



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Folsom Field Office
63 Natoma Street
Folsom, CA 95630
www.blm.gov/ca/folsom

Construction and Maintenance of a Fuels Break at the Cameron Park unit of the Pine Hill Preserve, El Dorado County, California. (CA-180-09-03)

Decision Record

November 2008

1.0 Introduction and Background

The Pine Hill Preserve (Preserve) was established in 2001 to ensure that habitat for eight rare plant species, growing on gabbro soils at western El Dorado County (EDC), would be protected from factors threatening survival and recovery of the rare plants. Currently, the Preserve provides protection and management for 4,122 acres of rare plant habitat within five non-contiguous sites or units, and 3,234 of these acres overlap with a 5,001-acre area designated by the US Fish and Wildlife Service (FWS) as necessary for the recovery of five federally listed species. Management activities at the Preserve are steered by a Cooperative Management Agreement (CMA) among nine federal, State and local agencies and one private non-profit organization. Land ownership within Preserve lands includes federal, State and local agencies. The Bureau of Land Management (BLM) owns 3,284 acres of the Preserve lands and is responsible for coordinating implementation of management activities over all Preserve lands.

Constructing and maintaining a fuels break at the Cameron Park unit, one of five units at the Preserve, using mechanical methods will help to decrease competition between dense shrub/tree stands and the rare plants. It will also ameliorate the high risk of non-controlled high-intensity fire events that may be detrimental to the rare plants. Using mechanical methods as a fire surrogate to reduce fuels loads at the Preserve is a preferable option to manage habitat for the rare plants, especially in areas adjacent to human development where the use of prescribed fire presents risk for human lives and property. Construction and maintenance of the fuels break will provide for adequate access to Preserve lands and defensible space in the event of fire occurrence. Most BLM parcels at the Preserve, including the ones that conform the Cameron Park unit, contain special resource values that will be protected and enhanced by implementing the proposed action.

An Environmental Assessment (EA) document for this project was available for a 27-day public comment period. Based on information in the EA, the project record, recommendations from BLM specialists, and coordination with the Fish and Wildlife Service (FWS), the following constitutes my decision on the finalization and implementation of the Construction and Maintenance of a Fuels Break at the Cameron Preserve.

2.0 Decision

2.1 Alternative Considered but not Selected

The No Action alternative was considered but not selected. Under this alternative, the BLM-administered lands in the Preserve would not construct and maintain a fuels break at the Cameron Park unit of the Preserve. This No Action would not provide for the protection of the rare plants, their habitat, or the adjacent private property. The No Action would maintain excessive fuels load concerns at unfavorable current levels and conditions. Therefore, it was not selected.

2.2 Decision and Rationale

Based on information in the EA, the project record, consultation with my staff and results from the public review process, I have decided to approve implementation of the Construction and Maintenance of a Fuels Break at the Cameron Park unit of the Preserve.

3.0 Consultation and Coordination

The proposed action will help to fulfill the Preserve's mission to conserve in perpetuity the rare plant species and plant communities of the western EDC gabbro soil formation, including five species that are federally listed. However, there may be occasions when temporary damage to these species may result from creating and maintaining the fuel break line. In order to avoid, minimize and/or mitigate for potential impacts on Threatened and Endangered species, the BLM will implement the conservation measures for this project described in the FWS Biological Opinion 81240-2008-F-1588-1. The potential impacts will be to a level of significance acceptable to result in the long term benefit of these species and their habitats.

4.0 Public Involvement

The EA for this project was available for a 27-day public comment period in October and November 2008 as posted on Folsom Field Office's internet website. No public comments were received.

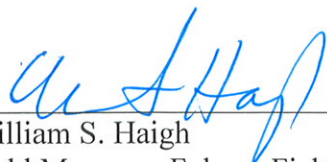
5.0 Plan Consistency

Based on information in the EA, the project record, and recommendations from BLM specialists, I conclude that this decision is consistent with the 2008 Sierra RMP, the Endangered Species Act, the Native American Religious Freedom Act, other cultural resource management laws and regulations, Executive Order 12898 regarding Environmental Justice, and Executive Order 13212 regarding potential adverse impacts to energy development, production, supply and/or distribution.

6.0 Administrative Remedies

Administrative remedies may be available to those who believe they will be adversely affected by this decision. Appeals may be made to the Office of Hearings and Appeals, Office of the Secretary, U.S. Department of Interior, Board of Land Appeals (Board) in strict compliance with the regulations in 43 CFR Part 4. Notices of appeal must be filed in this office within 30 days after publication of this decision. If a notice of appeal does not include a statement of reasons, such statement must be filed with this office and the Board within 30 days after the notice of appeal is filed. The notice of appeal and any statement of reasons, written arguments, or briefs must also be served upon the Regional Solicitor, Pacific Southwest Region, U.S. Department of Interior, 2800 Cottage Way, E-1712, Sacramento, CA 95825.

The effective date of this decision (and the date initiating the appeal period) will be the date this notice of decision is posted on BLM's (Folsom Field Office) internet website.



William S. Haigh
Field Manager, Folsom Field Office

11-17-08
Date



United States Department of the Interior



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Pine Hill Preserve Management Plan (CA-180-09-03) Finding of No Significant Impact October 2008

On the basis of the Construction and Maintenance of a Fuel Brake (Project) within the Cameron Park unit of the Pine Hill Preserve (Preserve) Environmental Assessment (EA), the recommendations from the Bureau of Land Management (BLM) staff, the US Fish and Wildlife Service Biological Opinion 81240-2008-F-1588-1 (Opinion), and public comments regarding the EA, it is my finding that implementation of the Project will not result in significant impacts to the quality of the human environment. Anticipated impacts are also within the range of impacts addressed by the Sierra Resource Management Plan (RMP). Thus, the Project does not constitute a major federal action having a significant effect on the human environment; therefore an environmental impact statement (EIS) is not necessary and will not be prepared. This conclusion is based on my consideration of Council on Environmental Quality's following criteria for significance (40 CFR §1508.27), regarding the context and intensity of the impacts described in the EA and based on my understanding of the project:

1) Impacts can be both beneficial and adverse and a significant effect may exist regardless of the perceived balance of effects. No significant adverse impacts (site specific or cumulative) have been identified by implementation of management actions for this Project as described in the Opinion. Potential temporary impacts include vegetation removal to reduce excessive amounts of fuels load. However, this impact would not be adversely significant at the local scale or cumulatively because of the design features that would reduce the possibility of wildfire occurrences and enhance habitat for rare plants at the Preserve. Visual resources will not be impacted on a long term basis.

2) The degree of the impact on public health or safety. No aspects of the Project have been identified as having the potential to significantly and adversely impact public health or safety. In fact, the Project is designed to enhance public health and safety by managing natural habitat areas for passive recreation and active education, protecting the natural environment, and managing fuels loads to reduce the possibility of non-controlled fire events.

3) Unique characteristics of the geographic area. The Preserve is located on gabbroic soils. This unique soil formation, coupled with the topography and climate of the area, provides for habitat of more than 700 species of native plants, including five that are federally and State protected. The number of native plants in the area represents 10% of the total number of native plants growing in California. Several rare plants grow in the Preserve area, including four that are found nowhere else in the world. Implementation of the Project will aid to enhance and maintain the unique characteristics of the area.

4) The degree to which the effects on the quality of the human environment are likely to be highly controversial effects. No anticipated effects have been identified that are likely to be highly controversial. As a factor for determining within the meaning of 40 C.F.R. § 1508.27(b)(4) whether or not to prepare a detailed environmental impact statement, "controversy" is not equated with "the existence of opposition to a use." *Northwest Environmental Defense Center v. Bonneville Power*

Administration, 117 F.3d 1520, 1536 (9th Cir. 1997). “The term ‘highly controversial’ refers to instances in which ‘a substantial dispute exists as to the size, nature, or effect of the major federal action rather than the mere existence of opposition to a use.’” *Hells Canyon Preservation Council v. Jacoby*, 9 F.Supp.2d 1216, 1242 (D. Or. 1998).

5) *The degree to which the possible effects on the human environment are likely to be highly uncertain or involve unique or unknown risks.* BLM has a lot experience doing similar fuels projects, including in the Pine Hill Preserve. There will be no highly uncertain, unique, or unknown risks.


6) *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.* The Project is not precedent setting. This is one of several management actions conducted by the BLM Folsom Field Office that is designed to provide for a multitude of uses, including the protection and management of natural habitats and federally listed species, and also complies with the Sierra RMP.

7) *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.* No significant site specific or cumulative impacts have been identified. The Project is consistent with the actions and impacts anticipated in the Sierra RMP.

8) *The degree to which the action may adversely affect National Historic Register listed or eligible to be listed sites or may cause loss or destruction of significant scientific, cultural or historical resources.* The project area contains one cultural resource—a segment of mining ditch believed to be the Park Canal. This resource has not been evaluated to determine whether it is eligible for the National Register of Historic Places because it will not be affected. The ditch will be avoided.

9) *The degree to which the action may adversely affect Endangered Species Act listed species or critical habitat.* The mission of the Preserve is to conserve in perpetuity the rare plant species and plant communities of the western El Dorado county gabbro soil formation. Because implementation of the Project includes coordination of management activities with federal, State and local agencies, conservation organizations and private landowners to fulfill the mission of the Preserve, all fuels reduction activities are designed to the recovery of federally listed species and conservation of other rare plants. Specific actions for this project have been subject to Sec. 7 consultation and proposed conservation measures are listed in the Opinion.

10) *Whether the action threatens a violation of environmental protection law or requirements.* There is no indication that this decision will result in actions that will threaten such a violation.



William S. Haigh
Field Manager, Folsom Field Office

11-17-08

Date

ENVIRONMENTAL ASSESSMENT COVER SHEET

EA Roster Number: CA-180-09-03

TYPE OF EA

Application(s) (Non-BLM)

Standard MAD

BLM Proposal(s)

Programmatic

Type of Application(s) or Proposals(s):

Environmental Assessment for the Construction and Maintenance of a Fuels Break at the Cameron Park unit of the Pine Hill Preserve, El Dorado County (EDC), California.

Assessment Title:

Environmental Assessment for the Construction and Maintenance of a Fuels Break at the Cameron Park unit of the Pine Hill Preserve, El Dorado County (EDC), California.

Legal Description:

T. 10N, R. 9E, section 34,

T. 9N, R. 9E, section 2, and section 3 NE1/4

County:

El Dorado County

Planning Unit and Management Area:

BLM's 2008 Sierra Resource Management Plan

Pine Hill Preserve Management Plan

Prepared By:

Folsom Field Office Staff



United States Department of the Interior



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EA Number: CA-180-09-03

Proposed Action: Construction and Maintenance of a Fuels Break at the Cameron Park unit of the Pine Hill Preserve (Preserve), El Dorado County (EDC), California.

Location: The 4, 122-acre Preserve, managed by the Bureau of Land Management (BLM), is located in the central Sierra foothills in western El Dorado County (EDC), north of Highway 50 and southeast of Folsom Lake, approximately 30 miles east of Sacramento (figure 1). The 454-acre Cameron Park unit is one of five units that comprise the Preserve system. The Cameron Park unit is located in portions of and in portions of Sections 2 and 3 of T9N, R9E and Section 34 of the Mount Diablo Base and Meridian.

1.0 Purpose of and Need for Action

The purpose of constructing and maintaining a fuel break at the Cameron Park unit is to help fulfill the Preserve's mission to conserve in perpetuity the rare plant species and plant communities of the western EDC gabbro soil formation. The Preserve was established to protect habitat for eight rare plants, including five that are federally listed as Endangered and/or Threatened (T&E). The rare plants and their habitat have evolved with the occurrence of fire events; however, human influences and the changes in climate have altered natural fire regimes that are beneficial for the rare plants. Currently, the excessive accumulation of fuel loads not only threatens the existence of the rare plants in the Preserve lands, but also increases the risk of non-controlled high intensity fire events that may affect human lives and property in areas adjacent to the Preserve.

Constructing and maintaining a fuel break at the Cameron Park unit using mechanical methods will help to decrease competition between dense shrub/tree stands and the rare plants. It will also ameliorate the high risk of non-controlled high-intensity fire events that may be detrimental to the rare plants. Using mechanical methods as a fire surrogate to reduce fuels loads at the Preserve is a preferable option to manage habitat for the rare plants, especially in areas adjacent to human development where the use of prescribed fire presents risk for human lives and property. Construction and maintenance of the fuel break will provide adequate access to Preserve lands and defensible space in the event of fire occurrence. Implementation of the proposed action at the Cameron Park unit will

allow for evaluation of impacts of fuels reduction on the rare plants and will help guide future management decisions to benefit the rare plants at other Preserve units. BLM parcels at the Preserve contain special resource values that will be protected and enhanced by implementing the proposed action.

Because of the presence of rare plants and/or gabbro soils vegetation type habitats at all BLM owned Preserve parcels, these parcels require special management to ensure conservation and recovery for these species. Implementation of fuels reduction and modification practices, including the proposed action, on BLM lands may also serve as a guide for management of adjacent public and privately owned lands within the gabbro soil formation.

1.1. Conformance with Applicable Land Use Plans

The proposed action is consistent with the BLM's 2008 Sierra Resource Management Plan (SRMP) management actions for Areas of Critical Environmental Concern (ACECs) described in page 38 of the SRMP and Record of Decision, approved February 2008. The proposed action is also consistent with management actions described in the Management Issues and Strategies section of the BLM's 2008 Pine Hill Preserve Management Plan. The proposed action conforms to actions and rare plant conservation measures used during previous fuels reduction projects implemented at the Cameron Park unit, and included in BLM's Environmental Analysis CA-180-04-14. In addition, the proposed action also provides for implementation of recovery actions for four of five federally listed species described in the US Fish and Wildlife Service (FWS) 2002 Recovery Plan for Gabbro Soil Plants of the Central Sierra Nevada Foothills.

1.2 Background Information

The Preserve was established in 2001 to ensure that habitat for eight rare plant species, growing on gabbro soils at western EDC, would be protected from factors threatening survival and recovery of the rare plants. The gabbro intrusion is a unique soil formation in western EDC that supports chaparral, woodland and grassland vegetation types and sustains about 10% of the total California plant diversity. In addition to plant species richness, several special status plant species exist in the habitat types of the gabbro soil formation, including the State and/or federally listed *Calystegia stebbinsii* (Stebbins' morning-glory), *Ceanothus roderickii* (Pine Hill ceanothus), *Galium californicum* ssp. *sierrae* (El Dorado bedstraw), *Fremontodendron californicum* ssp. *decumbens* (Pine Hill flannelbush) and *Packera layneae* (Layne's butterweed), and the rare *Chlorogalum grandiflorum* (Red Hills soaproot), *Helianthemum suffrutescens* (Bisbee Peak rush-rose) and *Wyethia reticulata* (El Dorado mule-ears).

Cooperation among agencies and organizations concerned with protection of the rare plants was formalized on March 1, 2001 with the signing of a Cooperative Management Agreement. On July 18, 2006, after reaching its 5-year term, the Agreement was ratified by the different Cooperative Management parties. This new Agreement will be in effect until July 2011. Participants of the Agreement include nine local, State and federal agencies, including BLM, Bureau of Reclamation (BOR), Cal Fire, FWS, California Department of Fish and Game (CDFG), EDC, El Dorado Irrigation

District, El Dorado County Water Agency and the American River Conservancy (ARC).

Currently, the Preserve provides protection and management for 4,122 acres of rare plant habitat within five non-contiguous units: Cameron Park, Pine Hill, Martel Creek, Penny Lane and Salmon Falls. Of the 4,112 preserved acres 3,234 lie within a FWS 5,001-acre area designated for the recovery of the federally listed rare plants. Reducing fuel loads to enhance habitat for the rare plants and minimize the risk of fire for human lives/property is one of the main issues at the Preserve.

2.0 Proposed Action and Alternatives

2.1 Proposed Action

The BLM proposes to remove shrubs and selected trees within a 100-foot (or less) wide fuel break along the Cameron Park unit boundaries, in areas adjacent to urban development. The BLM will utilize a combination of 10-20 person fuels handcrews using chainsaws and brush cutters; mechanical mastication and brush chippers. The action will include removal of trees with a diameter at breast height of nine inches or less. In dense timber stands, thinning to crown-spacing of 20 feet by 20 feet will take place when appropriate. Dense chaparral brush will be reduced.

In areas where rare plants are absent and density of shrubs is high, the BLM proposes to use a masticator to cut and grind shrubs to create a fuel break. The mechanical masticator is a rubber tracked, skid-steered grinder and will drive in the fuel break buffer zone. Mechanical masticator is six feet wide and will not heavily impact soil compression (four pounds per square inch); the chipper is also six feet wide with limited compaction effects (two pounds per square inch).

In areas where rare plants are present, and access is difficult due to adjacent areas with high densities of shrubs, the masticator will be used to create a 6-foot wide line to allow access for hand crews and chipping equipment to conduct vegetation removal. The masticator will maneuver through the proposed fuels break zone to avoid patches of rare plants and, wherever possible, individual rare plants. Once the access line is constructed, crews will use chainsaws and hand tools to remove the shrub layer and selected branches of trees. A chipper will be used to reduce size of cut materials and promote faster decomposition and integration to the habitat. Herbaceous plants will be undisturbed. Rare plants present in areas where these activities will be conducted will be marked; crews will be trained to recognize rare species and avoid them.

In areas where individual rare plants cannot be avoided, there may be short-term impact upon those individuals. Potential impacts may be minimized by conducting masticator activities when plants are in dormancy because most of the rare plants die back to the root stock during the fall and winter months.

The implementation of the Preserve fire break project at Cameron Park will take place during the spring and autumn seasons of 2008-2012 as weather permits. Fuels reduction work will be suspended by June 1 or the declared fire season, and will resume when the Fuels Management Specialist deems prudent. After initial treatment, the fuel breaks will be maintained every five to seven years, with an

ideal of three to five years intervals. Maintenance will utilize the techniques of initial treatment at pertinent intensity levels.

The proposed action also includes implementation of conservation measures as described in the attached US Fish and Wildlife Service Biological Opinion 81240-2008-F-1588-1 and seeks for the general public input to refine and/or modify these activities before they are implemented at Preserve lands.

2.2 No Action

Under this alternative, the BLM administered lands in the Preserve's Cameron Park unit would not be treated to reduce fuel loads and construct and maintain a fuel break line. Present levels of management would continue with unaltered fuel loads; no specific protection for the rare plants or their habitat, or for adjacent private property features, would be provided. Management concerns would remain at current levels and conditions.

3.0 Affected Environment

Physical description. The 454-acre Cameron Park unit comprises a 364-acre parcel and a 90-acre parcel in the Cameron Park and Shingle Springs areas, respectively, and north of Highway 50. The BLM and EDC share ownership of the different parcels within the Cameron Park unit, with BLM owning 392 acres and EDC owning 63 acres. The BLM is responsible for managing all parcels within the Cameron Park unit.

Climate and Hydrology. The climate is characterized as Mediterranean with cool wet winters and hot dry summers. Average precipitation and temperature during the last five years are 31 inches per year and 63° F, respectively; the average minimum and maximum temperatures during the past five are 29° F and 113° F. There is one intermittent creek in the Cameron Park unit.

Vegetation. Vegetation at the Cameron Park unit is represented by two main types: Northern Mixed chaparral and Oak/Pine woodland. The majority of the unit is covered with chaparral species. More than 700 species (approximately 10 percent of the native species in California) are represented in the gabbro soils formation in the Preserve area. The Cameron park unit has a high concentration of rare and endangered plants in western EDC. The rare Stebbins' morning glory, Pine Hill ceanothus, Red Hills soaproot, El Dorado bedstraw, Layne's butterweed, Bisbee Peak rush-rose and El Dorado mule-ears are mainly found in the chaparral areas, although they also occur in the woodland areas.

Wildlife Species. Wildlife at the Cameron Park unit includes several species of mammals, birds, reptiles and numerous insects including the different pollinators required for rare plant reproduction. Other organisms such as fungi, soil bacteria, and algae also exist in the Cameron Park unit. The mechanisms for management and conservation of the rare plants depends on a complete and functioning ecosystem; the modification of fuels at the Cameron Park unit will also help protect and manage soil, hydrology and other features that sustain all wildlife species.

Cultural resources. There is no clear pattern of historic land use in the gabbro soils area, although in general more settlement and ranching/farming activities were established in the relatively flat, oak woodlands compared to the chaparral-covered hills although existing records suggest decades of intensive mining in the area beginning during the Gold Rush. For decades, towns like Salmon Falls, Shingle Springs, and Rescue were significant service centers for local miners. Placer and hardrock mining sites occur in the Preserve and adjacent areas. At the Cameron Park unit, a segment of the Park Canal/Diamond Ditch cultural/historic site has been identified in its northwestern portion. Other areas that extend over 70% of the Cameron Park unit have been identified by the BLM to have “extremely low sensitivity for cultural resources (occurrences)”.

Recreation/Visual Resources Management (VRM). The Preserve lands provide for low-impact recreational activities, such as hiking and observation of wildlife. Preserve lands, including the Cameron Park unit, have been identified by the BLM as VRM Class II and, in order to protect and enhance the overall scenic qualities and visual integrity of the characteristic landscapes, management actions in this area should be adapted to 1) retain the existing character of the landscape and 2) ensure the level of change to the characteristic landscape should be low.

4.0 Environmental Effects

The critical elements considered for this environmental assessment are air quality, areas of critical environmental concern (ACEC), prime/unique farmlands, floodplains, invasive and nonnative weeds, cultural resources and Native American concerns, threatened or endangered species, hazardous waste/solid, water quality, wetlands and riparian zones, wild and scenic rivers, wilderness and recreation/VRM.

4.1 Impacts of the Proposed Action and Alternatives

4.1.1 Critical elements that have been determined to be unaffected by the proposal are: prime/unique farmlands, floodplains, cultural resources and Native American concerns, hazardous waste/solid and wild and scenic rivers and wilderness.

The Preserve manages only lands with natural habitat. The gabbro soils and rather steep terrain around the Cameron Park unit has no farmlands or floodplains. The segment of the Park Canal Diamond Ditch will be flagged and avoided during the construction of the fuels break; therefore, it will not be affected by the proposed action. There are no designated wild and scenic rivers or wilderness areas at or in the vicinity of the Cameron Park unit, and there are not current operations that would result in hazardous waste/solid materials at Preserve lands.

4.1.2 Critical elements that have been determined to have a positive impact as a result of the proposed action include air quality, ACEC, water quality, wetland and riparian zones, recreation and VRM.

Air quality. Reducing the amount of fuels will help prevent non-controlled fire events that would affect the air quality in the high Cameron Park area, and area with a high density of homes.

ACEC. Only BLM Preserve lands are included under the Pine Hill ACEC designation. Activities that have potential to cause significant disturbance (i.e., large-scale mining, construction of roads, high-voltage transmission lines, telecommunication towers, etc.) are not allowed or will require careful planning to avoid or to minimize impact to resources. Creation and maintenance of a fuel break will help protect the special features within the Pine Hill ACEC by enhancing habitat for the rare plants and help to prevent non-controlled fire events that may have catastrophic results for the Cameron Park unit and adjacent lands.

Water quality and wetlands and riparian zones. Because the proposed action promotes the protection and management of natural habitat, it would also promote the protection of hydrological features. The creation of the fuels break will prevent the occurrence and/or provide for control of catastrophic fire events that would contribute to soil erosion and deposition of debris in the intermittent creek at the Cameron Park unit. Protecting and managing the natural habitat and the soil will have a positive effect on the watershed and water quality.

Because the proposed action will provide the Preserve with a framework for management activities that will benefit the rare plants and their habitats, the above mentioned critical elements will be protected and/or enhanced as a result of management activities on Preserve lands.

4.1.3 Critical elements that may be negatively affected as a result of the proposed action are invasive and non-native weeds, threatened or endangered species and recreation/VRM. The potential effects on these elements will be temporal and below a level of significance that would result in permanent detrimental effects on the environment.

Invasive and nonnative weeds. Although the gabbro soils are rather poor soils for most species, including some nonnative species, the proposed action may open space for invasive species and nonnative weeds to colonize in new areas. Careful surveys of the treated areas to detect any potential infestations will be conducted for at least three years after the creation of the fuel break line. If an infestation is detected, a rapid control of the invasive species and nonnative weeds will be conducted help to prevent further proliferation and protect the natural habitat for the rare plants.

Threatened and endangered species (T&E). The proposed action will help fulfill the Preserve's mission to conserve in perpetuity the rare plant species and plant communities of the western EDC gabbro soil formation, including the five species that are federally listed; however, there may be occasions when temporary damage to these species may result from creating and maintaining the fuel break line. In order to avoid, minimize and/or mitigate for potential impacts on T&E species, the BLM will implement the conservation measures described in the Biological Opinion 81240-2008-F-1588-1 (attached). Potential impacts will be of a minor level of significance and will allow long-term benefits to these species and their habitats.

Recreation/VRM. Due to the fact that proposed action activities will be conducted along the boundaries of the Cameron Park unit (peripheral areas) and the main trail used by recreationists is located along the middle of the unit, impacts on recreation activities by the proposed action will be non-existent or minimal. The visual results from vegetation removal due to the proposed action will be temporary. Also, because the results of the proposed action (reduction of fuels using mechanic methods) will provide similar results than those achieved through natural dynamics (reduction of fuels by natural fire regimes), the overall scenic qualities and visual integrity of the characteristic landscapes at the Cameron Park unit will ultimately be enhanced.

4.2 Impacts of the No Action Alternative

If the project were not conducted, there would be no impacts to: prime/unique farmlands, floodplains, cultural resources and Native American concerns, hazardous waste/solid, and wild and scenic rivers and wilderness. If the project were not conducted, there could be long-term negative impacts regarding areas of critical environmental concern (ACEC), environmental justice, invasive and nonnative weeds, water quality, threatened or endangered species and wetlands and riparian zones. The implementation of fuels reduction projects at the Preserve, including constructing and maintaining a fuel break line at the Cameron Park unit will benefit the rare plants and their habitats, and help prevent potential catastrophic fire events that may affect human property and lives.

4.3 Cumulative Impacts

Because there are no long term site specific adverse impacts expected for air quality, areas of critical environmental concern (ACEC), environmental justice, prime/unique farmlands, floodplains, invasive and nonnative weeds, cultural resources and Native American concerns, threatened or endangered species, hazardous waste/solid, water quality, wetlands and riparian zones, wild and scenic rivers, and wilderness, no cumulative impacts are expected.

5.0 Agencies and Persons Consulted

The following persons and agencies participated in the development of the EA documents.

5.1 BLM Interdisciplinary Team (EA documents)

- James Barnes- Cultural Resources
- Peggy Cranston-Wildlife Biologist
- Graciela Hinshaw-Preserve Manager, Botanist
- Jeff Horn, Outdoor Recreation Planner
- Brian Mulhollen-Fuels Management Specialist

James Barnes 10/27/08
Peggy Cranston 10/17/08
Graciela Hinshaw 10/18/08
Jeff Horn 10/17/08
Brian Mulhollen

5.2 Other Personnel, Agencies and Organizations (Biological Opinion)

- Jeremiah Karuzas, Fish and Wildlife Service

- Chris Nagano, Fish and Wildlife Service

5.3 Availability of Document and Comment Procedures

The EA, posted on Folsom Field Office's website (www.blm.gov/ca/folsom) under Information, NEPA (or available upon request), will be available for a 15-day public review period. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. Comments should be sent to the BLM-Pine Hill Preserve at 63 Natoma Street, Folsom, CA 95630 or emailed to Graciela_Hinshaw@ca.blm.gov.

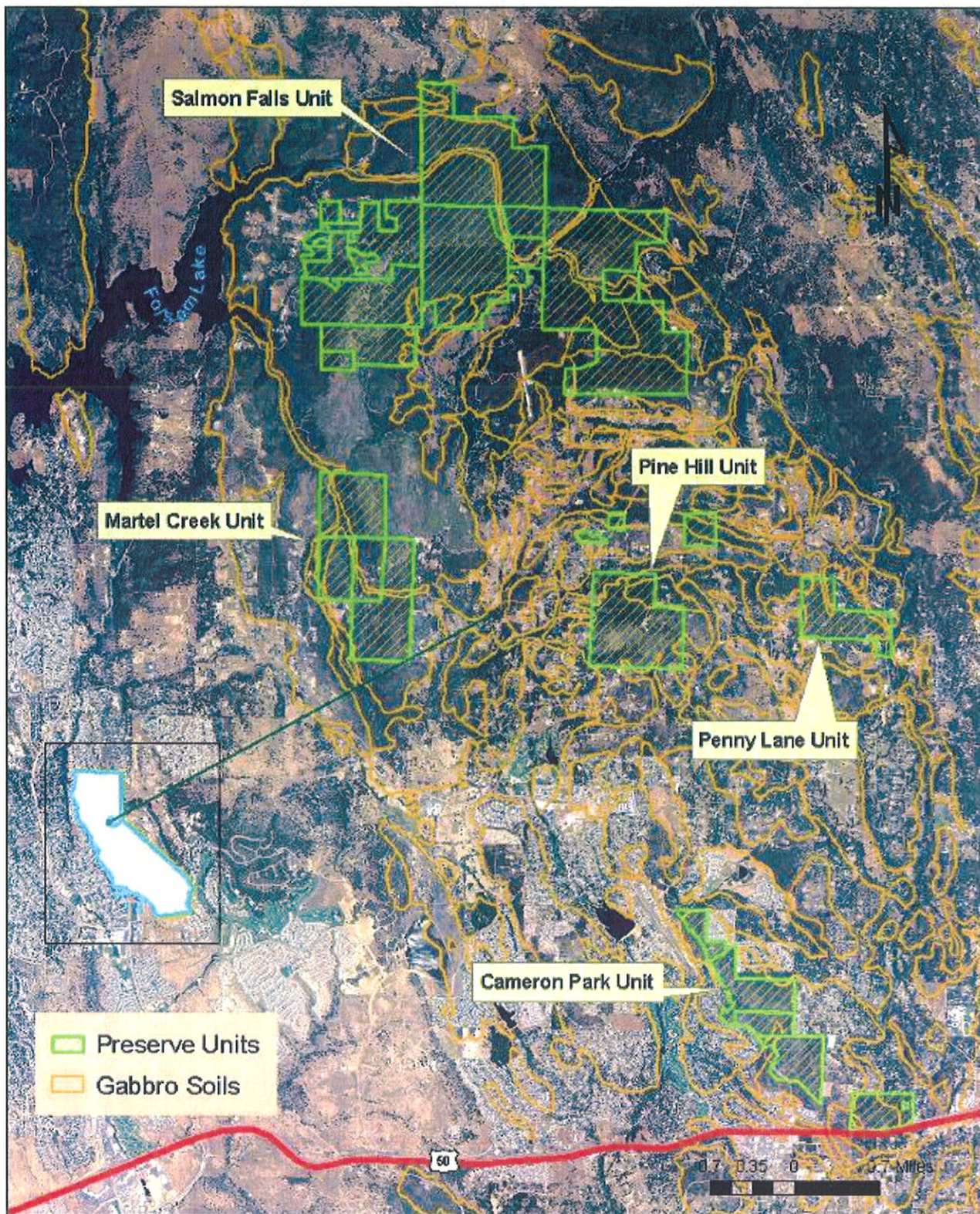


Figure 1. Map of Pine Hill Preserve



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846



In Reply Refer To:
81240-2008-F-1588-1

SEP 16 2008



Memorandum

To: Field Manager, Folsom Field Office, Bureau of Land Management (BLM),
Folsom, California

From: FOL Acting Field Supervisor, Sacramento Fish and Wildlife Office, Sacramento,
California *Chif Noyan*

Subject: Formal Consultation on the Construction and Maintenance of a Fuel Break within
the Cameron Park Unit of the Pine Hill Preserve, El Dorado County, California

This is in response to your May 29, 2008, letter and supporting documentation requesting formal consultation for the Bureau of Land Management's (BLM) proposed project to construct and maintain a fuel break within the Cameron Park Unit of the Pine Hill Preserve, El Dorado County, California. Your request was received by the U.S. Fish and Wildlife Service (Service) on May 30, 2008. In accordance with section 7 of the Endangered Species Act of 1973, as amended (Act), this document represents the Service's biological opinion of the effects of the proposed action on the on the endangered Stebbins morning glory (*Calystegia stebbinsii*), Pine Hill ceanothus (*Ceanothus roderickii*), El Dorado bedstraw (*Galium californicum* ssp. *sierrae*), and the threatened Layne's butterweed (*Packera layneae*), plants found on gabbro-derived soils.

The Folsom Field Office of Bureau of Land Management is responsible for managing the 4,122 acre Pine Hill Preserve and, as such, is responsible for the creation of fire breaks throughout these areas to help prevent the loss of property in the event of a wildfire. The Service previously issued a biological opinion on September 18, 2001, for the construction of a 6-acre fuel break along a portion of the Cameron Park Unit of the Pine Hill Preserve (Service file 1-1-01-F-0219) which addressed the effects of the project on federally listed gabbro plants. Since then, the Bureau of Land Management has initiated formal consultation a total of five times to address additional effects of the Cameron Park Fuels Reduction Project, including an increase in treatment area to 25 acres (Service files 1-1-03-F-0029, 1-1-04-F-0048, 1-1-04-F-0178, 1-1-05-F-0012, and 1-1-07-F-0189). Because it is our understanding that fuel breaks will be constructed throughout much of the preserve area, the Service requested that the BLM enter into consultation with the Service on the construction of fuel breaks throughout the entire preserve system rather than on a project-by-project basis.

While this biological opinion does not address fuels reduction projects throughout the entire Pine Hill Preserve, the Service anticipates entering into consultation with BLM within the next six months to address the affects that the proposed Pine Hill Preserve Management Plan may have on listed species. Therefore, the Service has determined that it would be more appropriate to



address the creation and maintenance of fire breaks within the Pine Hill Preserve system, as a whole, as part of a programmatic consultation on the Pine Hill Preserve Management Plan. However, because the BLM is proposing to begin construction of fire breaks along the boundaries of the Cameron Park Unit prior to initiating consultation on the Management Plan, it is necessary to address the effects of this proposed fire break construction prior to the issuance of a programmatic opinion.

Our analysis of potential effects from the proposed project on these listed plants is based on: (1) the May 29, 2008 request for consultation; (2) the May 29, 2008, *Biological Assessment: Pine Hill Preserve-Cameron Park Unit Fuels Reduction*; (3) electronic communication between Graciela Hinshaw of BLM and the Service; (4) meetings and phone conversations between our staff; and (5) other information available to the Service.

Consultation History

- September 6, 2007. Meeting between the Service and BLM to discuss fuels reduction projects within the Cameron Park Unit of the Pine Hill Preserve.
- April 30, 2008. Email correspondence from Graciela Hinshaw of BLM providing the Service the draft Biological Assessment for review and comment.
- May 12, 2008. The Service provided comments on the Draft Biological Assessment.
- May 29, 2008. Meeting between the BLM and the Service discussing the proposed fuels reduction project.
- May 30, 2008. Letter from the BLM to the Service initiating formal consultation.
- July 24, 2008. Meeting between the BLM and the Service discussing the proposed fuels reduction project.

BIOLOGICAL OPINION

Description of the Proposed Action

The Folsom Field Office of the Bureau of Land Management is proposing to create a fuel break through the removal of selected shrubs and tree branches along the boundary of the Cameron Park Unit of the Pine Hill Preserve. The fuel break will be in areas adjacent to residential development, where dense and decadent chaparral plants create a fuel profile that could put adjacent homes at risk in the event of a wildfire. The purpose of the fuel break is to reduce wildfire risk for surrounding community of Cameron Park with the goals of protecting life and property, increasing public safety, allowing for fuels reduction in the future, and improve habitat for listed plant species. The Pine Hill Preserve is considered a gabbro plant community which is commonly associated with the Rescue soil series (very stony loam to extremely stony loam). These soils are shallow (surface soil 3 to 8 inches thick), well drained, and characterized by

numerous rock outcrops. The vegetation community in the project area is predominantly northern mixed chaparral interspersed with pine/oak woodland and is located west of Cameron Park Drive, north of Highway 50, and east of Ponderosa Road, in the community of Cameron Park, California.

The fuel break will be established by thinning the woody vegetation on lands managed by the BLM along the boundary of the Cameron Park Unit. The initial thinning work will be conducted during the fall and spring seasons from 2008 through 2012. Additional fuel break maintenance will be conducted starting in early fall and extending into early summer and will occur every three to seven years, utilizing the same techniques used for the initial treatment, but at lesser intensity levels.

The fuels reduction will be implemented by forestry technicians closely supervised by BLM Fuels Management Specialist, the Preserve Manager and other trained staff. Work will be conducted using an approximately twenty-person hand crew and chainsaws, mechanical mastication, and brush chippers. The fuel break will have a width of up to 100 feet, with the actual treatment area being approximately 67 acres, which includes areas previously consulted on. The majority of woody plants more than two feet in height will be cut at their bases with the oversight of a botanist to prevent accidental cutting and trampling of listed plants. The action will include removal of trees with a diameter at breast height of nine inches or less. In dense timber stands, thinning to crown-spacing of 20 feet by 20 feet will take place when appropriate. Dense chaparral brush will be reduced. Some trees and shrubs will be retained for aesthetic value and to provide vegetation structure for wildlife habitat. The cut shrubs and limbs will be dragged directly to brush chippers for processing. Chippers will be located on-site and the chips will be dispersed within the fuel break.

In areas where rare plants are absent and density of shrubs is high, the BLM proposes to use a masticator to cut and grind shrubs and create the fuel break. The mechanical masticator is a rubber tracked, skid-steered grinder and will drive in the fuel break buffer zone. Mechanical masticator is six feet wide and will not heavily impact soil compression (four pounds per square inch); the chipper is also six feet wide with limited compaction effects (two pounds per square inch).

In areas where rare plants are present, and access is difficult due to adjacent areas with high densities of shrubs, the masticator will be used to create a 6-foot wide path to allow access of hand crews and chipping equipment to conduct vegetation removal. The masticator will maneuver through the proposed fuel break zone to avoid patches of rare plants and, wherever possible, individual rare plants. Once the access line is constructed, crews will use chainsaws and hand tools to remove the shrub layer and selected branches of trees. A chipper will be used to reduce size of cut materials and promote faster decomposition and integration to the habitat. Herbs will be left undisturbed.

Additionally, in order to assess whether the reduction of fuels allows for greater vigor of listed plants, the BLM is proposing to monitor plant recruitment and/or growth after treatment. The BLM is proposing to establish permanent monitoring plots in treatment areas prior to fuels

reduction activities to obtain baseline data of the habitat and listed plants. The study areas will be monitored to track changes and trends over time.

Conservation Measures

In order to reduce the effects of the proposed project on listed plant species, the BLM is proposing the following conservation measures:

1. Prior to vegetation removal, the preserve manager, BLM botanists, and other trained staff will survey the treatment area and flag rare plant populations.
2. In areas of the project that support listed plants, pre-designated areas for the masticator pathway, temporary debris piles, and chipper equipment placement will be flagged and mapped. These areas will also be flagged (and reflagged as necessary) to identify and avoid the rare plants.
3. Preserve staff will conduct a worker-awareness program for all personnel on the work crews. The program will include plant identification (including recognition of the federally listed and BLM Sensitive Species), standard avoidance measures, proper conduct with tools and fuel, and reporting requirements.
4. The width of the proposed project area will be adjusted, as needed, to avoid all patches of rare plants and, wherever possible, individual rare plants. Rare plants will be identified by flagging them.
5. Treatment with chipper/masticator will result in dispersal of ground litter. The ground litter will not exceed three inches and will help prevent erosion of the soil. No deposition of cut debris will be directed to cover patches of existing rare plants.
6. Preserve and/or BLM staff will be on site daily to monitor avoiding/minimizing impacts to listed plant species.
7. Crews will remain on existing trails or the masticator pathway while accessing areas where fuels reduction will be conducted. When neighboring landowners allow, and when practical, access to the proposed fuels reduction area and placement of equipment (chipper, masticator) will be done through and on private property.
8. Vehicles and equipment will be cleaned prior to entry to the Preserve to reduce exotic seed spread.
9. The season after an area has been treated and during the following two years, the area will be surveyed for noxious weeds. Hand-pulling or string trimmers will be used to combat any new infestations of noxious weeds (including yellow star-thistle) resulting from this project. If these methods prove ineffective and herbicides are deemed necessary to combat noxious weed introductions, BLM will consult with FWS before any herbicides are applied.

10. Fueling and refueling of equipment will be done in areas away from rare plant locations and conducted in a manner to avoid spilling oil and gas directly onto soil.
11. Fuel containers will be kept clean and will be checked to ensure they are leak free. Fuel containers will be placed on top of a plastic sheeting (such as garbage bags), and fueling will be conducted on the plastic. Rags will be kept with fuel for cleanup. If fuel spills on the plastic, rags will be used to absorb the fuel, to keep the fuel out of contact with the soil surface.
12. All trash will be removed from the site.
13. A Monitoring Plan will be written to determine effects of vegetation clearing on the rare plants. The plan will be submitted to the Service for review prior to implementation.
14. BLM will report study and survey results to the Service.

Action Area

The action area for the proposed fuels reduction project includes all lands within the Cameron Park Unit of the Pine Hill Preserve as well as private lands adjacent to the preserve along Jackie Lane. The action area is documented as a gabbro soils formation; therefore, all of the species listed in this biological opinion have the potential to occur here.

Status of the Species

Stebbins' morning glory

The Stebbins' morning glory is a leafy perennial herb in the morning-glory family (Convolvulaceae). Its stems range up to 3.28 feet in length and generally lie flat on the ground. White flowers, which appear in May through June, are on stalks 1 to 5 inches long and bear two leaf-like bracts. The fruit is a slender capsule. Its distinctively shaped leaves, each having 7 to 9 narrow lance-shaped lobes, distinguish the Stebbins' morning glory from other California morning-glories (Service 2002).

Stebbins' morning glory does not occur beneath a closed canopy of vegetation, suggesting that the species is shade intolerant (Baad and Hanna 1987). Although an above-ground shoot may appear in the same spot for only several years, other portions of this plant's extensive root system might survive much longer. Observations indicate that Stebbins' morning glory is pollinated by insects, primarily Hymenoptera, with Halictidae (solitary bees) and Apidae (honey bees) being the most important families (Nosal 1997). Average plant density at three sites ranged from 0.10 to 1.1 plants per square foot; average seed set ranged from 1.9 to 35.3 seeds per square foot.

The Stebbins' morning glory is a fire-adapted species, requiring disturbance and/or fire for recruitment of seedlings and germination of seeds (Service 2002). Plants emerge from a dormant

seed bank or rootstock after fire or other disturbance. Fire is an essential component of the species' ecosystem and is therefore important for the species' persistence within the ecosystem. Extirpation of populations in the ecosystem is likely to occur from fire intervals that are too long or too short. The species' response to wet season versus dry season burns has not been quantified; however, many chaparral species are dependent of dry season burns for optimal germination.

Habitats adjacent to development may be negatively affected by "edge effects" emanating from neighboring properties, such as drift of household herbicides and insecticides, the need to maintain fire breaks, and the proliferation of unmanaged trail networks. Research also indicates that habitat fragmentation can result in the loss of ecosystem functions, such as pollination and seed dispersal, and reduced biodiversity, including the local disappearance of some plant species (Damschen *et al.* 2006).

Habitat loss, habitat fragmentation, alteration of natural fire regime, and suppression of disturbance (all mainly due to urbanization) were the major threats leading to the listing of Stebbins' morning glory. Records of this species distribution encompass approximately 950 acres. The Gabbro Recovery Plan calls for the protection of 880 acres that meet the plan criteria. Development has altered many of the parcels with occurrences of Stebbins' morning glory; approximately 460 acres occupied by Stebbins morning glory have been permanently protected.

The Stebbins' morning glory primarily occurs in two localized areas, with individual plants discontinuously scattered within two population centers in the northern and southern portions of the Pine Hill formation. It occurs primarily on privately owned land, although it is also found on BLM land in the action area. It is estimated that development has extirpated at least one-third of the known occurrences of Stebbins' morning glory (CDFG 1990).

In the Salmon Falls area, the plants were historically recorded from approximately 460 acres; 285 of these acres are protected within the Salmon Falls Unit. In the Cameron Park area, Stebbins' morning glories have been reported on approximately 401 acres; 97.8 of these acres have been protected within the Cameron Park Unit (BLM 2008).

El Dorado Bedstraw

El Dorado bedstraw is a soft, hairy, perennial herb in the coffee family (Rubiaceae) with four narrow leaves arranged at each node. Its pale yellow flowers appear from May to June and are clustered at the tips of the stems. The fleshy fruits are covered with minute hairs. El Dorado bedstraw can be distinguished from other species of bedstraw by its extremely narrow leaves (Service 2002).

Distribution of El Dorado bedstraw is restricted to the Pine Hill geologic formation in western El Dorado County and on the surrounding ridges to the west within approximately 2.5 miles. It is an obligate understory species that occurs in oak woodland communities, including sites with ponderosa pine and foothill pine. It has a naturally patchy distribution and is the rarest of all the listed gabbro plants.

There is no information on the susceptibility or response of El Dorado bedstraw to fire, overstory removal, or soil disturbance (Service 2002). Due to the species' existence adjacent to a chaparral community with a relatively short fire frequency, the El Dorado bedstraw is likely to persist if a fire occurred during the dry season. El Dorado bedstraw has persisted in a plant community that burns periodically and it is associated with species that have specific adaptations for fire. Although there is no experimental evidence on this subject, the species may be adapted to tolerate fire.

The reasons for the decline of the species include residential development, road construction, irrigation, and inadequate regulatory mechanisms. Its restricted distribution and the limited number of individuals make the species susceptible to catastrophic events such as pest outbreak, disease infestation, severe drought, and other natural disasters or human-caused disturbances.

Seedling survival and establishment is poor. The species is best protected in the Salmon Falls/Martel unit where four occurrences are known from non-edge effect areas. In the Pine Hill unit, three of the four occurrences are situated at least partially in edge habitat overlapping or abutting developed parcels. These "developed" parcels have single homes on >5 acre lots and may still represent suitable habitat. However, without conservation easements on these private parcels, future viability of the plants is unknown.

There are approximately 240 acres of known occurrences. The Gabbro Recovery Plan calls for the protection of 156 acres that meet the plan criteria; approximately 63 acres are permanently protected (BLM 2008).

Pine Hill Ceanothus

The Pine Hill ceanothus is a prostrate evergreen shrub in the buckthorn family, (Rhamnaceae) which generally grows to 9.8 inches in diameter. Its smooth gray-brown branches radiate from a central axis and root when coming into contact with the ground. The leaves are semi-erect with entire margins. From May to June, the shrubs bear small whitish flowers that are tinged with blue. The fruit is an inconspicuously horned globe-shaped capsule. Pine Hill ceanothus can be differentiated from other ceanothus species by its blue-tinged flowers, prostrate habit, and the shape of its fruit (Service 2002).

The Pine Hill ceanothus is a fire-adapted species (Service 2002). Pine Hill ceanothus occurs in openings within chaparral and areas that have burned. Pine Hill ceanothus seedling survival and growth under shrub canopy and without fire is poor. It requires fire for germination and recruitment and therefore for persistence in the Pine Hill ecosystem. Ceanothus shrubs commonly survive for decades, and some individuals may survive for more than 100 years. Pine Hill ceanothus appears to be a fire-adapted species. The shrubs do not stump sprout after injury or fire, reproducing by seed only. Typical dynamics for Ceanothus species in chaparral ecosystems begin with a disturbance (usually a fire), followed in the next season by mass germination of seeds, then as seedlings grow there is natural thinning as competition for space and water intensifies.

Germination experiments with Pine Hill ceanothus revealed that heat and cold treatments together yielded much higher germination rates than any single treatment. Seedling survival and

growth under shrub canopy and without fire is poor. Under appropriate conditions the seeds remain viable for decades (Conard and Reed 2003). Extirpation of populations in the ecosystem is likely to occur from fire intervals that are too short to allow plants to reach maturity and establish a seed bank, or substantially longer than the typical lifespan of adult shrubs. Elsewhere it has been estimated that California shrublands historically burned several times per century on average (Keeley and Fotheringham 2001). The species' response to wet season versus dry season burns has not been quantified; however, many chaparral species are dependent on dry season burns for optimal germination. Ceanothus shrubs are long-lived with little germination until the next fire/disturbance restarts the cycle. In the absence of disturbance, populations can persist for many decades and during this time population size is essentially stable to slowly declining.

Habitat loss, habitat fragmentation, alteration of natural fire regime, and suppression of disturbance (all mainly due to urbanization) were the major threats leading to the listing of Pine Hill ceanothus. Development has altered many parcels with occurrences of Pine Hill ceanothus.

The distribution of Pine Hill ceanothus is limited to the Pine Hill formation, with discontinuous occurrences scattered throughout the area. There are approximately 970 acres of occurrences. Records of this species distribution encompass 970 acres. The Gabbro Recovery Plan calls for the protection of 679 acres that meet the plan criteria; approximately 498 acres are permanently protected (BLM 2008).

Layne's Butterweed

Layne's butterweed is a perennial herb in the sunflower family (Asteraceae). It sprouts from a rootstock and has mostly basal leaves 3 to 10 inches long. It flowers between April and June and bears several flower heads that are 2 to 3 inches long. Flowers are composed of five to eight orange-yellow ray flowers and numerous yellow disc flowers (Service 2002). It occurs in open rocky areas in chaparral, primarily on gabbro soil formations, and infrequently on serpentine soils. Flowers are insect pollinated. Like many species in the sunflower family, Layne's butterweed is adapted to disturbance, but the role of fire on the species' viability is unknown (USFWS 2002b). In at least one case, Layne's butterweed has been found on a property which burned several years earlier.

Habitat loss, habitat fragmentation, alteration of natural fire regime, and suppression of disturbance (all mainly due to urbanization) were the major threats leading to the listing of Layne's butterweed. Records of this species distribution encompass 765 acres. Development has altered all or part of many parcels with occurrences of Layne's butterweed; 266 acres (35 percent) of historically recorded occurrences are on privately owned lands with some degree of development present. The decline of Layne's butterweed is due to residential and commercial development, road maintenance, changes in fire frequency, ORV use, competition from invasive alien species, horse paddocking, mining, other human disturbances, and inadequate regulatory mechanisms. Habitats adjacent to developed lands may be negatively affected by "edge effects" emanating from neighboring properties, such as drift of household herbicides and insecticides, fire break maintenance, and the proliferation of unmanaged trail networks. Research also indicates that habitat fragmentation can result in the loss of ecosystem functions, such as pollination and seed dispersal, and reduced biodiversity, including the local disappearance of some plant species (Damschen *et al.* 2006).

Layne's butterweed has a scattered distribution within a 40,000-acre area in western El Dorado County. Several additional colonies occur in the Eldorado National Forest in El Dorado County and in the BLM California Management Area in Tuolumne County. Layne's butterweed occurs at scattered locations throughout the Pine Hill formation and occurs in the Salmon Falls, Penny Lane, Pine Hill, and Cameron Park Units. Records of this species distribution encompass approximately 995 acres. The Gabbro Recovery Plan calls for the protection of 498 acres in the Pine Hill area that meet the plan criteria; 454 acres are permanently protected in the Pine Hill Preserve.

Environmental Baseline

The Cameron Park Unit of the Pine Hill Preserve is known to contain over 3,750 individual Stebbins' morning glory (97.8 acres), 2,130 El Dorado bedstraw plants (26.7 acres), 15,000 Pine Hill ceanothus (348 acres), and over 3,420 individual Layne's butterweed (260.7 acres).

Effects of the Proposed Action

Direct effects may occur to these species from any inadvertent trampling or crushing of plants by the twenty-person work crew. Mortality or damage may occur to listed plants from trampling underfoot and from dragging debris to the chipper. This is most likely to happen to the Pine Hill ceanothus, because it is widespread in the project area and is a prostrate shrub. Plant mortality may result from injury to plants. Chainsaws may cut or damage plants, other cut trees and shrubs may fall onto, crush or cover plants directly killing or damaging them. The masticator may also crush plants through direct contact or damage them with the cutting blades. The Pine Hill ceanothus is vulnerable to cutting and breaking, and if mistaken for the common brush species, it could be cut during project operations. However, crews will be trained in listed-plant identification and a botanist will be on site during the start of any activity to minimize these adverse effects.

Death may occur in subsequent years following injury and is often associated with the secondary agents of disease, fungus, or insects. The resistance of plants to these agents is often lowered by injury, and wounds to plant tissue may provide an entry point for pathogens (USDA 2000).

Shrub removal and ground disturbance from the twenty-person crew and mechanical equipment may result in an invasion of yellow star-thistle. Establishment of this or other noxious weeds could potentially out-compete listed plants. Implementing the conservation measures, such as monitoring and subsequent eradication of noxious weeds using hand pulling and string trimmers, will help minimize these impacts by preventing their establishment.

The main vegetation type in areas where fuels reduction will be conducted is northern mixed chaparral. This vegetation type is adapted to fire occurrences, and most of the gabbro soil rare plants growing on this vegetation type respond favorably to disturbance and opened canopy (Service 2002); however, because implementing fuels reduction through prescribed fire in the wildland-urban interface is extremely risky, the use of mechanical methods to alter the fuels load is a more viable alternative.

Since El Dorado bedstraw is most often found growing in partial shade, the reduction in shading that will occur with shrub removal may affect the species negatively or positively. If there is an optimal degree of shading for the species, then microhabitat areas that were optimally shaded are likely to become less ideal as shrubs are cut, resulting in decreased shade and changes in microclimate. Microhabitats that were previously suboptimal because they were too shady may approach the optimal shade condition as shade is reduced. The tree canopy will not be affected by the proposed project, thus few habitat areas with El Dorado bedstraw will go from a shaded condition to full daylong sunlight; those habitats that are brought to full sun are likely to become unsuitable for this species. Monitoring will provide an opportunity to assess the importance of the shading provided by the shrub layer.

The Stebbins' morning glory, Pine Hill ceanothus, and Layne's butterweed appear to grow favorably in direct sun. These species could benefit from shrub removal. The use of mechanical methods to remove overstory and neighboring vegetation around the rare plants will decrease dense shade, diminish competition for soil resources, open the habitat for the rare plants, and may allow the rare plants to colonize areas previously occupied by shrubs. Approximately four acres within the proposed fuels reduction project are occupied by pine/oak woodland. Rare plant species growing in this type of vegetation may also benefit from the removal of shrub competition and the selective removal of tree branches (to partially open aerial canopy). Further study is needed to determine if shrub removal and disturbance are sufficient to maintain and recover these species or whether fire is required to achieve this objective. The test plots incorporated into the previously proposed fuel break project (Service file number 1-1-03-F-0029) and this project will provide data toward understanding the effects of overstory removal on these listed species.

Opening up the habitat and allowing the seedbank to germinate is expected to benefit the Stebbins' morning glory, El Dorado bedstraw, Pine Hill ceanothus, and Layne's butterweed, provided that these species are able to germinate without fire. However, areas covered with chips are unlikely to experience the same pattern of natural revegetation from seed that the same site would experience after a wildfire. A layer of wood chips covering the soil will affect light, nutrients, moisture, and temperature variation at the soil surface. All of these factors are known to affect seed germination. Many chaparral species are adapted to regeneration from seed after a wildfire. For many species the first few years after a fire is the only stage of plant community development when their seedlings can be successful. For many chaparral species it has been demonstrated that seed germination requirements correspond to conditions following wildfire including bare mineral soil. These conditions are unlike those that follow mastication, which leaves a layer of organic matter above the soil surface. Therefore the deposition of chips on potential habitat as well as the mechanical mastication of fuels may result in reduced seed germination. However, implementation of the proposed action will increase viable opportunities for prescribed fire activities and thus is likely to improve habitat for the Stebbins' morning glory, Pine Hill ceanothus, and Layne's butterweed. These species are widespread in the area proposed for hand clearing.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Endangered plants are subject to more extensive cumulative effects than those of listed animals, because animals have stronger protections under the Act than plants. Adequate Federal management on this preserve is essential for the recovery of these species. Outside of this preserve, all four plant species occur in areas desirable for urban development. Because of this, the plants are losing habitat directly, through destruction and conversion of gabbro soil plant communities and outcrops to residential and associated commercial development. Although 86 percent of the Cameron Park Unit is now bordered by development, the Service anticipates that the trend of urban expansion will continue to encroach on the remaining undeveloped portions surrounding this unit.

The remaining habitat on neighboring lands is also becoming decadent with a shrubby overstory. An increase in shrubby overstory can effectively shade out the listed plants, restricting plant growth and seedling recruitment. The Stebbins' morning glory and Pine Hill ceanothus are affected by altered fire regimes that result from encroaching urban boundaries and fire restrictions. Fire suppression near the wildland-urban interface may affect the likelihood of natural regeneration of these species. Although disturbance is needed for recruitment and regeneration of Layne's butterweed, it is unknown what effects an altered fire regime has on this species. The suppression of fire adjacent to the Cameron Park Unit is likely to build up shrubby components of the ecosystem which may out-compete listed plants.

Urbanization and its associated habitat loss, habitat fragmentation, and alteration of the natural fire regime have cumulative effects that threaten these listed plants. The increasing number of people and changes in land uses in this rapidly urbanizing area will continue to place an increasing strain on the Cameron Park Unit through activities such as off-road vehicle traffic, unauthorized garbage dumping, and continued fire suppression.

The effects of residential and commercial activities extend beyond direct impacts to habitat. Habitat fragmentation and edge effects significantly impact gabbro plants. Habitat fragments may be too small to protect from being burned all at once. Additionally, habitat fragments may be too small to support viable populations of animals serving as pollinators or seed dispersal agents for the listed plant taxa. Current and future commercial and residential development and road construction continue the habitat fragmentation process and increase edge effects (discussed in effects section).

Fire suppression conducted by the CDF or other non-Federal agencies may have cumulative effects on listed species. Of primary concern are such effects on the El Dorado bedstraw. The fuel break at the north facing slope of the north boundary in the east half of section 34 (of the Shingle Springs quadrangle) of the Preserve's Cameron Park Unit would provide a reduction in total fuels near the adjacent homes. It would reduce ladder fuels that reach the canopy of the

dominant oak woodland, thus increasing the likelihood that a fire would remain on the floor of the woodland. Keeping the fire out of the tree canopy would also reduce the risk to adjacent homes and lessen the chance of a fire spotting to a remote location. Of importance to the conservation of the El Dorado bedstraw, the fuel break would provide the opportunity for fire fighters to backfire from behind the homes at Eastwood Park up the slope of the Preserve toward the ridge (away from the homes). This strategy would consume fuels prior to an approaching fire from the South. Such a backfire would protect homes and the El Dorado bedstraw population. This would also have a lesser effect on the El Dorado bedstraw than would the use of heavy equipment. Heavy equipment used to clear a wide fire line to mineral soil would likely destroy all plants and the seedbank. Therefore, the creation of this fuel break should provide firefighters with a viable fire suppression alternative (using a backfire) to using heavy equipment such as bulldozers to create a wide fuel break. The proposed fuel break and a backfire during fire suppression activities has a lower risk for adverse effects to this population of El Dorado bedstraw than does a fuel break created with heavy machinery during fire suppression activities. Using heavy equipment as the main line of fire defense would result in potentially irreversible adverse impacts to El Dorado bedstraw.

The global average temperature has risen by approximately 0.6 degrees Celsius during the 20th Century (Intergovernmental Panel on Climate Change 2001, 2007; Adger et al 2007). There is an international scientific consensus that most of the warming observed has been caused by human activities (Intergovernmental Panel on Climate Change 2001, 2007; Adger et al. 2007), and that it is "very likely" that it is largely due to increasing concentrations of greenhouse gases (carbon dioxide, methane, nitrous oxide, and others) in the global atmosphere from burning fossil fuels and other human activities (Cayan et al. 2005, Adger et al. 2007). Eleven of the twelve years between 1995 and 2006 rank among the twelve warmest years since global temperatures began in 1850 (Adger et al. 2007). The warming trend over the last fifty years is nearly twice that for the last 100 years (Adger et al. 2007). Looking forward, under a high emissions scenario, the International Panel on Climate Change estimates that global temperatures will rise another four degrees Celsius by the end of this Century; even under a low emissions growth scenario, the International Panel on Climate Change estimates that the global temperature will go up another 1.8 degrees Celsius (Intergovernmental Panel on Climate Change 2001). The increase in global average temperatures affects certain areas more than others. The western United States, in general, is experiencing more warming than the rest of the Nation, with the 11 western states averaging 1.7 degrees Fahrenheit warmer temperatures than this region's average over the 20th Century (Saunders et al. 2008). California, in particular, will suffer significant consequences as a result of global warming (California Climate Action Team 2006). In California, reduced snowpack will cause more winter flooding and summer drought, as well as higher temperatures in lakes and coastal areas. The incidence of wildfires in the Golden State also will increase and the amount of increase is highly dependent upon the extent of global warming. No less certain than the fact of global warming itself is the fact that global warming, unchecked, will harm biodiversity generally and cause the extinction of large numbers of species. If the global mean temperatures exceed a warming of two to three degrees centigrade above pre-industrial levels, twenty to thirty percent of plant and animal species will face an increasingly high risk of extinction (Intergovernmental Panel on Climate Change 2001, 2007). The mechanisms by which global warming may push already imperiled species closer or over the edge of extinction are multiple. Global warming increases the frequency of extreme weather events, such as heat

waves, droughts, and storms (Intergovernmental Panel on Climate Change 2001, 2007; California Climate Action Team 2006; Lenihan et al. 2003). Extreme events, in turn may cause mass mortality of individuals and significantly contribute to determining which species will remain or occur in natural habitats. As the global climate warms, terrestrial habitats are moving northward and upward, but in the future, range contractions are more likely than simple northward or upslope shifts. Ongoing global climate change (Anonymous 2007; Inkley et al. 2004; Adger et al. 2007; Kanter 2007) likely imperils the Stebbins' morning glory, El Dorado bedstraw, Pine Hill ceanothus, and Layne's butterweed. Since climate change threatens to disrupt annual weather patterns, it may result in a loss of habitat and/or increased numbers of parasites, and diseases.

Conclusion

After reviewing the current status of the Stebbins' morning glory, El Dorado bedstraw, Pine Hill ceanothus, and Layne's butterweed, the environmental baseline for the action area, the effects of the proposed action and its cumulative effects, it is the Service's biological opinion that the proposed construction and maintenance of a fuel break at the Cameron Park Unit of the Pine Hill Preserve, including the proposed conservation measures, is not likely to jeopardize the continued existence of these species. No critical habitat has been designated for these species, therefore none will be affected.

Section 9 of the Act prohibits removing or reducing to possession, or maliciously damaging or destroying listed plant species from areas under Federal jurisdiction. The Act and its implementing regulations do not provide for exemption from these prohibitions; however, it is the Service's expectation that BLM and their contractors will refrain from removing or collecting and will avoid damage or destruction of listed plants on lands under Federal jurisdiction. In addition, the vegetation removal addressed in this opinion is intended to benefit these species and should not be considered malicious if the conservation measures in this opinion are followed.

Reporting Requirements

The conservation measures are designed to minimize the effect of incidental damage or destruction of these four listed plants that might result from the proposed action. If, during the course of the action, listed plants are damaged or destroyed in a manner not addressed in this opinion, this represents new information requiring review of the conservation measures provided. The BLM should immediately provide an explanation of the causes of the damage and or destruction and review with the Service the need for possible modification of the conservation measures.

The Service must be notified within twenty-four (24) hours of the finding of any collection or cutting of, or malicious damage or destruction to, the species addressed in this biological opinion in a manner not addressed in this opinion. Notification must include date, time, and location of the incident clearly indicated on a USGS 7.5 minute quadrangle or other maps of finer scale, as requested by the Service, and any other pertinent information. The Service contacts are Chris Nagano, Deputy Assistant Field Supervisor (Endangered Species Program) at the Sacramento

Fish and Wildlife Office (916) 414-6660, and Special Agent Dan Crum, Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any of the following conservation recommendations:

1. The BLM should continue to conduct surveys for Stebbins' morning glory, Pine Hill ceanothus, El Dorado bedstraw, Layne's butterweed, and Pine Hill flannelbush on other BLM lands within the range of these species and determine whether management actions such as prescribed burning could be implemented to enhance any newly discovered populations.
2. The BLM should continue to monitor any effects that the fuels reduction projects have on listed plants.
3. The BLM should design and implement a scientific study comparing effects of their manual fuels reduction projects versus prescribed fire the germination, growth, and reproductive success of Stebbins' morning glory, Pine Hill ceanothus, El Dorado bedstraw, Layne's butterweed, and Pine Hill flannelbush.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting federally-listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations. The Service further requests that the results of any surveys or monitoring be submitted annually for our records and review.

REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the proposed Construction and Maintenance of a Fuel Break within the Cameron Park Unit of the Pine Hill Preserve project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental damage or destruction is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

Field Manager, Folsom Field Office, BLM

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Please contact Jeremiah Karuzas, staff biologist, or Amy Fesnock, Forest and Foothills Branch Chief, at (916) 414-6600, if you have any questions regarding this biological opinion on the proposed Construction and Maintenance of a Fuel Break within the Cameron Park Unit of the Pine Hill Preserve project.

cc:

Graciela Hinshaw, Pine Hill Preserve Manager, Bureau of Land Management, Folsom, California

Todd Gardner, Environmental Scientist, California Department of Fish and Game, Rancho Cordova, California

Caroline Prose, Program Manager, Habitat Restoration Program U.S. Fish and Wildlife Service, Sacramento, California

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