carbonate-endemic and other special status plants.

PROJECT BACKGROUND

I understand that Omya California Inc. is preparing an application to the SBNF to expand its limestone quarry at the Butterfield-3 deposit area. During a pre-application field meeting, Scott Eliason (SBNF Botanist) noted Cushenbury oxytheca growing on the proposed expansion site and recommended field surveys to determine the extent of its occurrence there. The existing quarry is near Cushenbury oxytheca Critical Habitat, designated by the USDI Fish and Wildlife Service (2002) and near the area designated for "Initial Transactions" by the interagency Carbonate Habitat Management Strategy (CHMS, Olson 2003).

TARGET SPECIES BACKGROUND

The primary target species was Cushenbury oxytheca (*Oxytheca parishii* subsp. *goodmaniana*) because it had recently been observed on the site (above). Cushenbury oxytheca was first described as a distinct taxon in 1980, by Barbara Ertter. At that time it was known from only a few sites on limestone substrates in the northern San Bernardino Mountains. It was listed as endangered by the USDI Fish and Wildlife Service in 1994. Since the original description and listing, it has been found at numerous additional sites, all on similar soils in the same geographic area (Sanders no date). It occurs on soils derived from limestone and dolomite, above about 4000 feet elevation, and is apparently endemic to in the northern San Bernardino Mountains. It is an annual plant, germinating in fall or early winter, then flowering or fruiting in spring and summer, and generally dying in late summer. The flowers and seed pods are only a few mm in size. In years of sufficient summer rainfall, it may survive and continue to produce seeds into late summer or even fall. It's leaves generally die and fall from the plant late in its life cycle, but the stems and characteristic inflorescence awns are somewhat wiry and may persist for 1-2 years after the plant dies. Thus, Cushenbury oxytheca can sometimes be found outside its flowering / fruiting seasons or even in drought years when no living plants can be found.

Three other listed threatened or endangered plants are endemic or nearly-endemic to similar soils and in the same general area: Parish's daisy, Cushenbury buckwheat, and Cushenbury milk-vetch (USDI Fish and Wildlife Service in 1994). Parish's daisy (*Erigeron parishii*) is a low-growing, mostly herbaceous perennial species with a woody base and often with woody lower

stems. It is several inches to about 1 foot tall, with narrow grayish leaves and daisy-like yellow and lavender inflorescences. It flowers in spring and summer. During dry seasons or winter dormancy it may drop most of its leaves and probably can not be reliably found. Even when leaves are present, it is inconspicuous except when in flower.

Cushenbury buckwheat (*Eriogonum ovalifolium* var. *vineum*) is a low, "cushion" forming perennial. It has many short, closely-spaced woody stems, hidden within a dense flat or rounded mat of gray, oval leaves. Its flowers are held on short stems, above the leaves. It is fairly conspicuous and distinctive even when not in flower and can be found during surveys at any time of year, except when the ground is covered by snow.

Cushenbury milk-vetch (*Astragalus albens*) is a short-lived perennial herb. During the growing season it has spreading, prostrate to ascending stems and small, pink to purplish flowers. The herbage is gray and dies back to the ground after the seeds ripen. It is inconspicuous except when in flower (between late March and mid-June), and it cannot be found at all after the growing season.

In addition to the listed threatened or endangered species, there are numerous special status plants occurring on or around the limestone soils in the northern San Bernardino Mountains. These plants are listed in Appendix 2, with summaries of their natural history and conservation status. Field surveys described here considered all of those plants as "target species."

SITE DESCRIPTION

The project site is in the northern San Bernardino Mountains at the mountain crest above Lucerne Valley (Figures 1-3). Its elevation ranges from about 7700 to 7900 feet. The site is on moderate to steep slopes facing in all directions, along an east-west trending ridgeline. On the north-facing slope, part of the site is now in use as a limestone quarry (Figure 3). The northern slope drains into Crystal Creek, which is one of several watersheds draining from the steep north-facing mountain escarpment to Lucerne Valley. Most of the survey area faces toward the south and drains via unnamed ephemeral stream channels to Holcomb Creek. There are no "blueline" hydrologic features shown on-site on the USGS topographic map.

In addition to the existing quarry, there are several exploration drill roads and other disused dirt roads on the site, but no other significant mechanical disturbance. Most woody vegetation throughout the site was burned in a recent wildfire. Prior to the fire, the site was covered by pinyon woodland comparable to Neel's (2000) descriptions, dominated by pinyon pine and curl-leaf mountain mahogany. Some shrubs are now resprouting from rootstocks, and seedlings of some woody species are present. Native and non-native herbs (e.g., Parish's buckwheat, tansy mustard, cheatgrass, and Grinnell's penstemon) are common in some patches throughout the survey area.

METHODS

Before the 2008 field survey, I reviewed available literature to identify special status plants or plant communities known from the project site and vicinity. I updated the literature review using current versions of all sources before preparing this letter. Literature included the California Natural Diversity Data Base (CNDDB 2009, USGS Fawnskin topographic quad), California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* (7th ed. on-line, 2009 for the same quad), and compendia of special status plants published by the US Fish and Wildlife Service (2007) and California Department of Fish and Game (CDFG, 2009).

Many of the special status plants in the area are endemic to meadow or pebble plain habitats. There is no suitable habitat for these species on the proposed expansion area and they are not addressed further.

All special status plants potentially occurring on the project site (those identified by this literature review and others known from the general region) are included in Appendix 2 with summaries of their natural history, agency status, and occurrence probability on-site.

During both surveys, we walked "meandering transects" (Nelson 1987) over the survey area, examining all habitat types and slope exposures. We spent about 4 hours walking over the site during each of the two field visits, using a hand-held GPS unit to record Cushenbury oxytheca occurrences. All plant species that could be identified in the field were recorded in field notes and included in Appendix 3. In conformance with California Department of Fish and Game guidelines (2000), surveys were (a) floristic in nature, (b) consistent with conservation ethics, (c) systematically covered all habitat types on the site, and (d) well documented, by this report, data forms to be sent to CDFG, and voucher specimens to be deposited at Rancho Santa Ana Botanic Garden. Our June 2009 field survey was within the flowering season for most plants, and thus complies with seasonality recommendations of the CDFG guidelines.

LIMITATIONS OF THE STUDY

We did not walk systematic linear transects to provide 100% coverage. As a result, we may have missed some Cushenbury oxytheca occurrences. The project area burned in a wildfire about a year before the 2008 field work described here. As a result, many of the shrubs and trees were difficult to identify with certainty and low, shrubby species could not be found at all throughout much of the project site. Our October 2008 field survey was well after the flowering season of most plants and we would have been unable to find or identify many species, perhaps including special status species. This would be especially true of diminutive soft-herbaceous plants including (for example) Big Bear Valley phlox (see Appendix 2). Other special-status plants may flower later in the season or can be identified well after flowering from other features (e.g., pods). Some plants may have more rigid structure so that their stems and leaves remain intact well past their flowering dates. These include Cushenbury oxytheca (which we found on the site) and Cushenbury buckwheat (which we did not find). Regardless of the limitations of our October 2008 field survey, our revisit during June 2009 was during the flowering season of the target species.

RESULTS

We found Cushenbury oxytheca in numerous scattered patches throughout much of the survey area (Figure 4). In general, these patches were in relatively open places away from formerly shaded woodland and formerly thick leaf and pine needle duff. Many of the sites were on or adjacent to disused roads or on relatively open south-facing slopes directly south of the existing quarry. Although targeted in our surveys, we did not find any of the other threatened and endangered carbonate endemic plant species. Previous surveys in have not noted their presence at this site.

We found four other special status plants on the site: Parish's rock-cress (*Arabis parishii*) was scarce on a ridgetop west of the existing quarry; and Bear Valley woollypod (*Astragalus leucolobus*) was scarce, scattered in upland areas; Big Bear Valley milk-vetch (*A. lentiginosus* var. *sierrae*) was scarce near a disused road and on disturbed soils west of the existing quarry; and Heckard's paintbrush (*Castilleja applegatei* in part) is occasional in burned-over woodlands.

None of these plants is listed as threatened or endangered. Parish's rock-cress, Big Bear Valley milk-vetch, and Heckard's paintbrush are managed by the SBNF as sensitive species. Bear Valley woollypod is on the SBNF "watch list." California Natural Diversity Data Base report forms for all special status plants observed are attached.

Please do not hesitate to contact me if you have any further questions about the methods and results described here.

Sincerely,
SCOTT WHITE BIOLOGICAL CONSULTING

Scott D. White
Consulting Biologist

encl.
1. Appendix 1: Species list
2. Appendix 2: Special status plants of the northern San Bernardino Mountains
3. Literature cited
4. Natural Diversity Data Base query results
5. Natural Diversity Data Base report forms (5)
5. Figures (4)

Latin Name	**Common Name**	**Abundance / habitat**	**Voucher**
EPHEDRACEAE	EPHEDRA FAMILY		
Ephedra viridis (?)	Green ephedra	Uncommon / open areas	
PINACEAE	PINE FAMILY		
Abies concolor	White fir	Uncomm. / forest	
Pinus contorta subsp. murrayana	Lodgepole pine	Uncomm. / forest	
Pinus monophylla	Pinyon pine	Common / throughout	
ASTERACEAE	ASTER FAMILY		
Chrysothamnus nauseosus ssp. bernardinus	Common rabbitbrush	Occasional / uplands	
Chrysothamnus viscidiflorus ssp. viscidiflorus	Curlleaf rabbitbrush (typical form)	Occasional / uplands	
* *Conyza bonariensis (?)*	Flax-leaved horseweed	Scarce / roadside	
Gutierrezia microcephala	Small-headed matchweed	Uncommon / open areas	
Lessingia sp.	Unid. annual	Uncommon / open areas	
* *Tragopogon dubius*	Oyster plant, salsify	Uncommon / open areas	
BRASSICACEAE	MUSTARD FAMILY		
** *Arabis parishii*	Parish's rock-cress	Scarce / one ridgeline	
Arabis sparsiflora var. arcuata (?) (Boechera arcuata)	Elegant rock-rose	Uncommon / throughout	13,141
Caulanthus major	Slender wild-cabbage	Occas. / throughout	
Descurainia pinnata	Tansy mustard	Occasional / uplands	
Erysiumum capitatum	Douglas wallflower	Uncommon / pine forest	
* *Lepidium virginicum v. virginicum*	Wild peppergrass	Occas. / roadsides, wash	13,140
* *Sisymbrium altissimum*	Tumble mustard	Uncommon / open areas	
CACTACEAE	CACTUS FAMILY		
Echinocereus engelmannii	Hedgehog cactus	Uncommon / pine forest	
Echinocereus triglochidiatus	Mojave mound cactus	Scarce / open sites	
Opuntia basilaris var. basilaris	Common beavertail cactus	Uncommon / throughout	
CARYOPHYLLACEAE	CARNATION FAMILY		
Arenaria macradenia var. macradenia	Mojave sandwort	Uncommon / open areas	13,137
Silene parishii	Yellow catch-fly	Occasional / pine forest	
CHENOPODIACEAE	GOOSEFOOT FAMILY		
Chenopodium sp.	Unid. goosefoot	Occasional / throughout	
ERICACEAE	MANZANITA FAMILY		
Arctostaphylos sp.	Unid. manzanita	Uncommon / uplands	
FABACEAE	PEA FAMILY		
Astragalus douglasii	Douglas rattleweed	Uncommon / uplands	
** *Astragalus lentiginosus var. sierrae*	Big Bear Valley milk vetch	Uncomm. / upland slopes, aband. roads	13,150
** *Astragalus leucolobus*	Bear Valley woollypod - WL	Scarce / uplands	
FAGACEAE	OAK FAMILY		
Quercus chrysolepis	Canyon live oak	Uncommon / chaparral	
GERANIACEAE	GERANIUM FAMILY		
* *Erodium cicutarium*	Red-stemmed filaree	Occasional / throughout	
GROSSULARIACEAE	CURRANT FAMILY		
Ribes cereum	Wax currant	Occasional / open areas	
HYDROPHYLLACEAE	WATERLEAF FAMILY		
Emmenanthe penduliflora	Whispering bells	Uncommon / throughout	
Eridictyon trichocalyx	Yerba santa	Occasional / uplands	
Nama rothrockii	Rothrock's nama	Occasional / open areas	13,144

Alien species indicated by asterisk, special status species indicated by two asterisks. This list includes only species observed on the site. Others may have been overlooked or unidentifiable due to season. Plants were identified using keys, descriptions, and illustrations in Abrams (1923-1951), Hickman (1993), and Munz (1974). Taxonomy and nomenclature generally follow Hickman. Voucher specimens (indicated by SW collection numbers) to be deposited at Rancho Santa Ana Botanic Garden.

HYDROPHYLLACEAE, cont.			
Phacelia fremontii	Fremont phacelia	Uncommon / pine forest	13,146
Phacelia hastata subsp. hastata	Timberline phacelia	Occas. / upland slopes	13,148
(P. oreopola ssp. simulans)			
Turricula parryi	Poodle bush	Scarce / chaparral	
LAMIACEAE	MINT FAMILY		
Salvia pachyphylla	Rose sage	Occasional / uplands	
LOASACEAE	STICK-LEAF FAMILY		
Mentzelia congesta	Clustered blazing star	Uncommon / pine forest	13,147
Mentzelia laevicaulis	Giant blazing star	Scarce / chaparral	
MALVACEAE	MALLOW FAMILY		
Malacothamnus fremontii	Fremont malacothamnus	Scarce / chaparral	
(M. orbiculatus)			
ONAGRACEAE	EVENING PRIMROSE FAMILY		
Camissonia sp.	Unid. annual	Occasional / uplands	
Gaypohytum sp.	Unid. gayophytum	Occasional / throughout	
PAPAVERACEAE	POPPY FAMILY		
Argemone munita	Prickly poppy	Uncommon / uplands	
POLEMONIACEAE	PHLOX FAMILY		
Gilia brecciarum (?)	Nevada gilia	Occasional / throughout	13145
(G. inconspicua var. inconspicua)			
Phlox austromontana	Western mountain phlox	Uncommon / uplands	
POLYGONACEAE	BUCKWHEAT FAMILY		
Eriogonum microthecum	San Bernardino Mountain	Uncommon / throughout	
var. corymbosioides	buckwheat		
Eriogonum nidularium	Whisk Broom	Uncommon / uplands	
Eriogonum parishii	Parish annual buckwheat	Common / uplands	
Eriogonum umbellatum v. munzii	Munz sulfur buckwheat	Uncomm. / woodland	13,142
** *Oxytheca parishii ssp. goodmaniana*	Cushenbury oxytheca	Occasional / uplands	13,143
(Oxytheca watsonii; Acanthoscyphus p. goodmaniana)			
RHAMNACEAE	BUCKTHORN FAMILY		
Ceanothus greggii (?)	Cupleaf ceanothus	Uncommon / chaparral	
ROSACEAE	ROSE FAMILY		
Amelanchier utahensis	Service berry	Scarce / pine forest	
(incl. A. pallida)			
Cercocarpus ledifolius	Curlleaf mountain mahogany	Common / throughout	
RUBIACEAE	COFFEE FAMILY		
Galium parishii	Parish bedstraw	Uncommon / chaparral	
SCROPHULARIACEAE	SNAPDRAGON FAMILY		
Castilleja applegatei subsp. martinii	Indian paintbrush	Occas. / upland slopes	13,149
Pedicularis semibarbata	Pine-woods lousewort	Scarce / pine forest	
Penstemon grinnellii	Grinnell's penstemon	Occasional / pine forest	
SOLANACEAE	NIGHTSHADE FAMILY		
Nicotiana attenuata	Coyote tobacco	Uncommon / pine forest	13,138
Solanum xanti var. montanum	Mountain nightshade	Uncommon / uplands	
STERCULIACEAE	CACAO FAMILY		
Fremontodendron californicum	Flannel bush	Uncommon / uplands	
POACEAE	GRASS FAMILY		
* *Bromus tectorum*	Cheat grass	Common / thoughout	
Elymus elymoides	Bottlebrush squirreltail	Occasional / uplands	
(Sitanion hystrix v. hystrix)			
Poa fendleriana	Fendler bluegrass	Uncomm. / woodland	13,139
Stipa coronata ssp. depauperata	Parish needlegrass	Occasional / uplands	
(Achnatherum parishii)			
Stipa hymenoides (Oryzopsis	Indian ricegrass	Uncommon / uplands	
hymenoides, Achnatherum hymenoides)			

APPENDIX 2: Special status plants of the northern San Bernardino Mountains (excluding species endemic to meadow and pebble plain habitats).

Sensitive Plant Species	Habitat and Distribution	Flower season	Status Designation	Occurrence Probability
Abronia nana subsp. *covillei* Coville's dwarf abronia	Perennial herb; carbonate and sandy soils within pinon-juniper woodlands; San Bernardino Mts. and mountains of E Mojave, about 5200 - 10,200 ft.	May - August	Fed: none USFS: sensitive Calif: S3.2 CNPS: List 4.2	Low (suitable habitat occurs; not seen during field survey)
Acanthoscyphus - see *Oxytheca*				
Allium parishii Parish's onion	Bulb; open shrubland & woodland, gen. sandy bajadas or mtn slopes, often carbonate soil, about 3000 - 5500 ft. elev.; N San Bern Mtns and Moj Des Mtns, to W Ariz.	Apr - May	Fed: none USFS: watch list Calif: S3.3? CNPS: List 4.3	Minimal (field survey; above elev. range)
Arabis dispar (*Boechera dispar*) Pinyon rock-cress	Perennial herb; coarse granitic soil, Joshua tree or pinyon-juniper woodland, desert shrubland; about 3900-8000 ft elev; Mojave Des & adj mtns	March - June	Fed: none USFS watch list Calif: S2.3 CNPS: List 2.3	Low (no appropriate soils)
Arabis parishii (*Boechera parishii*) Parish's rock cress	Perennial herb; pebble plains, occas. on carbonate soil; open dry sites in conifer forest; about 5800 - 9500 ft. elev.; San Bernardino Mtns endemic	April - May	Fed: none USFS: sensitive Calif: S2.1 CNPS: List 1B.2	**Occurs** (see text)
Arabis shockleyi (*Boechera shockleyi*) Shockley's rock-cress	Perennial herb; carbonate or quartzite soil, pinyon-juniper woodland; about 2700-7300 ft elev; N San Bern Mtns, disjunct to Inyo Co, E to Utah	May - June	Fed: none USFS: sensitive Calif: S 2.2 CNPS: List 2.2	Low (field survey)
Arenaria ursina Bear Valley sandwort	Perennial herb, pebble plains, occas. on carbonate soils, about 5900 - 9500 ft. elev.; San Bernardino Mtns. endemic	June - July	Fed: **THR** USFS sensitive Calif: S 2.1 CNPS: List 1B.2	Minimal (field survey results; habitat marginal at best)
Astragalus albens Cushenbury milk vetch	Perennial herb; carbonate outcrops and alluvial / colluvial deposits; about 3600 - 6600 ft. elev.; San Bernardino Mtns endemic	March - May	Fed: **END** USFS sensitive Calif: S1.1 CNPS: List 1B.1	Minimal (field survey; above known elev. range)
Astragalus bicristatus Crested milk vetch	Perennial herb; rocky slopes, montane conifer forest; about 5500 - 9000 ft. elev.; San Bernardino, San Gabriel, and San Jacinto Mtns	May - August	Fed: none USFS: sensitive Calif: S3.3 CNPS: List 4.3	Low (habitat suitable, not seen in field)
Astragalus lentiginosus var. *sierrae* Big Bear Valley milk vetch	Perennial herb; open rocky soils or compacted areas in pine forest; about 5900 - 8500 ft. elev.; San Bernardino Mtns endemic	April - August	Fed: none USFS sensitive Calif: S1? CNPS: List 1B.2	**Occurs** (see text)

APPENDIX 2: Special status plants of the northern San Bernardino Mountains (excluding species endemic to meadow and pebble plain habitats).

Sensitive Plant Species	Habitat and Distribution	Flower season	Status Designation	Occurrence Probability
Astragalus leucolobus Bear Valley woollypod	Perennial herb; open or disturbed soils, pine forests and sagebrush scrub, about 5600-8800 ft. elev.; San Gabriel Mtns to Santa Rosa Mtns	May - July	Fed: none USFS watch list Calif: S 2.2 CNPS: List 1B.2	**Occurs** (see text)
Berberis fremontii (incl. *B. higginsiae*) Fremont barberry	Shrub; rocky slopes; Joshua tree, pinyon or juniper woodlands; about 2700-6100 ft. elev.; Mojave Des and adj. mtns; E San Diego Co; and E to Utah and New Mexico	April - June	Fed: none USFS: none Calif: S2? CNPS: List 3	Minimal (field survey, historic local occurrence believed extinct)
Boechera - see *Arabis*				
Castilleja applegateii ssp. *martinii* × *C. angustifolia* (*C. montigena, C. martinii* var. *ewanii*) Heckard's paintbrush	Perennial herb; conifer forest; San Bernardino Mountains endemic (treated as a species by CNPS but considered a hybrid by Chuang & Heckard in Jepson Manual)	March - July	Fed: none USFS: watch list Calif: S3.3 CNPS: List 4.3	**Occurs** (see text)
Castilleja cinerea Ash-gray Indian paintbrush	Perennial herb; pebble plains, dry meadows, about 5900 to 9100 ft. elev.; partially parasitic usually on matting buckwheats; San Bernardino Mtns endemic	May - August	Fed: **THR** USFS sensitive Calif: S2.2 CNPS: List 1B.2	Minimal (field survey; habitat marginally suitable at best)
Cymopterus multinervatus Purple-nerved cympoterus	Perennial herb; desert shrubland, pinyon-juniper woodland; sandy or gravelly sites; about 2600-5900 ft elev; San Bern Mtns, N and E to New York and Clark mtns, to Utah and Texas	Mar - Apr	Fed: none Calif: S2 CNPS: List 2.2	Minimal (field surveys; above elev. range)
Dryopteris filix-mas Male fern	Perennial herb; granite cliffs above about 7800 ft. elev.; widespread in N hemisphere, esp. at high latitudes; only two reports in Calif., incl. Holcomb Valley	July - Sept.	Fed: none USFS: none Calif: S 1.3 CNPS: List 2.3	Minimal (no suitable habitat)
Dudleya abramsii subsp. *affinis* San Bernardino Mts. dudleya	Perennial herb, pebble plains & rock outcrops (often carbonate); pinyon woodland, open pine forests, about 5200-8500 ft elev; San Bernardino Mtns endemic	April - June	Fed: none USFS: sensitive Calif: S 2.2 CNPS: List 1B.2	Low (field survey results)
Erigeron parishii Parish's daisy	Low perennial; mountain slopes, upper bajadas, washes; carbonate soils; about 2600-6600 ft elev; San Bern Mtns and Joshua Tree Nat Park	May - June	Fed: **THR** USFS: sensitive Calif: S 2.1 CNPS: List 1B.1	Minimal (field survey; above known elev. range)

APPENDIX 2: Special status plants of the northern San Bernardino Mountains (excluding species endemic to meadow and pebble plain habitats).

Sensitive Plant Species	Habitat and Distribution	Flower season	Status Designation	Occurrence Probability
Eriogonum evanidum (*E. foliosum*) Leafy buckwheat, vanishing wild buckwheat	Annual; sandy soil, woodlands or shrublands; about 3900-7200 ft. elev.; scattered locations, Big Bear Valley to N Baja Calif.; formerly presumed extinct in Calif. but rediscovered in Big Bear area	July - Oct.	Fed: none USFS: sensitive Calif: S 1.2 CNPS: List 1B.2	Low (field survey, elev. range)
Eriogonum ovalifolium var. *vineum* Cushenbury buckwheat	Matting woody perennial; carbonate soils, outcrops, and talus; about 4600 to 8000 ft. elev.; San Bernardino Mtns. endemic	May - June	Fed: **END** USFS: sensitive Calif: S 1.1 CNPS: List 1B.1	Minimal (field survey)
Galium johnstonii (*G. angustifolium* var. *pinetorum*) Johnston's bedstraw	Perennial herb, dry slopes, chaparral, lower montane forest, pinyon and juniper woodland; about 4000-7600 ft. elev.; San Bernardino, San Gabriel, maybe San Jacinto mtns	June - July	Fed: none USFS: watch list Calif: S3.3 CNPS: List 4.3	Low (field survey)
Gilia - see *Saltugilia*				
Heuchera parishii Parish's alumroot	Perennial herb; rocky places, montane forests and alpine boulderfields above about 4900 ft. elev.; San Bernardino Mtns endemic	June - July	Fed: none USFS: sensitive Calif: S 2.3 CNPS: List 1B.3	Low (field survey)
Hulsea vestita subsp. *parryi* Parry's sunflower	Perennial herb; gen. conifer forests, on loose eroding soil and talus; San Bernardino Mtns and Little San Bern. Mtns; about 5500-9500 ft. elev.	April - August	Fed: none USFS: watch Calif: S 3.3 CNPS: List 4.3	Low (field survey)
Lesquerella kingii var. *bernardina* (*Physaria k.* subsp. *bernardina*) San Bernardino Mtns. bladderpod	Perennial herb; carbonate soils, about 6000-8900 ft. elev.; endemic to a few sites surrounding Big Bear Valley, San Bernardino Mtns	May - June	Fed: **END** USFS: sensitive Calif: S1.1 CNPS: List 1B.1	Minimal (field survey; outside geographic range)
Oxytheca caryophylloides (*Sidotheca caryophylloides*) Chickweed oxytheca	Annual; sandy soils in conifer forests, about 3900-8500 ft. elev.; S Sierra Nevada, Transverse Ranges, San Jacinto Mtns	July - Sept.	Fed: none USFS: sensitive Calif: S 3.3 CNPS: List 4.3	Low (field survey)
Oxytheca parishii var. *goodmaniana* (*Acanthoscyphus p.* var. *goodmaniana*) Cushenbury oxytheca	Annual; carbonate soils, about 4200 to 7800 ft. elev.; northern San Bernardino Mtns. endemic; numbers fluctuate widely year to year	May - Sept.	Fed: **END** USFS: sensitive Calif: S 1.1 CNPS: List 1B.1	**Occurs** (see text)
Packera - see *Senecio*				
Phacelia exilis (*P. mohavensis* var. *exilis*) Transverse Range phacelia	Annual; sandy or gravelly soils, forest openings, meadows, pebble plains, about 3600 - 8900 ft. elev.; S Sierra Nevada and Transverse Ranges	May - August	Fed: none USFS: watch list Calif: S 3.3 CNPS: List 4.3	Low (field survey)

APPENDIX 2: Special status plants of the northern San Bernardino Mountains (excluding species endemic to meadow and pebble plain habitats).

Sensitive Plant Species	Habitat and Distribution	Flower season	Status Designation	Occurrence Probability
Phacelia mohavensis Mojave phacelia	Annual; sandy or gravelly soil; dry meadows and streambeds gen. within pine forest, about 4500-8100 ft. elev.; San Gabriel & San Bernardino Mtns.	April - August	Fed: none USFS: watch list Calif: S 3.3 CNPS: List 4.3	Low (field survey)
Phlox dolichantha Bear Valley phlox	Perennial herb; montane forest and pebble plains; about 6000 - 9800 ft. elev.; San Bernardino Mtns endemic	May - July	Fed: none USFS: sensitive Calif: S 2.2 CNPS: List 1B.2	Low (field survey)
Physaria - see *Lesquerella*				
Polygala acanthoclada Thorny milkwort	Shrub; desert shrublands, pinyon or juniper woodl., about 2500 - 7500 ft. elev.; Mojave Desert mtns & foothills (San Bernardino and Riverside cos.)	May - Aug	Fed: none USFS: none Calif: S2.3 CNPS: List 2.3	Minimal (margin of geogr. range; field survey)
Rupertia rigida (*Psoralea rigida*) Parish's rupertia	Perennial herb; chaparral, forests, and woodlands, about 2300-8200 ft. elev.; San Bernardino Mtns, Peninsular Ranges, Baja Calif.	June - July	Fed: none USFS: watch list Calif: S3.3 CNPS: List 4.3	Low (field survey)
Saltugilia latimeri (segr. from *Gilia* [*Saltugilia*] *australis*) Latimer's woodland gilia	Annual; desert shrubland, chaparral; arid mountains and foothills; about 1300-6200 ft. elev.; desert margins, Riv. Co to Inyo Co	March - June	Fed: none USFS: sensitive Calif: S2.2 CNPS: List 1B.2	Low (field survey; above elev. range)
Sedum niveum Davidson's stonecrop	Shaded or mesic rocky ledges and crevices, montane forest, about 6800-9900 ft. elev.; San Bernardino and Santa Rosa mtns, Baja Calif	June - July	Fed: none USFS: sensitive Calif: S 3.2 CNPS: List 4.2	Minimal (poor habitat)
Selaginella asprella Bluish spike-moss	Herb; rocks, crevices, & rocky soils, dry sites in conifer forest, about 5200-8900 ft. elev.; scattered mtn. ranges of cent. & S Calif., Baja Calif.	July	Fed: none USFS: none Calif: S3.3 CNPS: List 4.3	Low (field survey)
Senecio ionophyllus (*Packera ionophylla*) Tehachapi ragwort	Perennial herb; crevices, rocky places in dry conifer forest, about 4900-8900 ft. elev.; S Sierra Nevada, San Gabriel and San Bernardino Mtns.	June - July	Fed: none USFS: watch list Calif: S3.3 CNPS: List 4.3	Low (field survey)
Sidotheca - see *Oxytheca*				
Streptanthus campestris Southern jewelflower	Perennial herb; shrublands, forests, woodlands, often rocky sites, about 2900 -7600 ft. elev.; Transverse and Peninsular Ranges, Baja Calif.	May - July	Fed: none USFS: sensitive Calif: S 2.3 CNPS: List 1B.3	Low (field survey)

APPENDIX 2: Special status plants of the northern San Bernardino Mountains (excluding species endemic to meadow and pebble plain habitats).

Sensitive Plant Species	Habitat and Distribution	Flower season	Status Designation	Occurrence Probability
Swertia neglecta (*Frasera neglecta*) Pine green-gentian	Perennial herb; conifer forests and pinyon woodland., about 4600-8200 ft. elev.; S Coastal Ranges and Transverse Ranges	May - July	Fed: none USFS: watch list Calif: S 3.3 CNPS: List 4.3	Low (field survey)
Viola pinetorum subsp. *grisea* Grey-leaved violet	Perennial herb; montane forests, about 4900 -11,200 ft. elev.; S Sierra Nevada and San Bernardino Mtns	April - July	Fed: none USFS: sensitive Calif: S 1.3 CNPS: List 1B.3	Low (field survey)

General references: Abrams 1923-1960; CDFG 2009a, 2009b; CNPS 2009, Consortium of California Herbaria 2009; Flora of North America Editorial Committee 1993+; Hickman (ed.) 1993; Munz 1974; Sanders et al. 2000; US Fish and Wildlife Service 2007.

Conservation Status

Federal designations: (federal Endangered Species Act, US Fish and Wildlife Service). Until 1996, FWS maintained a list of "category 2 candidates," described as species of concern, but with insufficient data to support listing. This list is no longer maintained and FWS has no "SOC" category.

END: Federally listed, endangered.
THR: Federally listed, threatened.
Candidate: Sufficient data are available to support federal listing, but not yet listed.
Proposed: Formally proposed for federal status shown.

***State designations*:** (California Endangered Species Act, California Dept. of Fish and Game)

END: State listed, endangered.
THR: State listed, threatened.
RARE: State listed as rare (applied only to certain plants).

CDF&G Natural Diversity Data Base Designations: Applied to special status plants and sensitive plant communities; where correct category is uncertain, CDF&G uses two categories or question marks.

S1: Fewer than 6 occurrences or fewer than 1000 individuals or less than 2000 acres.
S1.1: Very threatened
S1.2: Threatened
S1.3: No current threats known
S2: 6-20 occurrences or 1000-3000 individuals or 2000-10,000 acres (decimal suffixes same as above).
S3: 21-100 occurrences or 3000-10,000 individuals or 10,000-50,000 acres (decimal suffixes same as above).
S4: Apparently secure in California; this rank is clearly lower than S3 but factors exist to cause some concern, i.e., there is some threat or somewhat narrow habitat. No threat rank.
S5: Demonstrably secure or ineradicable in California. No threat rank.
SH: All California occurrences "historical" (i.e., no records in > 20 years).

California Native Plant Society (CNPS) designations. Note: According to CNPS (Tibor, ed., 2001 p. 54-55), plants on Lists 1A, 1B, and 2 meet definitions as threatened or endangered and "are eligible" for state listing. That interpretation of the state Endangered Species Act is not in general use.

List 1A: Plants presumed extinct in California.
List lB: Plants rare and endangered in California and throughout their range.
List 2: Plants rare, threatened or endangered in California but more common elsewhere in their range.
List 3: Plants about which we need more information; a review list.
List 4: Plants of limited distribution; a watch list.

APPENDIX 2: Special status plants of the northern San Bernardino Mountains (excluding species endemic to meadow and pebble plain habitats).

CNPS Threat Rank:

.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Fairly endangered in California (20-80% occurrences threatened)
.3 Not very endangered in California (<20% of occurrences threatened or no current threats known)

Definitions of occurrence probability: Estimated occurrence probabilities based literature sources cited earlier and field surveys and habitat analyses reported here.

Occurs: Observed on the site by qualified biologists.
Expected: Not observed or recorded on the site, but very likely present during at least a portion of the year.
High: Habitat is a type often utilized by the species and the site is within the known range of the species.
Moderate: Site is within the known range of the species and habitat on the site is a type occasionally used.
Low: Site is within the species' known range but habitat is rarely used, or the species was not found during focused surveys covering less than 100% of potential habitat or completed in marginal seasons.
Minimal: No suitable habitat on the site; or well outside the species' known elevational or geographic ranges; or a focused study covering 100% of all suitable habitat, completed during the appropriate season and during a year of appropriate rainfall, did not detect the species.
Unknown: No focused surveys have been performed in the region, and the species' distribution and habitat are poorly known.

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Sanders, A.C. 2000. Vascular Plants of the San Bernardino Mountains. Unpublished working draft manuscript.

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USDI Fish and Wildlife Service. 2002 (24 Dec). Endangered and threatened wildlife and plants; designation of critical habitat for five carbonate plants from the San Bernardino Mountains in Southern California; final rule. Federal Register 67:78570-78610.

USDI Fish and Wildlife Service. 2007 (6 Dec). Endangered and threatened wildlife and plants; review of native species that are candidates or proposed for listing as endangered or threatened; annual notice of findings on resubmitted petitions; annual description of progress on listing actions; proposed rule. Federal Register 72:69034-69106.

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	***Acanthoscyphus parishii var. goodmaniana*** Cushenbury oxytheca	PDPGN0J043	Endangered		G4?T1	S1.1	1B.1
2	***Arabis parishii*** Parish's rock-cress	PDBRA061C0			G2	S2.1	1B.2
3	***Arabis shockleyi*** Shockley's rock-cress	PDBRA061V0			G3	S2.2	2.2
4	***Arenaria ursina*** Big Bear Valley sandwort	PDCAR040R0	Threatened		G2	S2.1	1B.2
5	***Astragalus albens*** Cushenbury milk-vetch	PDFAB0F0A0	Endangered		G1	S1.1	1B.1
6	***Astragalus lentiginosus var. sierrae*** Big Bear Valley milk-vetch	PDFAB0FB9L			G5T1	S1?	1B.2
7	***Astragalus leucolobus*** Big Bear Valley woollypod	PDFAB0F4T0			G2	S2.2	1B.2
8	***Calochortus palmeri var. palmeri*** Palmer's mariposa-lily	PMLIL0D122			G2T2	S2.1	1B.2
9	***Castilleja cinerea*** ash-gray paintbrush	PDSCR0D0H0	Threatened		G2	S2.2	1B.2
10	***Castilleja lasiorhyncha*** San Bernardino Mountains owl's-clover	PDSCR0D410			G2	S2.2	1B.2
11	***Cymopterus multinervatus*** purple-nerve cymopterus	PDAPI0U0G0			G5	S2	2.2
12	***Dryopteris filix-mas*** male fern	PPDRY0A0B0			G5	S1.3	2.3
13	***Dudleya abramsii ssp. affinis*** San Bernardino Mountains dudleya	PDCRA04013			G3T2	S2.2	1B.2
14	***Erigeron parishii*** Parish's daisy	PDAST3M310	Threatened		G2	S2.1	1B.1
15	***Eriogonum kennedyi var. austromontanum*** southern mountain buckwheat	PDPGN083B2	Threatened		G4T2	S2.2	1B.2
16	***Eriogonum ovalifolium var. vineum*** Cushenbury buckwheat	PDPGN084F8	Endangered		G5T1	S1.1	1B.1
17	***Heuchera parishii*** Parish's alumroot	PDSAX0E0S0			G2	S2.3	1B.3
18	***Ivesia argyrocoma*** silver-haired ivesia	PDROS0X020			G2	S2.2	1B.2
19	***Lesquerella kingii ssp. bernardina*** San Bernardino Mountains bladderpod	PDBRA1N0W1	Endangered		G5T1	S1.1	1B.1
20	***Lewisia brachycalyx*** short-sepaled lewisia	PDPOR04010			G4G5	S3.2	2.2
21	***Lilium parryi*** lemon lily	PMLIL1A0J0			G3	S2.1	1B.2
22	***Mimulus exiguus*** San Bernardino Mountains monkeyflower	PDSCR1B140			G2	S2.2	1B.2
23	***Mimulus purpureus*** little purple monkeyflower	PDSCR1B2B0			G2	S2.2	1B.2

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	***Navarretia peninsularis*** Baja navarretia	PDPLM0C0L0			G3?	S2.2	1B.2
25	***Packera bernardina*** San Bernardino ragwort	PDAST8H0E0			G2	S2.2	1B.2
26	***Perideridia parishii ssp. parishii*** Parish's yampah	PDAPI1N0C2			G4T3T4	S2.2?	2.2
27	***Phlox dolichantha*** Big Bear Valley phlox	PDPLM0D0P0			G2	S2.2	1B.2
28	***Poa atropurpurea*** San Bernardino blue grass	PMPOA4Z0A0	Endangered		G2	S2.2	1B.2
29	***Potentilla glandulosa ssp. ewanii*** Ewan's cinquefoil	PDROS1B0S3			G5T1	S1.3	1B.3
30	***Pyrrocoma uniflora var. gossypina*** Bear Valley pyrrocoma	PDASTDT0K1			G5T2	S2.2	1B.2
31	***Saltugilia latimeri*** Latimer's woodland-gilia	PDPLM0H010			G2	S2.2	1B.2
32	***Sidalcea pedata*** bird-foot checkerbloom	PDMAL110L0	Endangered	Endangered	G1	S1.1	1B.1
33	***Streptanthus bernardinus*** Laguna Mountains jewel-flower	PDBRA2G060			G3	S3.3	4.3
34	***Taraxacum californicum*** California dandelion	PDAST93050	Endangered		G2	S2.1	1B.2
35	***Thelypodium stenopetalum*** slender-petaled thelypodium	PDBRA2N0F0	Endangered	Endangered	G1	S1.1	1B.1

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California Native Species Field Survey Form

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Scientific Name: *Acanthoscyphus parishii var. goodmaniana*

Common Name: Cushenbury oxytheca

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 100+ Subsequent Visit? ☐ yes ☑ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: 13143 Number RSA (Scott D. White) Museum / Herbarium

Reporter: Justin M. Wood
Address: 201 North First Ave. No. 102
Upland, CA 91786
E-mail Address: justinbioservices@verizon.net
Phone: (909) 949-3686

Plant Information

Phenology: _____% vegetative 100 % flowering _____% fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

San Bernardino Mountains, Omya limestone quarry, just west of existing B-3 quarry.

County: San Bernardino Landowner / Mgr.: SBNF

Quad Name: Fawnskin Elevation: 7800'

T 3N R 1W Sec 23, ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): Topo

T____ R____ Sec____, ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____

DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy _____ meters/feet

Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ *OR* Geographic (Latitude & Longitude) ☑

Coordinates: 34 19' 30" N, 116 57' 15" W

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

Recently burned (± 2 years ago) pinyon/juniper woodland with limestone soils.

Other rare taxa seen at THIS site on THIS date:
(separate form preferred)

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☑ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: Mining immediately to the east, dirt roads throughout the area.

Visible disturbances:

Threats: Possible quarry expansion in the vicinity.

Comments:

Determination: *(check one or more, and fill in blanks)*

- ☑ Keyed (cite reference): Hickman, 1993
- ☐ Compared with specimen housed at: _____
- ☐ Compared with photo / drawing in: _____
- ☐ By another person (name): _____
- ☐ Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☐ no ☐

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Scientific Name: *Arabis parishii*

Common Name: Parish's rock cress

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals ± 25 Subsequent Visit? ☐ yes ☑ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Justin M. Wood
Address: 201 North First Ave. No. 102
Upland, CA 91786
E-mail Address: justinbioservices@verizon.net
Phone: (909) 949-3686

Plant Information

Phenology: 50 % vegetative _____ % flowering 50 % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

San Bernardino Mountains, Omya limestone quarry, just west of existing B-3 quarry.

County: San Bernardino Landowner / Mgr.: SBNF

Quad Name: Fawnskin Elevation: 7800'

T 3N R 1W Sec 23, ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): Topo

T____ R____ Sec____, ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____

DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy _____ meters/feet

Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ *OR* Geographic (Latitude & Longitude) ☑

Coordinates: 34 19' 30" N, 116 57' 15" W

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

Recently burned (± 2 years ago) pinyon/juniper woodland with limestone soils.

Other rare taxa seen at THIS site on THIS date:
(separate form preferred)

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☑ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: Mining immediately to the east, dirt roads throughout the area.

Visible disturbances:

Threats: Possible quarry expansion in the vicinity.

Comments:

Determination: *(check one or more, and fill in blanks)*

- ☑ Keyed (cite reference): Hickman, 1993
- ☐ Compared with specimen housed at: _____
- ☐ Compared with photo / drawing in: _____
- ☐ By another person (name): _____
- ☐ Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☐ no ☐

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Scientific Name: *Astragalus lentiginosus var. sierrae*

Common Name: Big Bear Valley milk-vetch

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals ± 25 Subsequent Visit? ☐ yes ☑ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: 13150 Number RSA (Scott D. White) Museum / Herbarium

Reporter: Justin M. Wood

Address: 201 North First Ave. No. 102
Upland, CA 91786

E-mail Address: justinbioservices@verizon.net

Phone: (909) 949-3686

Plant Information

Phenology: _____% vegetative 50 % flowering 50 % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

San Bernardino Mountains, Omya limestone quarry, just west of existing B-3 quarry.

County: San Bernardino Landowner / Mgr.: SBNF

Quad Name: Fawnskin Elevation: 7800'

T 3N R 1W Sec 23, ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): Topo

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DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy _____ meters/feet

Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ *OR* Geographic (Latitude & Longitude) ☑

Coordinates: 34 19' 30" N, 116 57' 15" W

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope):

Recently burned (± 2 years ago) pinyon/juniper woodland with limestone soils.

Other rare taxa seen at THIS site on THIS date:
(separate form preferred)

Site Information

Overall site/occurrence quality/viability (site + population): ☐ Excellent ☑ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: Mining immediately to the east, dirt roads throughout the area.

Visible disturbances:

Threats: Possible quarry expansion in the vicinity.

Comments:

Determination: (check one or more, and fill in blanks)

- ☑ Keyed (cite reference): Hickman, 1993
- ☐ Compared with specimen housed at: _____
- ☐ Compared with photo / drawing in: _____
- ☐ By another person (name): _____
- ☐ Other: _____

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☐ no ☐

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Scientific Name: *Astragalus leucolobus*

Common Name: Big Bear Valley woollypod

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals ± 25 Subsequent Visit? ☐ yes ☑ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Justin M. Wood
Address: 201 North First Ave. No. 102
Upland, CA 91786
E-mail Address: justinbioservices@verizon.net
Phone: (909) 949-3686

Plant Information

Phenology: 50 % vegetative _____ % flowering 50 % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

San Bernardino Mountains, Omya limestone quarry, just west of existing B-3 quarry.

County: San Bernardino Landowner / Mgr.: SBNF

Quad Name: Fawnskin Elevation: 7800'

T 3N R 1W Sec 23, ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐

T____ R____ Sec____, ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐

Source of Coordinates (GPS, topo. map & type): Topo

GPS Make & Model _____

DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐

Horizontal Accuracy _____ meters/feet

Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ *OR* Geographic (Latitude & Longitude) ☑

Coordinates: 34 19' 30" N, 116 57' 15" W

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*

Recently burned (± 2 years ago) pinyon/juniper woodland with limestone soils.

Other rare taxa seen at THIS site on THIS date:
(separate form preferred)

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☑ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: Mining immediately to the east, dirt roads throughout the area.

Visible disturbances:

Threats: Possible quarry expansion in the vicinity.

Comments:

Determination: *(check one or more, and fill in blanks)*

- ☑ Keyed (cite reference): Hickman, 1993
- ☐ Compared with specimen housed at: _____
- ☐ Compared with photo / drawing in: _____
- ☐ By another person (name): _____
- ☐ Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☐ no ☐

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

Date of Field Work (mm/dd/yyyy): 06/24/2009

For Office Use Only
Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Castilleja martinii var. clokeyi*

Common Name: Martin's paintbrush

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 50+ Subsequent Visit? ☐ yes ☑ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: 13149 Number RSA (Scott D. White) Museum / Herbarium

Reporter: Justin M. Wood
Address: 201 North First Ave. No. 102
Upland, CA 91786
E-mail Address: justinbioservices@verizon.net
Phone: (909) 949-3686

Plant Information

Phenology: _____% vegetative 100 % flowering _____% fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***

San Bernardino Mountains, Omya limestone quarry, just west of existing B-3 quarry.

County: San Bernardino Landowner / Mgr.: SBNF

Quad Name: Fawnskin Elevation: 7800'

T 3N R 1W Sec 23, ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐

T____ R____ Sec____, ____ ¼ of ____ ¼, Meridian: H☐ M☐ S☐

Source of Coordinates (GPS, topo. map & type): Topo

GPS Make & Model _____

DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐

Horizontal Accuracy _____ meters/feet

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(separate form preferred)

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Visible disturbances:

Threats: Possible quarry expansion in the vicinity.

Comments:

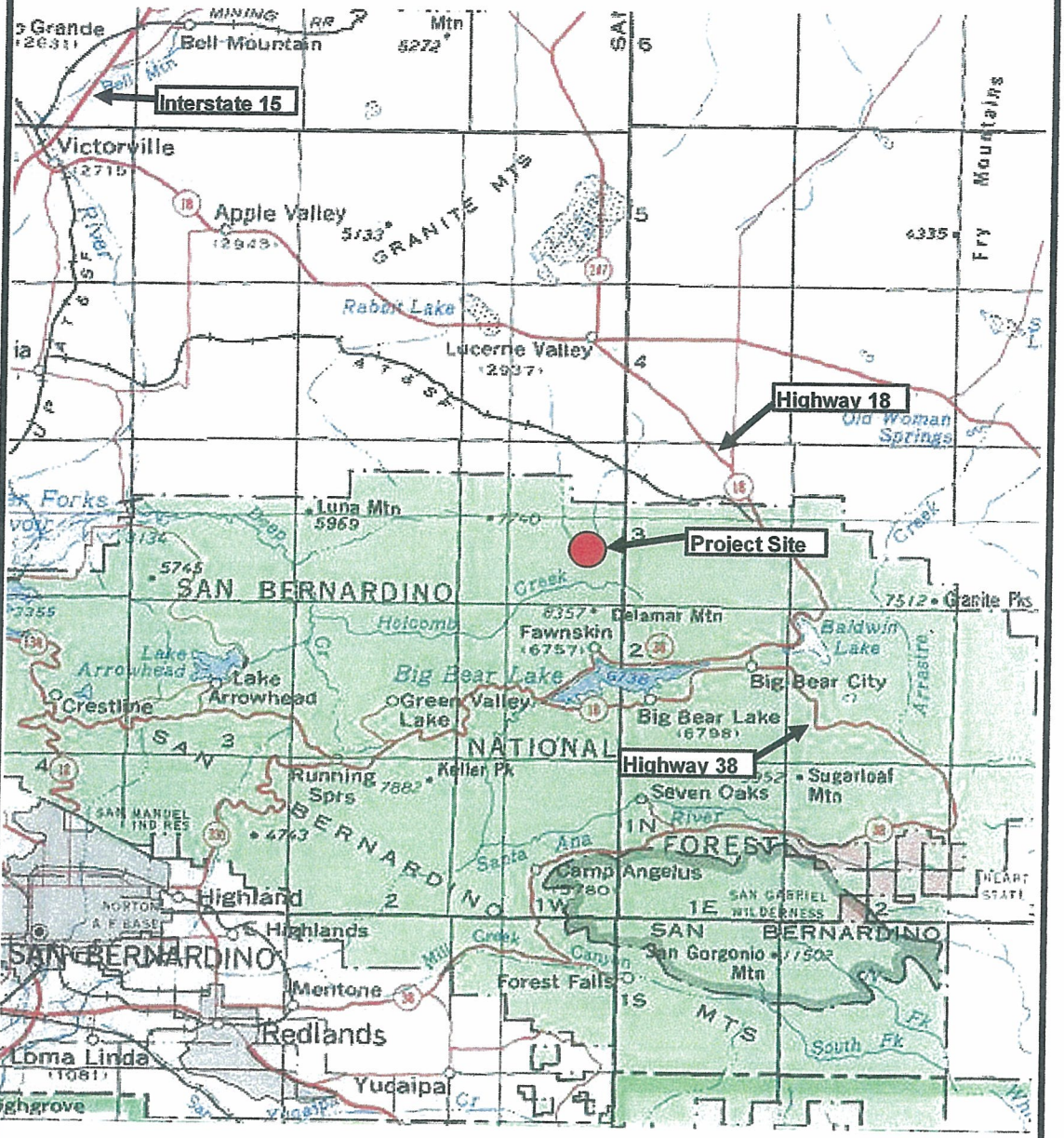
Determination: *(check one or more, and fill in blanks)*

- ☑ Keyed (cite reference): Hickman, 1993
- ☐ Compared with specimen housed at: _____
- ☐ Compared with photo / drawing in: _____
- ☐ By another person (name): _____
- ☐ Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☐ no ☐

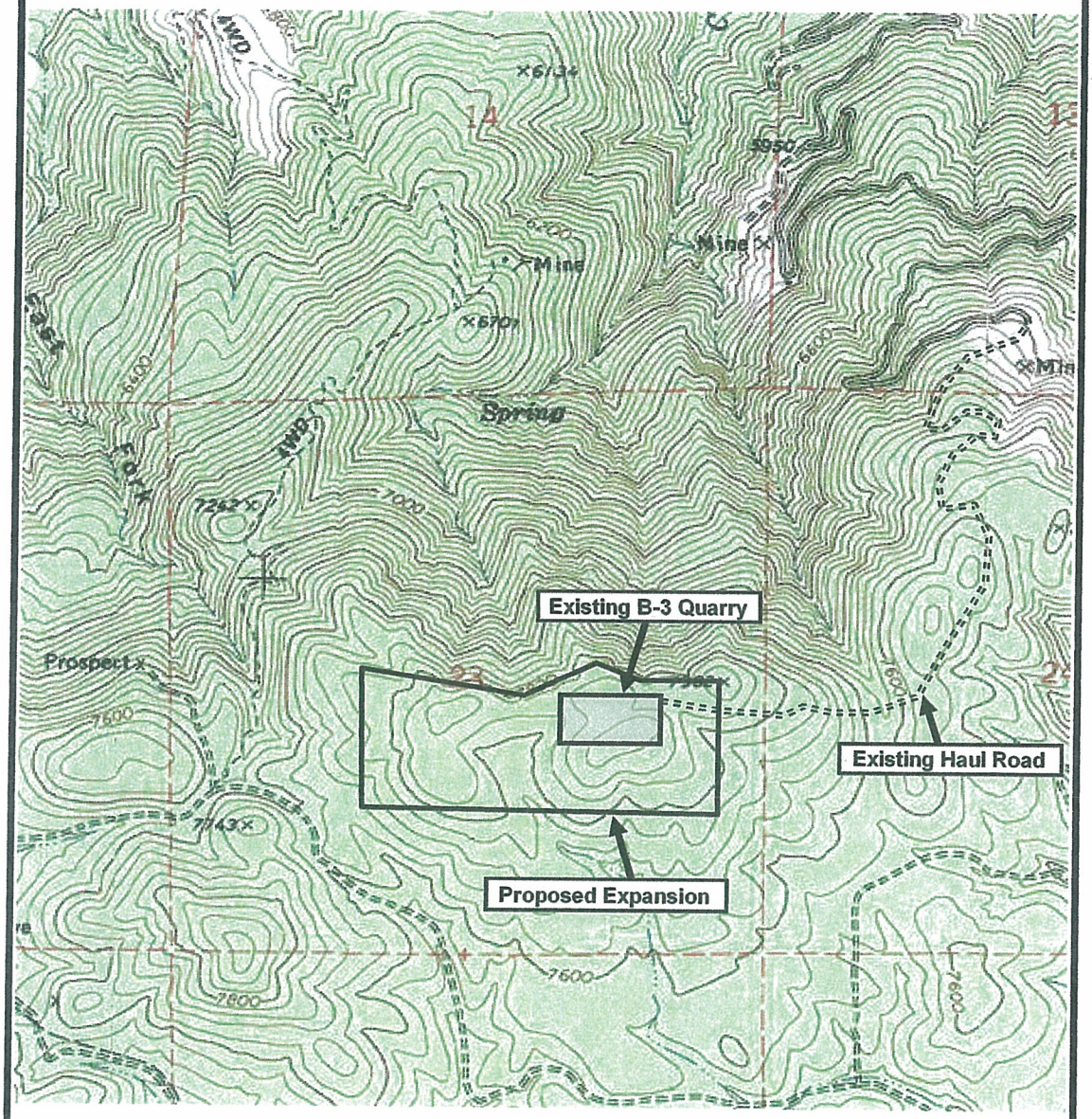


Proposed B-3 Quarry Expansion

Figure 1: Vicinity Map

Scott White Biological Consulting

Map source: TOPO!
JW: 27 Oct. 2008



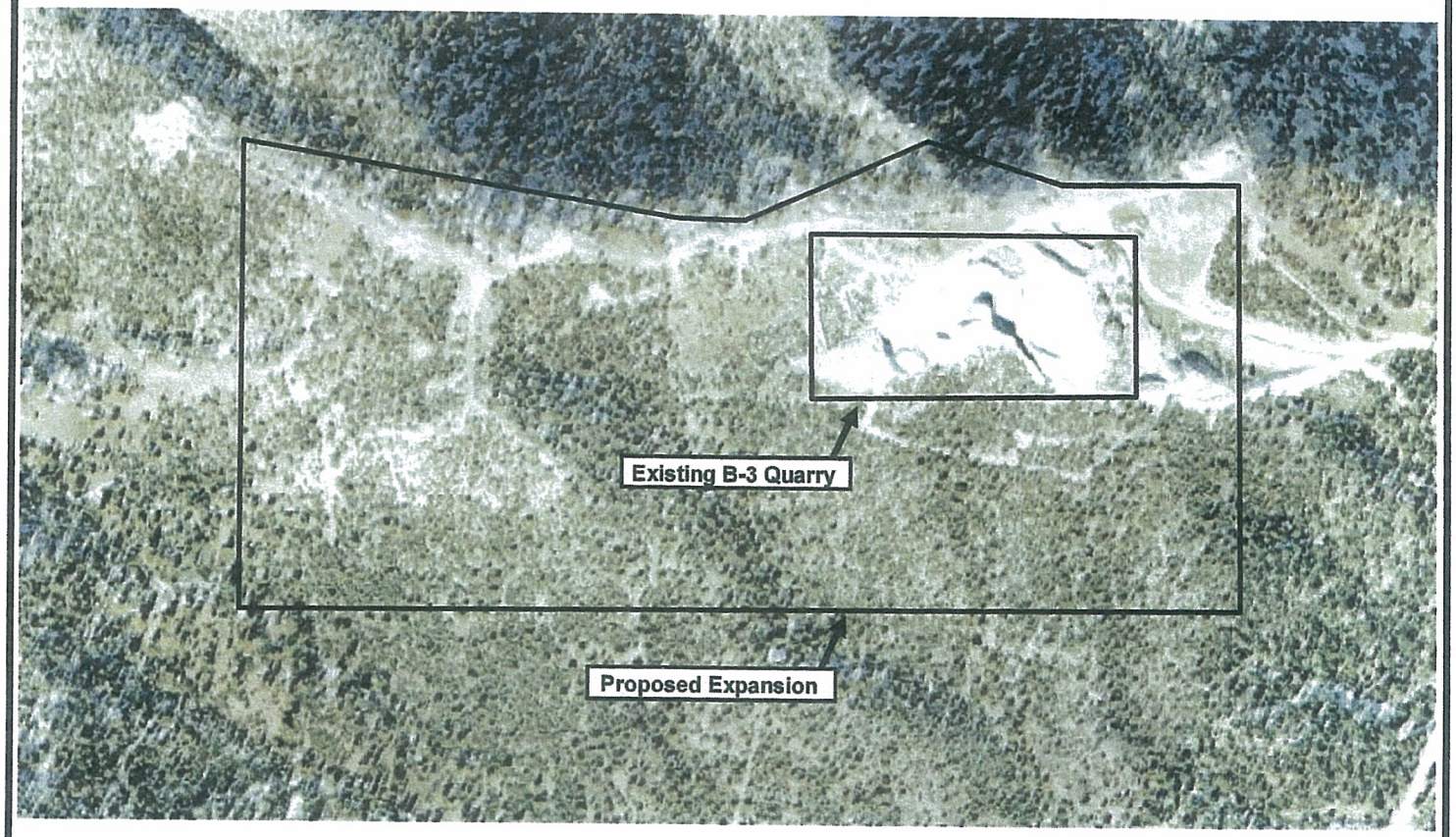
Proposed B-3 Quarry Expansion

Figure 2: Project Boundaries (approximate)

Scott White Biological Consulting

Map source: TOPO!, 7½ minute topographic: Fawnskin, CA
JW: 27 Oct. 2008

NORTH



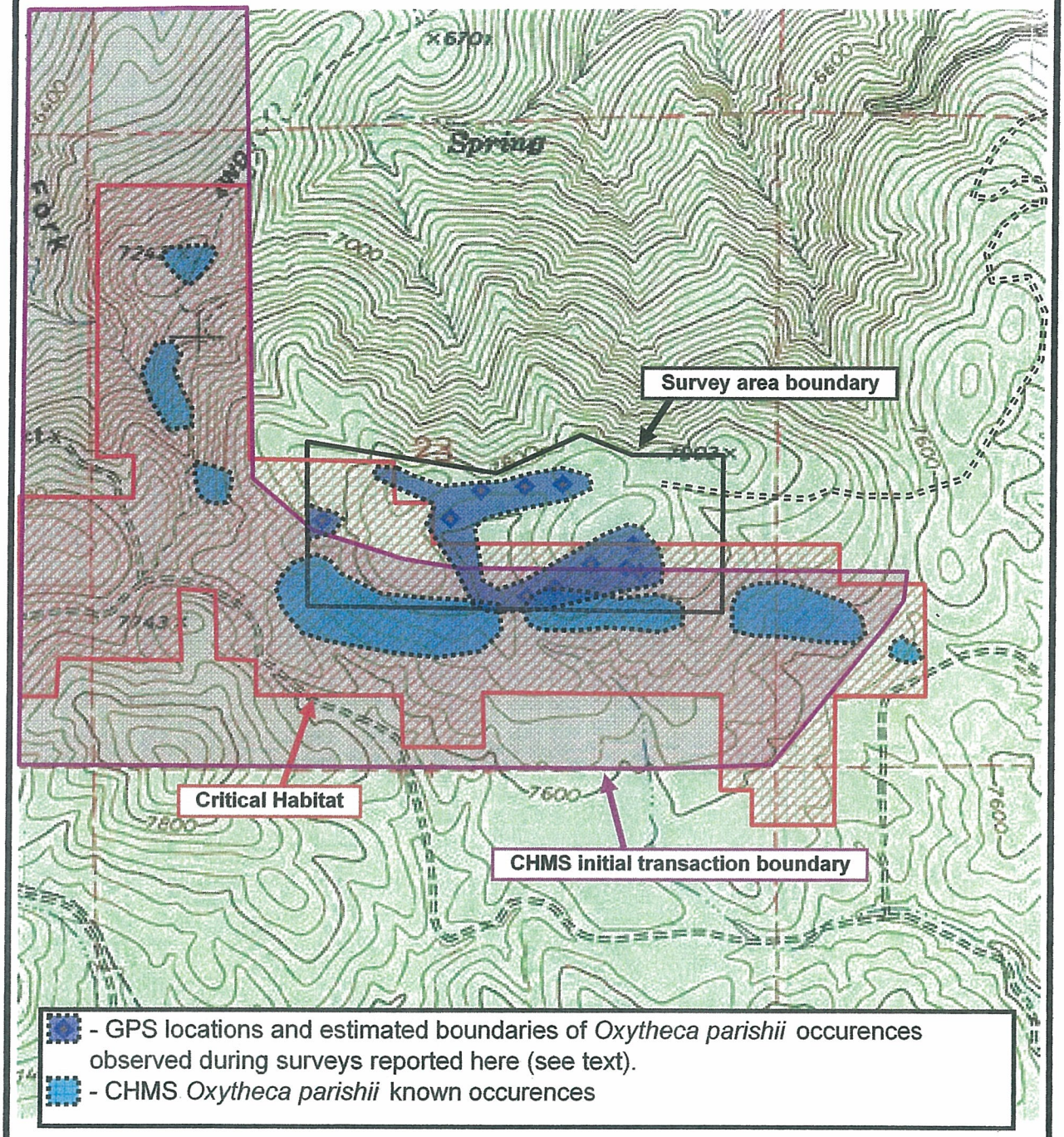
Proposed B-3 Quarry Expansion

Figure 3: Aerial View (boundaries approximate)

Scott White Biological Consulting

Map source: Google Earth
JW: 27 Oct. 2008

NORTH



Proposed B-3 Quarry Expansion

Figure 4: Cushenbury oxytheca locations

Scott White Biological Consulting

Map source: TOPO!, 7½ minute topographic: Fawnskin, CA
JW: 1 Dec. 2008

NORTH