

Appendix I: ELMNT Biological Database Technical Review

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May 23, 2018

LAND USE SERVICES DEPARTMENT

SAN BERNARDINO COUNTY

Attn: *Tom Nieves*

385 N. Arrowhead Avenue

San Bernardino, California 92415

SUBJECT: Technical Review of the Biological Database for the Moon Camp Project Site

Introduction

Element Consulting (ELMT) reviewed all existing biological reports prepared for the Moon Camp project site and conducted two site visits on March 13, 2018 and April 11, 2018 to verify existing site conditions and the continued applicability of these reports to the pending CEQA document. Prior to ELMT's site visit, Dr. Tim Krantz conducted a similar site visit in 2016 to verify that site conditions had not changed since his 2007 and 2010 reports. Dr. Krantz concluded that site conditions had not changed and that the populations of ashy-gray Indian paintbrush (*Castilleja cinerea*) and other special-status species had remained intact and at the same population levels. Based on ELMT's and Dr. Krantz's site visits and review of existing biological reports previously prepared (through 2016), it was concluded that site conditions remain relatively unchanged and that the previous reports were still applicable, with Dr. Krantz's three special-status plant species reports the most current and accurate plant reports. Based on this technical review and 2018 site visits, ELMT is providing the following summary/analysis of key biological data for special-status species occurring or potentially occurring on the project site, as well as suggestions for improving the proposed mitigation measures.

Bald Eagle

Although the California Department of Fish and Wildlife (CDFW) still lists bald eagle as threatened under the California Endangered Species Act (CESA), the species was delisted by the United States Fish and Wildlife Service (USFWS) in 2007 due to the significant recovery of the species. Research has found that the bald eagle has become habituated to the presence of humans and will now nest and roost in proximity to residential developments. There are no bald eagle nesting sites within the project area. However, a total of nine (9) perch trees have been identified onsite. Seven of the identified perch trees are adjacent to the Big Bear Lake's shoreline. Perch trees are used for resting, for monitoring their territories for predators or other eagles, and for hunting. Steenhof (1978) investigation into bald eagle perch determined that proximity to a food source is most important factor in diurnal perch selection by bald eagles. Optimal perch trees are typically tall with an open growth structure that provide line-of sight-opportunities and that are near water

(Steenhof, 1978 and Stalmaster and Newman 1979). In their study they also found that bald eagles used artificial perch trees more than would be expected from occurrence alone. In their study, the artificial perch trees provided the closer proximity to water, were generally taller than the native trees and had a greater open growth structure for line-of-site opportunities. Given artificial and native trees that provided comparable characteristics, bald eagle, are using artificial and native trees similarly. The study's conclusion was that artificial perch trees may be an effective tool as both a mitigation measure and a management strategy. For the Moon Camp project, the use of artificial perch trees that resemble the existing perch trees in terms of size, structure and proximity to the shoreline would compensate for the loss of native perch trees. It is recommended that the existing perch trees be surveyed for their overall health and expected longevity and that a plan for replacement be developed from this information. Replacement trees/perches would be installed in advance to the projected loss of a perch tree to ensure there is no loss of perching opportunities.

It is also important to note that bald eagle populations have expanded in recent years, even as increasing human presence and activity near nesting and perching sites has increased. Bald eagle populations have increased in face of increasing human recreation and development along shorelines within prime eagle habitat. This combined growth in eagle populations and human populations have resulted in more frequent interactions with humans (Johnsgard 1990). Due to this increasing overlap with human populations and human activities, bald eagles have habituated to presence of humans. Observations of eagle populations suggest that many eagles are more accepting of eagle activities near nests and wintering sites (Watson et al. 1999, Anthony 2001, and Millsap et al. 2004). A recent newspaper article in The Wash Post by Gregory Lee Sullivan (February 29, 2016) quoted Kevin McGowan of the Cornell Lab of Ornithology as saying “the main thing is that they (bald eagles) just don’t really care as much about people anymore” and are now found nesting in residential areas. He concluded that changes in the behavior of the bald eagle are the results of laws that protect the bird and have helped the species recover after nearly dying out in the early 1960s. The number of bald eagles breeding pairs in the lower 48 contiguous states has increased from a low of 487 in 1963 to 9,789 in 2006. The species was removed by USFWS from the endangered species list in 2007. Given the proposed mitigation measure for maintaining perch trees, both native trees and artificial perches, as well as the species habituation to humans, the presence of 50 new homes in rural residential community of Fawnskin will not adversely affect foraging behavior or other roosting behavior of the bald eagles.

Other Special-Status Species

Special-Status Plant Species

The Moon Camp project site supports a yellow pine forest (54.91 acres) with a small area of wet meadow (4.14 acres) along the lake's shoreline and a very limited area of pebble plain-like habitat (0.69 acres). These three habitats are known to support special-status species. Several detailed special-status plant surveys have been conducted for the project site over the last twenty years. The last two special-status plant surveys of the project site were conducted by Dr. Tim Krantz, the leading authority on Pebble Plain habitat.

Dr. Tim Krantz conducted special-status plant surveys in 2007 and 2010 during years with average or above average rainfall years. The focus of his two surveys was to document the extent of Pebble Plain and ashy-gray Indian Paintbrush habitats found onsite, as well as to determine the extent and quality of Big Bear Lake's shoreline wet meadow habitat within the project boundary. Based on a CNDDDB search and a review

of existing literature and Dr. Krantz's personal knowledge of these two sensitive habitats, the following list of special-status plant species, which includes Federal and State listed plant species, as well as, CNPS List 1B or higher plant species) were included in the survey:

Pebble Plain Species

- Bear Valley sandwort (*Arenaria ursina*) (FE)
- Ashy-gray Indian paintbrush (*Castilleja cinerea*) (FT)
- Southern mountain buckwheat (*Eriogonum kennedyi* var. *austromontanum*) (FT)
- Parish's rock cress (*Arabis parishii*) (CNPS 1B.2)
- San Bernardino Mountains dudleya (*Dudleya abramsii* ssp. *affinis*) (CNPS 1B.2)
- Baldwin Lake linanthus (*Linanthus killipii*) (CNPS 1B.2)
- Bear Valley phlox (*Phlox dolichantha*) (CNPS 1B.2)
- Purple monkeyflower (*Mimulus purpureus*) (CNPS 1B.2)
- Fuzzy rat-tails (*Ivesia argyrocoma*) (CNPS 1B.1)

Montane Meadow Species

- San Bernardino bluegrass (*Poa atropurpurea*) (FE)
- Bird-foot checkerbloom (*Sidalcea pedata*) (FE, SE)
- California dandelion (*Taraxacum californicum*) (FE)
- Slender-petaled thelypodium (*Thelypodium stenopetalum*) (FE)
- San Bernardino Mountain monkeyflower (*Mimulus exiguus*) (CNPS 1B.2)

Rocky Soil Species

- Big Bear Valley milkvetch (*Astragalus lentiginosus* var. *sierra*) (CNPS 1B.2)
- Southern jewelflower (*Streptanthus campestris*) (CNPS 1B.3)

Pine Forest Species

- Bear Valley woollypod (*Astragalus leucolobus*) (CNPS 1B.2)

Based on Dr. Krantz surveys, the project site was found to support a large population of ashy-gray Indian paintbrush, 5,567 plants. All the ashy-gray Indian paintbrush were found within 7.71 acres in the far western portion of the 64-acre project site (See attachments 1 and 2). All ashy-gray Indian paintbrush plants were found within yellow pine forest habitat. Although there is a single area with appropriate soils and characteristic ground cover for Pebble Plain habitat, the site does not support two key indicator plant species (Bear Valley sandwort and southern mountain buckwheat) and technically can't be classified as Pebble Plain habitat. This area was classified by Dr. Krantz as "Pebble Plain-like Habitat." Only 21 ashy-gray Indian paintbrush plants were located within the pebble plain-like habitat. Besides ashy-gray Indian paintbrush, other Pebble Plain special-status plant species found by Dr. Krantz on the project site included: Parish's rock cress, Bear Valley phlox, purple monkeyflower, and fuzzy rat-tail. The other potentially four

occurring Pebble Plain special-status plant species (Bear Valley sandwort, southern mountain buckwheat, San Bernardino Mountains dudleya, and Baldwin Lake linanthus) were not observed despite favorable conditions during both surveys and are presumably absent.

None of the five listed or special-status Montane meadow plant species were identified onsite. The shoreline habitat was determined to be highly disturbed and ruderal in nature. The area did not support a viable Montane meadow habitat capable of supporting listed or special-status plant species.

A search the yellow pine habitat, particularly areas with rocky soils or outcrops identified one of the three CNPS List 1B plant species (Bear Valley woollypad) as occurring on the project site. The other two potentially occurring special-status plant species (Big Bear Valley milkvetch and southern yellow jewelflower) were not observed and are presumed absent.

All but one, Bear Valley phlox, of the observed special-status species are confined to the western portion of the project site. The project applicant has worked closely with Dr. Krantz to design a conservation strategy for ash-gray Indian paintbrush that will conserve the majority (88%) of the ashy-gray paintbrush plants and 4.84 acres (73%) of the existing habitat (See Attachment 1 and 2). These 4.84 acres also provides habitat for the other five observed Pebble Plain and Rocky Soil special-status plant species and will be permanently preserved and managed along with the ashy-gray Indian paintbrush. This will require that a conservation easement be recorded over the site, a long-term management plan and Property Action Report (PAR) be prepared and approved by CDFW and USFWS, and that a non-wasting endowment be formally established in favor of an approved conservation management entity.

Also, as part of the proposed conservation measures for impacting 672 ashy-gray Indian paintbrush plants on 2.87 acres of occupied ashy-gray Indian paintbrush habitat, the applicant will set aside and permanently preserve offsite true Pebble Plain habitat at the Dixie Lee Lane site. The Dixie Lee Lane site is a 10-acre discrete true Pebble Plain habitat situated in a pinyon-juniper/Jeffery pine woodland. An inventory of this site by Dr. Krantz determined that these 10 acres support all three federally listed pebble plain plant species including the two key indicator plant species (Bear Valley sandwort and southern mountain buckwheat), ashy-gray Indian paintbrush, as well as the full suite of Pebble Plain endemic plant species: Parish's rock cress, southern mountain buckwheat, Baldwin Lake linanthus, and purple monkeyflower. These 10 acres of Pebble Plain habitat, while temporarily considered for Pebble Plain conservation in the past, the proposed conservation was never perfected and remains available for future conservation. The Moon Camp has acquired this property and will place it in permanent conservation, provide long-term management funded by a non-wasting endowment, to be managed by an approved conservation management entity.

These two conservation areas, the 4.84 acres of onsite ashy-gray Indian paintbrush habitat and the 10 acres of offsite Pebble Plain habitat, will provide sufficient conservation to compensate for the loss of 2.87 acres of habitat supporting Pebble Plain and Rock Soil special-status species. The 4.84 supports 4,895 ashy-gray Indian paintbrush plants and the Dixie Lee Lane site provides 10 acres of high quality Pebble Plain habitat that supports the full suite of Pebble Plain endemics, including ashy-gray Indian paintbrush and the two indicator plant species, Bear Valley sandwort and southern mountain buckwheat.

Special-Status Wildlife Species

Surveys were also conducted for several special-status wildlife species. Surveys for southern rubber boa

(*Charina bottae umbratica*), California spotted owl (*Strix occidentalis occidentalis*), San Bernardino flying squirrel (*Glaucomys sabrinus californius*), and southwestern willow flycatcher (*Empidonax traillii extimus*). Several surveys conducted of the project site over the last 20 years for these species. None of the special-status species have been observed on the project site.

The rocky outcrops needed by southern rubber boa for hibernation and breeding do not occur onsite. Combined with the fact that there are no records of southern rubber boa in the area, support Dr. Glenn Stewart's conclusion in 2007 that the Moon Camp project site has poor quality SRB habitat and the species does not occur on the site.

Surveys for southwestern willow flycatcher (SWWF) were also negative and the USFWS approved SWWF biologists concluded that the shoreline habitat found on the project did not contain suitable territorial or breeding habitat sufficient to support the species. SWWF can be presumed absent.

All focused surveys for California spotted owl were negative. United States Forest Service (USFS) records for this species shows that there are no known California spotted owl nests, home range or activity centers on the Moon Camp site. California spotted owl can be presumed absent.

Several surveys have been conducted for San Bernardino flying squirrel (SBFS) over the past twenty years. To date, SBFS has not been captured on the Moon Camp site. SBFS can be presumed absent.

Conservation Areas

Both the onsite and offsite areas proposed for conservation have been identified and should be formally established as conservation areas and managed in perpetuity through the following mechanisms:

- Recording a Conservation Easement with San Bernardino County that recognizes that the site has been set aside for the long-term management of Ashy-gray Indian Paintbrush (paintbrush) habitat;
- Development of a long-term management plan (LTMP) that will provide for the preservation, restoration and enhancement of the conservation areas so that each site is restored and/or enhanced, where needed, to its natural condition and permanently preserved as conservation property. The LTMP will also include documentation of baseline conditions, any needed site preparation, anticipated restoration/enhancement activities, a biological monitoring program, the creation of a set of success criteria for managing the site, anticipated maintenance activities, an annual reporting process, and a set of contingency or adaptive management measures to be implemented in case success criteria are not being met;
- To ensure that the implementation of the LTMP is fully funded, a PAR will be prepared that will document costs for site security, maintenance activities, site preparation, restoration/enhancements activities, biological monitoring, contingency measure and annual reporting. The costs identified in the PAR will be used to develop a non-wasting endowment that will ensure all costs will be available to establish the site, conduct any needed restoration and enhancements, and to fund reoccurring annual cost needed to manage the site in perpetuity.
- A CDFW approved conservation management entity will be selected to assume management responsibilities for both conservation areas. It is expected that the selected entity will manage

the endowment.

Please do not hesitate to contact Tom McGill at (951) 285-6014 or tmcgill@elmtconsulting.com should you have any questions regarding this biological database technical review.

Sincerely,



Thomas J. McGill, Ph.D.
Managing Director

Attachments:

- A. Ashy-gray Indian Paintbrush – Impacts and Conservation
- B. Exhibit 2-2: Occupied Ashy-gray Indian Paintbrush Habitat

Attachment A

Table 1: Ashy-gray Indian Paintbrush Impacts and Conservation

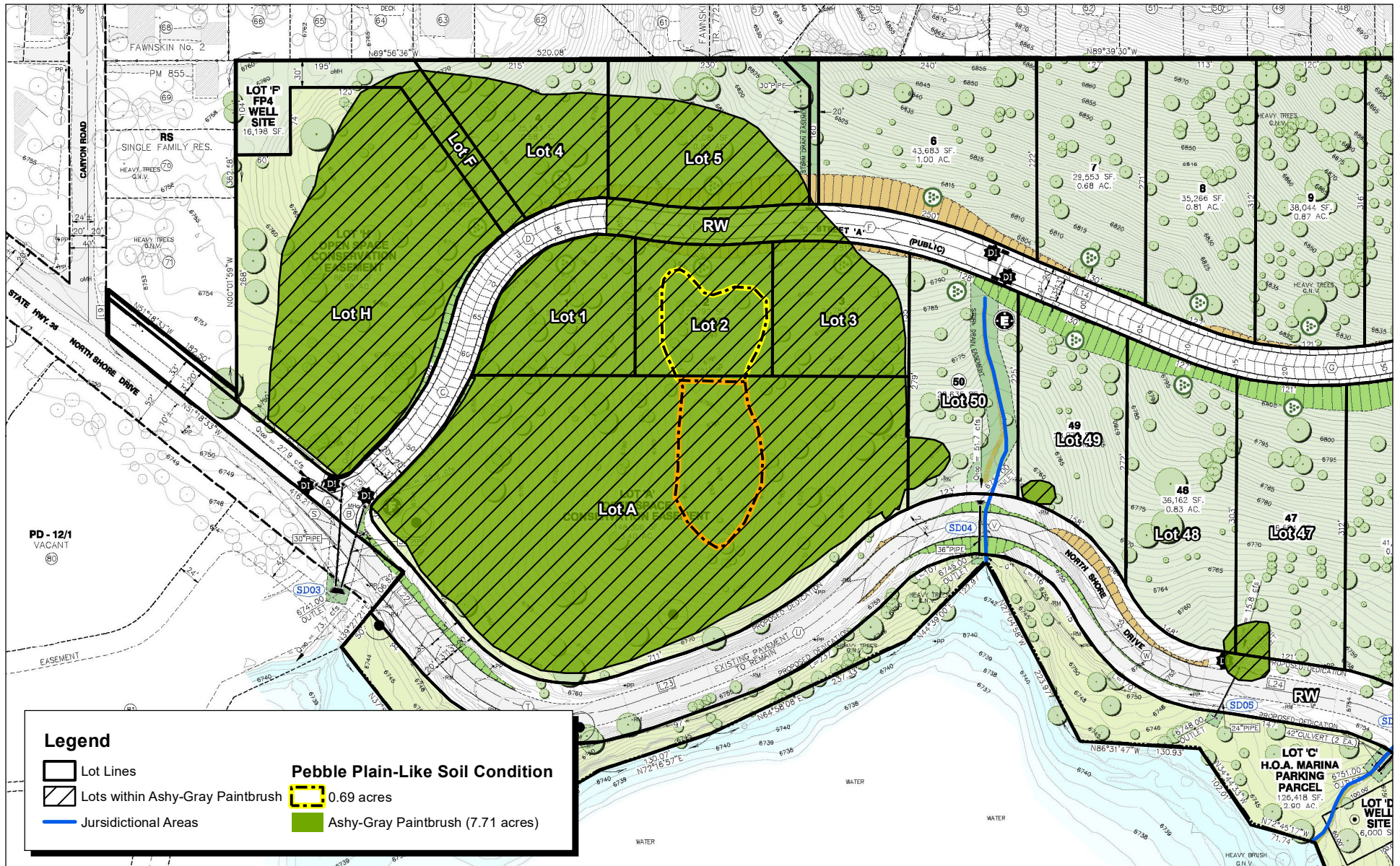
Table 1: Ashy-Gray Indian Paintbrush – Impacts and Conservation

Lot Designation	Habitat (acres)	Number of Plants	Impacts		Conservation	
			Acres	Individual Plants	Acres	Individual Plants
Lot H/A	4.84	4,895	–	–	4.84	4,895
Roadway	0.5	40	0.5	40	–	–
Lot F	0.14	80	0.14	80	–	–
Lots 1-5	2.00	490	2.00	490	–	–
Lot 47/48	0.11	40	0.11	50	–	–
Lot 49	0.01	9	0.01	9	–	–
Lot 50	0.11	3	0.11	3	–	–
Dixie Lee Lane	–	–	–	–	10.0	21
Totals	7.17	5,567	2.87	672	14.48	4,916

*Dixie Lee Lane is an offsite conservation area and was not included in the totals for onsite Ashy-gray Indian Paintbrush habitat and plant numbers or impact calculations.

Attachment B

Exhibit 2-2: Occupied Ashy-gray Indian Paintbrush Habitat



Source: Hicks and Hartwick, Inc.



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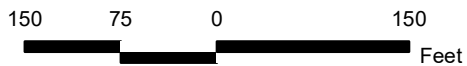


Exhibit 2-2 Occupied Ashy-Gray Indian Paintbrush Habitat

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MOON CAMP RESIDENTIAL SUBDIVISION PROJECT