

MEMORANDUM OF UNDERSTANDING
between
UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

and the

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
LOS PADRES NATIONAL FOREST

CONSERVATION STRATEGY for:

Blakely's spineflower (Chorizanthe blakelyi)
Fort Tejon woolly sunflower (Eriophyllum lanatum var. hallii)
Parish's checkerbloom (Sidalcea hickmanii ssp. parishii)
pale-yellow layia (Layia heterotricha)

This memorandum of Understanding (MOU), is made and entered into by and between the U.S. Department of Agriculture Forest Service - Los Padres National Forest, hereinafter referred to as the Forest; and the U.S. Department of Interior Fish and Wildlife Service, hereinafter referred to as the Service. Collectively, the parties will be referred to as the cooperators.

The Sierra Madre Mountains within Los Padres National Forest have been noted for their unique natural and cultural resource values. The area contains a diverse geologic history, numerous archaeological sites from the Chumash Indian culture, and a rich composite of wildlife and plant species. Of the four plant taxa included in this Conservation Strategy, one (Blakley's spineflower) is found nowhere else. Fort Tejon woolly sunflower is found only here and approximately 50 miles to the east near Fort Tejon. Parish's checkerbloom is found only here and approximately 10 miles southwest on McKinley Mountain. Historical populations have been recorded within the San Bernardino Mountains, but these populations have not been relocated for 15 years. Pale-yellow layia historically was more common in the central coast foothills from San Benito to Ventura County. However, one of the best out of about 10 remaining populations occurs in the Sierra Madre Mountains.

This Conservation Strategy has been initiated to: 1) reduce threats to the subject species, 2) to enhance the species' populations, and 3) maintain their ecosystems. This document's primary purpose is to conserve this species through interim conservation measures under the Endangered species Act of 1973, as amended.

For the two species of concern, taking appropriate conservation measures may preclude the need to list the species in the future. The Service has developed a listing proposal that

includes the two category 1 species. For those two species, the conservation strategy will serve to direct prelisting recovery activities.

I. SPECIES ADDRESSED

The four species are either candidates for Federal listing or species of concern (sc). Candidate status is given below.

Blakely's spineflower (<u>Chorizanthe blakelyi</u>)	SC
Fort Tejon woolly sunflower (<u>Eriophyllum lanatum</u> var. <u>hallii</u>)	C1
Parish's checkerbloom (<u>Sidalcea hickmanii</u> ssp. <u>parishii</u>)	C1
Pale-yellow layia (<u>Layia heterotricha</u>)	SC

II. INVOLVED PARTIES

- A. U.S. Fish and Wildlife Service
Ventura Field Office
2493 Portola Road, Suite B
Ventura, California 93003
- B. Los Padres National Forest
6144 Calle Real
Goleta, California 93117

III. AUTHORITY

The authority for the Service to enter into this voluntary conservation strategy derives from the Endangered Species Act of 1973, as amended; the Fish and Wildlife Act of 1956, as amended; the Fish and Wildlife Coordination Act, as amended and the Candidate Species Conservation MOU of 1994.

IV. STATUS AND DISTRIBUTION OF THE SPECIES

Blakely's spineflower (Chorizanthe blakelyi) was described by Clare Hardham in 1964 based on collections made the previous year by Jim Blakely near McPherson Peak in the Sierra Madre Mountains in Santa Barbara County. Blakely's spineflower is a small annual herb in the buckwheat (Polygonaceae) family. The plant has distinctive bright yellow-green branches that grow to 15 centimeters (cm) (6 inches) tall and tiny white flowers subtended by 6 long awns (the longest being almost twice the length of the other five).

Blakely's spineflower grows on sandy or gravelly soils along the northern slopes and foothills of the Sierra Madre Mountains between Bates Canyon and Lion Canyon. It occurs in openings within chaparral and pinyon-juniper woodland at elevations between 800 and 1600 meters (2400 and 4800 feet (ft)). Very few populations of this plant are known to exist (6-10). Most populations occur on Forest Service lands, but a few occur on adjacent private lands. It is uncertain what threats exist for this species. However, because of its extremely limited distribution, the plant is vulnerable to stochastic extinction. Any disturbance by grazing, recreational activities, or other Forest Service activities may compound that threat.

Fort Tejon woolly-sunflower (*Eriophyllum lanatum* var. hallii) was first described by Lincoln Constance in 1934 based on specimens collected near Fort Tejon in Kern County in 1905 by H.M Hall in 1905. Fort Tejon woolly-sunflower is a perennial herb in the aster (Asteraceae) family. It is one of nine varieties recognized within the species, and differs from all other varieties in having glabrous, rather than glandular hairy disc corolla tubes (Ferris 1960). None of the other varieties of *Eriophyllum lanatum* occur within the range of the variety hallii. A similar looking species, *Eriophyllum confertiflorum*, can be distinguished from var. hallii by the shorter peduncles in the former.

Fort Tejon woolly sunflower grows on steep rocky slopes within chaparral and oak woodland communities. The plant is currently known from three populations in eastern Santa Barbara and western Kern counties. In Santa Barbara County, two populations are located near Montgomery Potrero in the Sierra Madre Mountains. One population has approximately 800 individuals, while the other population has less than 15 individuals. In western Kern County, a population of about 500 individuals is located on private land just south of Fort Tejon State Historic Park (FTSHP). A collection was made by Coville and Funston in 1891 "in the mountains south of Fort Tejon" (Constance 1934); it is unknown whether this location represents a separate population from that just south of FTSHP.

Threats to Fort Tejon woolly sunflower include soil erosion and compaction caused by cattle grazing and road grading activities, and herbivory. The population on private land may also be vulnerable to habitat alteration or destruction because of potential rural development. The small numbers of individuals and isolated populations further threaten this taxon with stochastic extinction.

Parish's checkerbloom (*Sidalcea hickmanii* ssp. parishii) was first described by Robinson in 1897 as *Sidalcea hickmanii* var. parishii based on collections made from the "western slopes of the San Bernardino Mountains (Abrams 1951). Anstruther Davidson and G.L. Moxley published the new combination *Sidalcea parishii* in 1923, based on a description by Robinson. In 1957, Hitchcock noting the divergent characteristics between four widely separated populations, published the new combination *Sidalcea hickmanii* var. parishii to apply to the San Bernardino Mountains material (Hitchcock 1957). At the same time, he included one collection made by Ralph Hoffmann from Mission Pine in Santa Barbara County, with the note that its more densely hairy character might merit recognition as a "fifth geographic race" (Hitchcock 1957). However, the Santa Barbara

material has continued to be recognized as Sidalcea hickmanii var. parishii (Munz 1974, Hill 1993).

Sidalcea hickmanii ssp. parishii is a medium-sized perennial shrub in the mallow (Malvaceae) family. The stems reach 2 to 8 decimeters (dm) (8 to 32 in) tall and are covered with grayish-stellate hairs. Numerous pale pink flowers, with petals 12 to 15 millimeters (mm) (0.4 to 0.6 in) long, are arranged on racemose spikes. The palmately shaped leaves distinguish this variety from the others of the species by not having pronounced lobes (Hill 1993).

Sidalcea hickmanii ssp. parishii occurs in openings in chaparral and open conifer forest between 1000 and 2500 m (3000 and 7500 ft) in elevation. Historically, the taxon occurred in the San Bernardino Mountains primarily on public lands managed by San Bernardino National Forest. In 1981, Tim Krantz rediscovered 20 plants near Barton Flats, where it had not been seen since 1924 in a burned area by Peirson (Krantz 1981). However, none of the other historical occurrences from the San Bernardino Mountains were relocated, and the Barton Flats population has since disappeared. (Munro-Burgess and DePuydt 1993). Because the plant seems to be a fire-follower, there is a possibility it will reappear if its habitat is burned. (Krantz 1981; Munro-Burgess and DePuydt 1993).

Sidalcea hickmanii ssp. parishii is currently known from five very small populations in the Sierra Madre and the San Rafael Mountains in Santa Barbara County, all within Los Padres National Forest. The largest population comprises less than 600 individuals. One of the populations, comprising 25 plants, occurs at a site that supports Air Force communications facilities; at least one individual was recently damaged by construction activities there. The three remaining sites support between 3 and 12 individuals each (Munro-Burgess and DePuydt 1993). All five populations exhibit severe damage suffered from apparent cattle grazing.

Threats facing Sidalcea hickmanii ssp. parishii include cattle grazing, road maintenance, construction activities, and exposure to herbicides. Because the taxon is a fire follower, it is also threatened by the alteration of natural fire cycles. (Krantz 1981; Munro-Burgess and DePuydt 1993). Due to the extremely limited numbers of individuals and populations, the taxon is also vulnerable to stochastic extinction.

Pale-yellow layia (Layia heterotricha) was first described by DeCandolle as Madaroglossa heterotricha in 1836; the type locality was cited as "California" (Ferris 1960). Two years later, Hooker and Arnott published the new combination Layia heterotricha. In the following years, other combinations were published, including Layia graveolens, Blepharipappus heterotrichus, B. graveolens, B. glandulosus var. heterotrichus, and Layia glandulosa var. heterotricha (Ferris 1960). However, more recent treatments have continued to recognize the name Layia heterotricha (Ferris 1960, Munz 1974, Hoover 1970, Twisselman 1967, Smith 1976, Baldwin and Bainbridge 1993).

Pale-yellow layia is a small branched annual herb in the aster (Asteraceae) family

that reaches to 90 cm (1 ft). The flower heads are comprised of 7 to 13 white to cream colored ray flowers and 43 to 91 yellow disk flowers. Its foliage is sweetly apple- or banana-scented. This plant grows in grasslands and open areas within cismontane woodlands and pinyon-juniper woodlands.

Historically, pale-yellow layia was known from eight counties in central California, ranging from San Benito County south to Ventura County. It is currently known from fewer than ten populations in Ventura, Kern, Santa Barbara, and Fresno counties. The primary cause for decline is the conversion of its habitat to agriculture, grazing, and development (e.g., the construction of San Antonio Reservoir eliminated several populations). In addition, recent surveys indicate that at a few extant sites, competition with non-native plant taxa appears to be a threat.

V. PROBLEMS FACING THE SPECIES

A. Alteration or destruction of habitat throughout all or a portion of its range.

Grazing and road grading activities have increased soil erosion and compaction in the habitats of Blakely's spineflower, Fort Tejon woolly sunflower, Parish's checkerbloom, and pale-yellow layia. Agricultural practices and rural developments have entirely eliminated pale-yellow layia habitat in some locations. Potential rural developments threaten to eliminate Fort Tejon woolly sunflower habitat on private lands.

B. Overcollection for scientific, educational, or recreational purposes.

Overcollection is not known to be a problem for any of the species at this time.

C. Predation or disease.

Signs of extensive herbivory have been observed on Fort Tejon woolly sunflower and Parish's checkerbloom plants. Possible herbivores include cattle, deer, and rabbits. In addition, flower heads of the Fort Tejon woolly sunflower have been observed to be infested with fruit fly larvae (Tephritidae) (in litt. to Cliff Smith 1975); such infestation would curtail production of viable seed.

D. Inadequacy of existing regulatory mechanisms.

Under the Native Plant Protection Act (Div. 2, chapter 10 sec. 1900 et seq. of the California Department of Fish and Game Code) and the California Endangered Species Act (Div. 3, chapter 1.5 sec. 2050 et seq.) the California Fish and Game Commission listed *Sidalcea hickmanii* var. *parishii* as rare in 1979. The remaining taxa included in this listing proposal are on List 1B of the California Native Plant Society's Inventory (Skinner and Pavlik 1994), indicating that, in accordance with sec. 1901, chapter 10 of the California Department of Fish and Game Code, they are eligible for state listing. Though

both the Native Plant Protection Act and the California Endangered Species Act prohibit the "take" of State-listed plants (chapter 10 sec. 1908 and chapter 1.5 sec. 2080 of the Fish and Game Code), State law appears to exempt the taking of such plants via habitat modification or land use change by the landowner. After the California Department of Fish and Game notifies a landowner that a State-listed plant grows on his or her property, State law requires only that the landowner notify the agency "at least 10 days in advance of changing the land use to allow salvage of such plant." (chapter 10 sec. 1913).

The management of sensitive resources on public lands managed by the Forest is guided by various policy and regulations, including the National Environmental Protection Act of 1969 (P.L. 91-109, 42 U.S.C. 4321-4347, 83 Stat 852), U.S. Department of Agriculture regulations found at (36 CFR 219.19), National Forest Management Act (16 U.S.C. 1600 et seq.), the Forest Service Manual (section 2670) and the Land and Resource Management Plan for the Los Padres National Forest (1988). Permits for certain activities or uses are typically issued as Special Use Permits.

In 1965, the Forest issued a permit to the Army Corps of Engineers (Corps) to allow construction and use of communications facilities on a peak within the Sierra Madre Mountains. The permit was issued without any conditions and without any renewal requirements. Although the permit was issued to the Corps, the facilities were actually used by the Department of the Air Force. In an effort to convert to cleaner energy generation, the Air Force initiated construction of solar generators at the site. Failure of the Air Force to contact the Forest resulted in damage to at least one individual of Sidalcea hickmanii ssp. parishii at the site. The construction has been halted until the Forest can complete a site management plan.

Most cattle grazing allotments on Federal lands are leased on ten-year permits. Until recently, Federal land management agencies did not typically develop environmental documents to satisfy NEPA requirements for grazing management plans. New regulations currently being promulgated to revise grazing management guidelines for the Forest Service (Forest) and the Bureau of Land Management (BLM) include direction to develop NEPA documents for grazing management plans. No NEPA documents were developed to address the effects of grazing on Eriophyllum lanatum var. hallii and Sidalcea hickmanii ssp. parishii on Forest lands, and on Hemizonia halliana on BLM lands. Populations of all three of these taxa show evidence of severe grazing damage; complying with current regulations guiding the management of sensitive resources has been insufficient to avoid damage to these populations.

E. Other natural or human-caused factors affecting its continued existence.

Species with small numbers of populations and individuals are subject to the threat of stochastic extinction in several ways. First, the loss of genetic diversity decreases the species' ability to maintain fitness within the environment. Secondly, species with low numbers of populations or individuals may be subject to forces that affect the ability to complete their life history successfully. Eriophyllum lanatum var. hallii and Sidalcea

hickmanii ssp. parishii provide excellent examples of this type of threat. The effect of cattle grazing on critical portions of the species life cycle has resulted in the inability of the species to establish new individuals to replenish the population. Thirdly, catastrophic environmental events, such as storms, drought, fire, or landslides, could destroy a significant percentage of a species individuals. When numbers of populations and individuals reach critically low levels, more than one of the three types of stochastic events may combine to cause extinction. For instance, a species that has had low reproductive success due to grazing pressure may subsequently be subject to a severe drought or storm event that eliminates any remaining individuals or populations. Stochastic extinction constitutes a threat for the four taxa in this strategy.

Blakely's sunflower has an extremely limited distribution. It is known to occur only on the north-facing slopes of the Sierra Madre Mountains. Fort Tejon woolly sunflower is known from only three populations. The known current distribution for Parish's checkerbloom is limited to two locations. On Sierra Madre Ridge, the four known populations all have fewer than 25 individuals. On McKinley Mountain, only one population occurs with approximately 600 individuals.

VI. CONSERVATION ACTIONS THAT WILL BE CARRIED OUT

A. The Forest will carry out the following actions:

1. Grazing management

a. Install a cattle guard at Lion Canyon to limit cattle movement.

Completion Date: December 1995

b. Determine beneficial and negative impacts of cattle grazing on the subject species and their habitats. This will be accomplished through reviewing appropriate literature, assessing current impacts, and constructing experimental exclosures. Specific methods will be determined in 1995.

c. Develop a grazing management plan (e.g., define appropriate placement of salt blocks and water troughs, allowable grazing regimes and AUM's, and designation of fence lines. See new BLM guidelines). Completion Date: 1998.

2. Road Management

Identify areas where road maintenance activities could impact the subject species and their habitats. Develop guidelines for such activities to eliminate or minimize impacts. Completion Date: 1995.

3. Fire management

a. Determine beneficial and negative impacts of fire on the subject species and their habitats. Appropriate literature will be reviewed, and fire history maps will be compared to the current subject species distribution. In addition, the 1993 Marre Fire burned adjacent to a population of Parish's checkerbloom; surveys will be conducted to determine if checkerbloom individuals have become established on the burn site. If feasible, experimental burn plots will be established. Specific methods will be determined in 1995.

b. Based on the information gathered in 3a above, develop a burn plan that includes such elements as optimal timing, severity, and frequency.
Completion Date: 1998.

4. Identify areas where construction and other ground disturbing activities could impact the subject species and their habitats (specifically Parish's checkerbloom at McPherson Peak). Develop guidelines for such activities to eliminate or minimize impacts. Completion Date: 1995.

5. Conduct surveys to identify new populations of the subject species. Surveys will focus primarily on the pale yellow layia and Blakley's spineflower. Target areas will include the potrerros and north-facing slopes along the Sierra Madre Ridge. Extensive surveys for these species will be limited to a few locations supporting potential habitat (e.g., the Marre Fire area which may support individuals of Parish's checkerbloom). Surveys will be initiated during spring 1995 and be continued in subsequent years contingent upon appropriate survey conditions.

6. Annually monitor populations and habitats of the subject species. Demographic data and impacts of disturbance will be recorded. Specific methods will be determined in 1995.

B. The Service shall:

1. Make available all literature, databases, and information contained in Service files pertaining to these four species. Date: 1995-1997.
2. Make available botanical staff to consult with Forest staff on conservation strategies, including surveying and monitoring methodology, data analysis, and project design and implementation. Date: 1995-1997.

VII. DURATION OF STRATEGY

The duration of this Conservation Strategy is for 3 years following the date of the last signature. During the 12th and 24th months of this Conservation Strategy, the parties involved will review the Conservation Strategy and its effectiveness to determine whether it should be revised. By the 36th month, the Conservation Strategy must be reviewed and either modified, renewed, or terminated. If some portion of this strategy cannot be carried out or if cancellation is desired, the party requesting such action will notify the other party within 1 month of the changed circumstances.

When and if it becomes known that there are threats to the survival of the subject species which are not resolved through this Conservation Strategy or are inappropriate for control through a Conservation Strategy, action will be initiated to list this species under section 4 of the Endangered Species Act with a proposed rule, which may be preceded by an emergency rule.

VIII. PROJECT OFFICERS

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B. Diane K. Noda, Field Supervisor
U.S. Fish and Wildlife Service
Ventura Field Office
2493 Portola Road, Suite B
Ventura, California 93003

IX. SIGNATURES

Margaret J. Boland
Forest Superintendent, Los Padres National Forest

1/24/96
Date

Diane K. Noda
Field Supervisor, Ventura Field Office
Region 1, U.S. Fish and Wildlife Service

1/25/96
Date