

LAST CHANCE MASTICATION

Forest Service Sensitive Plant Species Biological Evaluation

Stanislaus National Forest - Calaveras Ranger District

THIS BIOLOGICAL EVALUATION HAS BEEN PREPARED IN ACCORDANCE WITH DIRECTION IN FSM 2672.4. IT IS IN COMPLIANCE WITH 36 CFR 219.19.

SUMMARY:

MANAGEMENT DIRECTION COMPLIANCE: The proposed Last Chance Mastication project meets standards & guidelines for sensitive plants as set forth in the Forest Service Manual and the Stanislaus LRMP of 1991, as amended in July 2005 Stanislaus National Forest Plan.

DETERMINATION: Last Chance Mastication Project is unlikely to result in a trend toward Federal listing or a loss of viability for any Forest Service sensitive plant species (Table 1).

PREPARED BY: _____



DATE: December 22, 2017

Quinn Young, District Botanist

INTRODUCTION

The purpose of this biological evaluation (BE) is to determine whether implementation of the Last Chance Mastication project would result in a trend toward Federal listing of any Sensitive Plant species as designated by the Regional Forester's sensitive species list. A Sensitive Plant is defined as a plant species "identified by a Regional Forester for which population viability is a concern, as evidenced by: "a. Significant current or predicted downward trends in population numbers or density." and "b. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution (FSM 2670.5 (19))."

The Last Chance Mastication project is located on the Calaveras Ranger District of the Stanislaus National Forest in Calaveras County, California. The Last Chance Project proposed treatment units are located in T4N, R14E, Sec 20, 29, 30, 31. This area is in the Wildland Urban Interface, Defense Zone. (Defense Zone, Sierra Forest Plan Amendment pg A46). Elevations within the Last Chance project area range between 2,200 feet and 3,415 feet.

PROPOSED ACTION

Alternative 1 (Proposed Action)

Under Alternative 1 (proposed action) a variety of treatments would be implemented to meet the Last Chance project purpose and needs including:

Fuels reduction treatments:

- The Calaveras Ranger District is proposing to mechanically treat 433 acres of mixed conifer and manzanita. All treatment areas were part of the Darby fire which burned in 2001.
- Mechanically shredding/masticating brush and trees less than 8 inches DBH on 300 acres. All masticated fuels will be shredded into lengths of 16 inches and below and are not to exceed 12 inches in height.
- Hand treatments to cut and thin and pile/burn on approximately 133 acres of rocky terrain or slopes greater than 35%.
- Road side chipping would occur when feasible.
- The fuels reduction in this area will protect the local communities of Forest Meadows, Sunrise Point, Darby Knob and Hathaway Pines. If another wildfire was to start in this area the timber stand improvement treatment would give fire firefighters a strategic place to hold the fire and slow it down before it was to reach the communities.

CONSULTATION TO DATE

No federally listed Threatened, Endangered or Proposed plant species were listed for the Stanislaus National Forest when queried on December 22, 2017, as noted by U.S. Fish and Wildlife Service (USFWS database updated, September 18, 2011). The USFWS designated Whitebark pine (*Pinus albicaulis*) as a Candidate species. However, whitebark pine does not occur in the Last Chance project area, as the elevation is too low for this species.

CURRENT MANAGEMENT DIRECTION

Management of Sensitive Plants on the Stanislaus National Forest is based on Forest Service policy defined in the Forest Service Manual (FSM 2670) and the Forest Service Handbook (FSH 2609.25), the Stanislaus National Forest Land and Resource Management Plan, as amended (LRMP), the Stanislaus National Forest Sensitive Plant Management Guide (Beck and Hurley, 1984) and, where applicable, Species Management Guides.

It is the Secretary of Agriculture's policy to "avoid actions 'which may cause a species to become threatened or endangered'" (FSM 2670.12). Further, it is a Forest Service objective to "maintain viable populations of all native ... plant species in habitats distributed throughout their geographic range on National Forest System lands" (FSM 2670.22). Forest Service policy set out in FSM 2670.32 is to "avoid or minimize impacts to [Sensitive] species whose viability has been identified as a concern." Where it is determined that impacts cannot be avoided, "the line officer with project approval authority, [may make] the decision to allow or disallow impact, but the decision must not result in loss of species viability or create significant trends toward Federal listing." Under the Sierra Nevada Forest Plan Amendment (SNFPA) (USDA Forest Service, 2004), "conduct field surveys for threatened, endangered, proposed, and sensitive (TEPS) plant species early enough in the project planning process so that the project can be designed to conserve or enhance TEPS plants and their habitat. ... If additional field surveys are conducted as part of project implementation, document the survey results in the project file (SNFPA ROD Correction 2005)."

General direction for management of Sensitive Plants under the LRMP is to "provide for protection and habitat needs of sensitive plants, so that Forest activities will not jeopardize their continued existence." LRMP standards and guidelines advise to "modify planned projects to avoid or minimize adverse impacts to sensitive plants." There is no specific guidance relative to sensitive plants for the Management areas involved in this project.

Specific Standard and Guidelines for Riparian Conservation Objective 2 is relevant for sensitive plant species with habitats in Special Aquatic Features. "Prevent disturbance to streambanks...caused by activities (for example, livestock, off-highway vehicles, and dispersed recreation)...Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots (USDA 2010).

SUMMARY OF EXISTING ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, EFFECTS DETERMINATIONS

Table 1 summarizes the existing environment, anticipated environmental effects to species from the Last Chance project, and Determinations of effects on species.

Of the 35 Forest Service sensitive plant species considered on the Calaveras Ranger District, Stanislaus National Forest, 23 plant species were outside the geographic or elevation range of the cumulative analysis area (Appendix A), or there was no suitable habitat present in or near the project area (Table 1).

Conversely, there were 12 Forest Service Sensitive (FSS) plant species that were in the geographic/elevation range and had suitable habitat in the cumulative analysis area. These species are reflected in Table 1 and include: *Allium tribracteatum*, *Arctostaphylos nissenana*, *Balsamorhiza macrolepis*, *Calochortus clavatus* var. *avius*, *Dendrocollybia racemose*, *Erythronium tuolumnense*, *Fissidens aphelotaxifolius*, *Horkelia parryi*, *Mielichhoferia elongate*, *Mielichhoferia shevockii*, *Mimulus pulchellus*, and *Peltigera gowardii*.

These 12 FSS plant species were surveyed in April – May 2015 which was during the appropriate phenological identification period. Field surveys did not yield species presence for these 12 sensitive plant species.

Species excluded from further discussion are those whose distribution (i.e., geographic or elevation) does not occur in the Last Chance Mastication project cumulative analysis area (Appendix A). Further, field surveys, office records, and aerial photo interpretation were used to determine whether habitat occurred for species whose distribution was in the range of the Last Chance Mastication cumulative analysis area. Those species which did not have habitat will be excluded from further discussion in this BE and are documented in Table 1.

Finally, those FSS plant species with suitable habitat surveyed but with negative species presence results will not be considered in further effects analyses in this BE, as no project impacts are anticipated due to lack of detection of these 12 species.

It is my determination that the Last Chance Mastication project would not affect the aforementioned 23 FSS plant species due to the lack of suitable habitat or the Last Chance Mastication project location being outside of the species' range. Further, 12 sensitive plant species with no known occurrences following thorough surveys are not expected to have direct or indirect project effects, and therefore, it is my determination that the Last Chance project would have No Effect and no loss of species viability or concern of federal listing to the FSS plant species listed in Table 1.

If sensitive plant species, undetected during April – May 2015 surveys, do occur in wetland habitats (i.e., Special Aquatic Features), these plants would be protected through the use of a 50 foot buffer around perennial and intermittent wetland features as part of a RCA management requirement. This buffer would prohibit mechanized ground disturbance in and around areas with ground or surface water and suitable sensitive plant habitat. Sensitive plant species which may occur on lava caps would not be

impacted by the Last Chance Mastication project as treatments are not proposed on lahar flows and these habitats are protected with a Management Requirement within the project boundary.

Table 1. Summary of Existing Environment, Effects, and Determinations for Stanislaus National Forest Sensitive plant species. Species list was derived from Region 5 Forester's Sensitive Species List (August 15, 2013). Elevation ranges and habitat type descriptions are based on current scientific knowledge.

Plant Species	Elevation Range (ft)	Habitat Type	Project Within Geographic Range (Y/N)	Project Within Elevation Range (Y/N)	Habitat In or Around Project	Species Occurrence (Y/N)	Effect	Determination	Determination Rationale
Jepson's onion (<i>Allium jepsonii</i>)	900-6,000	Open woodlands and yellow pine forests among volcanic and serpentine soils. Basalt or serpentine outcrops, locally on the Mehrten Formation (Table Mtn. latite) north to Plumas NF.	Y	Y	N	N	N	NE	No habitat detected during surveys or GIS review;
three-bracted onion (<i>Allium tribractatum</i>)	3,000-6,500	Open volcanic soils near tops of ridges; Volcanic ridges between Stanislaus & Mokelumne Rivers.	Y	Y	Y	N	N	NE	No occurrences detected through surveys

<p>Nissenan Manzanita (<i>Arctostaphylos nissenana</i>)</p>	<p>1,450-3,650</p>	<p>Chaparral plant communities on metamorphic parent material; Ancient tropical soils, often with slate or shale, usually with low to moderately low pH.</p>	<p>Y</p>	<p>Y</p>	<p>Y</p>	<p>N</p>	<p>N</p>	<p>NE</p>	<p>No occurrences detected through surveys</p>
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big-scale balsamroot (<i>Balsamorhiza macrolepis</i>)	≤ 5,000	Open grassy slopes among chaparral and yellow pine forests.	Y	Y	Y	N	N	NE	No occurrences detected through surveys
hidden rockcress (<i>Boechea evadens</i>)	8,000-11,000'	Alpine or subalpine species in rock outcrops, rock domes, crevices, talus, or scree sites; limestone, marble, granite, metamorphic, volcanic substrates. ("Ebbetts Pass" – A. Eastwood 1940)	Y	N	N	N	N	NE	Analysis area outside of species' elevation range

upswept moonwort (<i>Botrychium ascendens</i>)	4,800 - 11,000	Calcareous or andesitic mineral influenced openings of wet meadows, fens, seeps, or riparian areas.	Y	N	N	N	N	NE	Analysis area outside of species' elevation range
scalloped moonwort (<i>Botrychium crenulatum</i>)	4,800 - 12,000	Calcareous or andesitic mineral influenced moist to saturated soils	Y	N	N	N	N	NE	Analysis area outside of species' elevation range

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		in meadows, seeps, springs, riparian areas; "stabilized margins of small streams, often among dense herbaceous vegetation".							
slender moonwort (<i>Botrychium lineare</i>)	7,000-13,250	Moist habitat margins incl. meadows, seeps, springs, riparian areas where roots can reach mineral soil; usually calcareous, usually with perennial herbaceous spp.	Y	N	N	N	N	NE	Analysis area outside of species' elevation range

common moonwort (<i>Botrychium lunaria</i>)	7,000 - 11,500	Moist, well-drained soils; meadows, streamsides, seeps & springs, sparsely vegetated scree slopes; deep woods or open areas.	Y	N	N	N	N	NE	Analysis area outside of species' elevation range
Mingan moonwort (<i>Botrychium minganense</i>)	4,800 - 10,200	Variable habitats: dense shade to open sun, dry to saturated; riparian	Y	N	N	N	N	NE	Analysis area outside of species' elevation range

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		<p>areas, small streams, meadows, fens, conifer forest.</p> <p>Calcareous, andesitic or basaltic soils influenced.</p>							
western goblin (<i>Botrychium montanum</i>)	4,800 – 7,000	<p>Moist to saturated soils high in organic matter.</p> <p>Meadows, fens, seeps and streambanks in mixed conifer forests. Open sun or dense shade.</p> <p><i>Calocedrus decurrens</i> associate.</p> <p>Andesitic influenced.</p>	Y	N	N	N	N	NE	Analysis area outside of species' elevation range

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stalked moonwort (<i>Botrychium pedunculosu m</i>)	4,800-7,000	Moist habitats incl. meadows, seeps, springs, riparian areas. Calocedrus decurrens associate. Open to closed canopy. Andesitic influenced.	Y	N	N	N	N	NE	Analysis area outside of species' elevation range
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northwestern moonwort (<i>Botrychium pinnatum</i>)	6,000-9,500	Moist grassy sites, shrubby slopes; open or closed canopy; meadows, streamsid es; Calcareous or andesitic mineral influenced.	Y	N	N	N	N	NE	Analysis area outside of species' elevation range
moosewort (<i>Botrychium tunux</i>)	8,000–12,000'	Well drained, rocky meadows; Sparsely vegetated gravelly substrates; rocky stream terraces. Calcareous influenced.	Y	N	N	N	N	NE	Analysis area outside of species' elevation range

giant moonwort (<i>Botrychium yaaxudakei</i>)	8,000-12,000	Moist alpine meadows; In YNP, under shrubby vegetation among calcareous talus boulders. In AK & ID, in grassy riverine meadows and mountain talus slopes.	Y	N	N	N	N	NE	Analysis area outside of species' elevation range
Bolander's bruchia (<i>Bruchia bolanderi</i>)	5,000 - 9,000	Damp, vertical soil surfaces; meadows, streams, upturned tree roots. Sporophytes	Y	N	N	N	N	NE	Analysis area outside of species' elevation range

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		appear in September.							
Pleasant Valley mariposa lily (<i>Calochortus clavatus</i> var. <i>avivus</i>)	2,800 - 6,000	Openings in mixed-conifer and ponderosa pine forests, southerly aspects. Rocky soils with surface rocks and cobbles readily apparent.	Y	Y	Y	N	N	NE	No occurrences detected through surveys
mountain ladyslipper (<i>Cypripedium montanum</i>)	3,500 – 6,500	Deep, loamy soils with heavy duff layer, under dense canopy, Douglas-fir, fir/pine. Little or no recent disturbance in microsite.	Y	N	N	N	N	NE	Analysis area outside of species' elevation range

<p>branched collybia (<i>Dendrocollybia racemosa</i>)</p>	<p>2,500-7,000'</p>	<p>Grows on the decayed remains of decaying mushrooms, or in duff of mixed hardwood-conifer woods; fruiting from late fall to mid-winter.</p>	<p>Y</p>	<p>Y</p>	<p>Y</p>	<p>N</p>	<p>N</p>	<p>NE</p>	<p>No occurrences detected through surveys</p>
<p>Tahoe draba (<i>Draba asterophora</i> var <i>asterophora</i>)</p>	<p>8,500-11,000</p>	<p>Usually on granitic scree slopes, some on volcanic. One historic site is on</p>	<p>Y</p>	<p>N</p>	<p>N</p>	<p>N</p>	<p>N</p>	<p>NE</p>	<p>Analysis area outside of species' elevation range</p>

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		metamorphic rock substrate.							
Cup Lake draba (<i>Draba asterophora</i> var. <i>macrocarpa</i>)	8,500-11,000	Rock crevices, alpine barrens, talus.	Y	N	N	N	N	NE	Analysis area outside of species elevation range
Jack's buckwheat (<i>Eriogonum luteolum</i> var. <i>saltuarium</i>)	5,500-8,000	Sandy granitic flats and slopes, sagebrush communities, montane conifer woodlands.	Y	N	N	N	N	NE	Analysis area outside of species elevation range

<p>Tuolumne fawn lily (<i>Erythronium tuolumnense</i>)</p>	<p>1,200 -5,000</p>	<p>North-facing canyons, riparian areas, rocky areas with subsurface water flow, Stanislaus River, N.Fork Tuolumne River, & tributaries. Soil generally rocky with poison oak.</p>	<p>Y</p>	<p>Y</p>	<p>N</p>	<p>N</p>	<p>N</p>	<p>NE</p>	<p>No habitat detected during surveys or GIS review;</p>
<p>brook pocket moss (<i>Fissidens aphelotaxifolius</i>)</p>	<p>≤ 6,300</p>	<p>On wet soil, humus and rocks along narrow streams in the vicinity of small</p>	<p>Y</p>	<p>Y</p>	<p>Y</p>	<p>N</p>	<p>N</p>	<p>NE</p>	<p>No occurrences detected through surveys.</p>

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		waterfalls; damp or wet crevices of cliffs. Not expected where scouring occurs.							
Blandow's bog moss (<i>Helodium blandowii</i>)	6,500 - 9,000	Wet meadows, fens & seeps in subalpine conifer forest and alpine lake edges.	Y	N	N	N	N	NE	Analysis area outside of species elevation range
Parry's horkelia (<i>Horkelia parryi</i>)	≤ 3,500	Chaparral and live oak plant communities, often with knobcone pine on slopes <40%; Soils with low pH.	Y	N	N	N	N	NE	Analysis area outside of species elevation range
Hutchison's lewisia (<i>Lewisia kelloggii</i> ssp.		Ridge tops or open flats with sandy granitic soils or on volcanic "lava							Analysis area outside of

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<i>hutchisonii</i>)	4,800- 7,000	caps.”	Y	N	N	N	N	NE	species elevation range
Kellogg’s lewisia (<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i>)	5,000 – 11,000	Open gravelly or sandy flats in mixed conifer and subalpine forest.	Y	N	N	N	N	NE	Analysis area outside of species elevation range
Stebbins’ lomatium (<i>Lomatium stebbinsii</i>)	3,500 - 7,500	Volcanic “lava caps” between Mokelumne & Tuolumne Rivers.	Y	N	N	N	N	NE	Analysis area outside of species elevation range
Broad nerved hump moss	7,000 - 9,500	Meadows, fens, on dead/decomposing	Y	N	N	N	N	NE	Analysis area outside of species elevation range

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<i>(Meesia uliginosa)</i>		wood, usually in the subalpine zone.							surveys.
Elongate copper moss <i>(Mielichhoferia elongata)</i>	≤ 3,550	All types of rock outcrops, often with high copper or heavy metal content, which are seasonally or perennially moist; sometimes on moist soil. Foothill woodland with oak or chaparral, occ. conifers.	Y	Y	Y	N	N	NE	No occurrences detected through surveys
<i>(Mielichhoferia shevockii)</i>	1,500-5,000'	Same habitats and rock substrate as <i>M. elongate</i> .	Y	Y	Y	N	N	NE	No occurrences detected through surveys

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Pansy monkeyflower <i>(Mimulus pulchellus)</i>	2,500 - 5,500	Meadows, seeps, vernal wet sites. Often on volcanic "lava caps." Usually on gentle slopes.	Y	Y	Y	N	N	NE	No occurrences detected through surveys
Veined water lichen <i>(Peltigera)</i>	2,700 - 8,100 (13,000)	Shallow, perennial streams fed by cold water springs.	Y	Y	Y	N	N	NE	No occurrences detected through surveys

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<i>gowardii</i>		(13,000' near Mt Dana in YNP).							
Whitebark pine (<i>Pinus albicaulis</i>)	9,000-12,100	Subalpine habitats usually in open, sunny to moderately shaded sites, on weakly developed (immature) soils	Y	N	N	N	N	NE	Analysis area outside of species elevation range

Habitat: Y = Suitable Habitat Present; N = Unsuitable Habitat

Occurrence: N = not present; Y = species present as detected through surveys, Assumed present = assumed present due to incomplete surveys in suitable habitat

Effects: N = No effect (e.g., no positive or negative effects to species from project implementation); D = Direct (e.g., mortality); I = Indirect (e.g., alteration of habitat).

Effects Determination: NE = No Effect—the project is either outside the range of species, species is not present, or there is no habitat or habitat would be unaffected for species affected by project; MA/NL = Trend/Loss Not Likely—project may affect individuals but is not likely to result in a trend towards Federal listing or loss of viability.; T/L L = Trend/Loss Likely—project may affect individuals and is likely to contribute to the need for federal listing or result in loss of viability in the planning area.

EXISTING ENVIRONMENT

Affected Environment

Thorough sensitive plant surveys were conducted from April through May 2015 to determine if sensitive plant occurrences exist in the Last Chance Mastication Project area (which is synonymous with the cumulative analysis area). Surveys targeted all Region 5 Forest Service sensitive plant species' habitats which occur on the Calaveras Ranger District including but not limited to: riparian areas and Special Aquatic Features (i.e., fens, meadows, springs and seeps), lahar (lava cap) flows and granitic outcropping, mixed conifer, and other suitable habitats.

Botany crewmembers surveyed potential habitat areas initially delineated using aerial imagery in GIS. Crewmembers used intuitive controlled survey methods in the field for each unit designated as potential habitat using aerial imagery to determine both whether or not the habitat was actually potential habitat, and whether or not sensitive plant species were present. Surveys for sensitive plant species occurred during the appropriate identification period for most species based on individual plant phenologies and physical access (e.g., restrictions from snow on roads).

Results from these surveys detected NO Forest Service sensitive (FSS) plant species in the Last Chance Mastication project area/cumulative analysis area.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 (Proposed Action)

Direct and Indirect Effects

There are no direct or indirect effects anticipated to Forest Service Sensitive Plants as surveys did not detect any FSS plants. Surveys were conducted during the appropriate phenological timeframe for FSS plant species' identification.

Alternative 2 (No Action)

No direct or indirect effects are anticipated due to the zero detections of FSS plants in the Last Chance project/cumulative analysis area.

Cumulative Effects

There would be no cumulative effects as there are no anticipated direct/indirect effects to FSS sensitive species.

DETERMINATION

Determinations for species viability are based on potential effects, inclusion of management requirements, information known about species distribution and habitat requirements, and the amount of suitable habitat located within the project area. Refer to Table 1 for effects determinations and for rationale supporting determinations.

Last Chance Mastication Project is unlikely to result in a trend toward Federal listing or a loss of viability for any Forest Service sensitive species (Table 1).

REFERENCES

USDA Forest Service 2010. Forest plan direction. Stanislaus National Forest. Pacific Southwest Region.

Sonora, CA. 202 pp.

Tech. Rep. R5-TP-028. Vallejo, CA. U.S. Department of Agriculture, Forest Service, Pacific

Southwest Region, 42 p.

Appendix A. Map of Botany Cumulative Analysis Area for Last Chance Mastication Project

