other six plant taxa included in the proposed rule with *A. johnstonii* are discussed in a separate **Federal Register** final rule published concurrently with this withdrawal.

References Cited

A list of all references cited herein is available upon request from the U.S. Fish and Wildlife Service Carlsbad Fish and Wildlife Office (see **ADDRESSES** section).

Author: The primary author of this withdrawal notice is Gary Wallace, Carlsbad Field Office (see **ADDRESSES** section).

Authority

The authority for this action is section 4(b)(6)(B)(ii) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: September 1, 1998.

Jamie Rappaport Clark,

Director, U.S. Fish and Wildlife Service.

[FR Doc. 98–24503 Filed 9–11–98; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AC99

Endangered and Threatened Wildlife and Plants; Withdrawal of Proposed Listing of Two Plants as Endangered, and Four Plants as Threatened From the Foothills of the Sierra Nevada Mountains in California

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule; withdrawal.

SUMMARY: The U.S. Fish and Wildlife Service (Service) withdraws the proposal to list *Lupinus citrinus* var. *deflexus* (Mariposa lupine) and *Mimulus shevockii* (Kelso Creek monkeyflower) as endangered species, and *Allium tuolumnense* (Rawhide Hill onion), *Carpenteria californica* (carpenteria), *Fritillaria striata* (Greenhorn adobe lily), and *Navarretia setiloba* (Piute Mountains navarretia) as threatened species under the Endangered Species Act of 1973, as amended (Act). The Service finds that available information does not support the listing of these species as endangered or threatened. While current and future urbanization, off-highway vehicle (OHV) use, agricultural land conversion, potential overgrazing, and/or trampling variously threaten some populations of these six taxa, there is not substantive evidence that these threats are sufficiently widespread to pose a significant threat. Some of these plants are vulnerable to extirpation from random events due to their small population size, small numbers of populations, and/or small range but this vulnerability, in and of itself, is not sufficient justification to warrant their listing. Therefore, the Service finds that the six plant species are not threatened with extinction throughout all or a significant portion of their ranges in the foreseeable future and do not meet the definition of threatened or endangered species.

DATES: This withdrawal is made on September 14, 1998.

ADDRESSES: The complete file for this rule is available for public inspection, by appointment, during normal business hours at the Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service, 3310 El Camino Avenue, Suite 130, Sacramento, California 95821–6340.

FOR FURTHER INFORMATION CONTACT: Diane Elam, Kenneth Fuller, or Dwight Harvey at the above address or by telephone (916) 979–2120.

SUPPLEMENTARY INFORMATION:

Background

On October 4, 1994, the U.S. Fish and Wildlife Service (Service) published in the **Federal Register** (59 FR 50540) a proposal to list as endangered or threatened 10 plant species from the foothills of the Sierra Nevada Mountains in California. Included among these 10 taxa were the six subject taxa of this notice, *Allium tuolumnense* (Rawhide Hill onion), *Carpenteria californica* (carpenteria), *Fritillaria striata* (Greenhorn adobe lily), *Lupinus citrinus* var. *deflexus* (Mariposa lupine), *Mimulus shevockii* (Kelso Creek monkeyflower), and *Navarretia setiloba* (Piute Mountains navarretia). The remaining four taxa, *Brodiaea pallida* (Chinese Camp brodiaea), *Calyptridium pulchellum* (Mariposa pussypaws), *Clarkia springvillensis* (Springville clarkia), and *Verbena californica* (Red Hills vervain), are addressed separately in a final rule published concurrently with this notice.

Allium tuolumnense was first recognized as distinct by Marion Ownbey (Munz and Keck 1959), who referred to it as *Allium sanbornii* var. *tuolumnense*, although the first valid published description of the plant was by Hamilton P. Traub (1972). Stella Dension and Dale McNeal (1989) revised the *A. sanbornii* qcomplex and elevated the variety to a species based upon the position of stamens and styles and the length and shape of perianth segments (sepals and petals).

Allium tuolumnense is an erect, herbaceous perennial of the lily family (Liliaceae) that grows from underground bulbs. This species has fleshy, green entire leaves that reach a height of 25 to 50 centimeters (cm) (10 to 20 inches (in)). The loose, 20 to 60 flowered, white- or pink-flushed inflorescence appears in late March to early May. *Allium tuolumnense* differs from *A. sanbornii* and *A. jepsonii* in its entire, spreading perianth segments, fringed ovarian bumps (processes), and early blooming period that does not overlap with any other *Allium* species within its range. Although this plant can reproduce from seed, *A. tuolumnense* tends to reproduce asexually from its underground bulb, forming small colonies of usually fewer than 100 plants per colony (BioSystems Analysis 1984). *Allium tuolumnense* is a highly restricted endemic that grows only on serpentine soils in the foothills of the Sierra Nevada Mountains in southwestern Tuolumne County between 400 and 600 meters (m) (1,310 to 1,970 feet (ft)) in elevation. *Allium tuolumnense* is known from four localities— Table Mountain, Quartz Mountain, the Red Hills, and the Moccasin area. The entire range of the species comprises a 342 square kilometer (sq km) (132 square mile (sq mi)) area. Occupied habitat within the range of the species is estimated to be approximately 388 hectares (ha) (960 acres (ac)) (California Natural Diversity Database (CNDDB) 1997). Approximately 25 percent of *A. tuolumnense* occupied habitat is found on private lands and 75 percent on lands administered by the Bureau of Land Management (BLM). At the time of the proposed rule, populations of *A. tuolumnense* were thought to be variously threatened by placer mining, urbanization, and potentially by overgrazing.

John C. Fremont collected *Carpenteria californica* from an area in the Kings River watershed on his third expedition to California in 1846. John Torrey (1852) first described *C. californica* from specimens sent to him by John Fremont. The species is the only member of the genus *Carpenteria*, one of California's many endemic genera that are relicts without close relatives. The genus probably had a wider range in early Tertiary time (Barbour and Major 1988). An estimated one-third of the total distribution of species has been lost to habitat loss and/or alteration since the species was discovered in the 1840's

(California Department Fish and Game (CDFG) 1989). Although land and road development appear to have been major causes of past habitat losses and fragmentation, pending development proposals are insufficient to pose a substantial threat of further losses and degradation of occupied habitat.

Carpenteria californica belongs to the mock orange family (Philadelphaceae). The species is an erect to spreading evergreen shrub, growing to 1 to 2 m (3 to 6.5 ft) in height. Some individuals grow to 4 m (13 ft) tall. Plants have glossy green, opposing leaves, and smooth pale bark that peels in large sheets in the late summer. Terminal, white, showy flowers appear in May or June and last through July at higher elevations. *Carpenteria californica* requires fire for seed germination and reduction of competition, and rest from grazing for three years after germination to facilitate longterm survival. *Carpenteria californica* is found along drainages and mesic areas on mostly granitic soils from 460 to 1,220 m (1,500 to 4,000 ft) within the chaparral and woodland communities of the western foothills of the Sierra Nevada Mountains primarily in eastern Fresno County. A newly discovered occurrence of about 40 individuals was found in 1997 in Madera County just to the north of Fresno County (Joanna Clines et al., United States Forest Service, Sierra National Forest, *in litt.* 1997).

At the time of the proposed rule, *Carpenteria californica* was known from six occurrences distributed over a 583 sq km (225 sq mi) area in Fresno County. One of these occurrences is on private land, four are on lands administered by the U.S. Forest Service, Sierra National Forest, and one is on both private and Forest Service lands. The Madera County population is on the Sierra National Forest (J. Clines *et al., in litt.* 1997). The total number of individual plants among these seven occurrences is estimated to be 8,000 (J. Clines, *in litt.* 1997), and the estimated habitat area is approximately 7,117 ha (17,587 ac) (CNDDB 1997). Approximately 30 percent of *C. californica* individuals occur on private lands, and most of the remaining 70 percent occur on Federal lands (James Boynton, Sierra National Forest, *in litt.* 1993). The Sierra National Forest has established a 101-ha (250-ac) Carpenteria Botanical Reserve to protect one part of an occurrence of this species. Individual plants also occur within the Sierra National Forest's Backbone Natural Research Area. A portion of one occurrence of *C. californica* is protected on a 121-ha (300-ac) private preserve owned by The Nature Conservancy (TNC). At the time of the proposed rule, *C. californica* was thought to be variously threatened by urbanization, fire management, overgrazing and/or trampling by cattle, and inadequate State regulatory mechanisms, and to be potentially threatened by illegal dumping, highway construction, maintenance of road rights-of-way activities, and competition from native brush species.

Alice Eastwood (1931) described *Fritillaria striata* from specimens collected by Roy Weston on the Rattlesnake Grade in the Greenhorn Mountains of Kern County. *Fritillaria* is a genus of slender, herbaceous, bulb-forming perennials in the lily family (Liliaceae). An unbranched stem grows 5 to 10 cm (2 to 4 in) above the surface of the ground from an underground bulb. The underground, spherical bulb is found 20 to 35 cm (8 to 13 in) deep underground and is 15 to 20 millimeters (mm) (0.6 to 0.8 in) in diameter. The predominantly basal, alternate to opposite leaves are oblong to lance-shaped, 1 to 2 cm (0.4 to 0.8 in) wide and 6 to 10 cm (2 to 4 in) long. The upper leaves are narrower and undulate. One to four fragrant, bell-shaped flowers appear from February through April. *Fritillaria striata* differs from the related *F. pluriflora* (adobe lily), which occurs in the northern Sacramento Valley foothills, in the shape, size, and coloring of the flowers, the conspicuous nectaries, and the converging stigmas (Stebbins 1989, Eastwood 1931).

Fritillaria striata is found on heavy, usually red, clay soils in the annual grasslands and in the blue oak (*Quercus dougaslii*) woodlands of the southeastern San Joaquin Valley and western Sierra Nevada foothills and the northern foothills of the Tehachapi Mountains. At the time the proposed rule was published, 14 occurrences of *F. striata* were known in Kern County, and 3 occurrences were known from Tulare County (CNDDB 1997). During the fourth comment period for the proposed rule, six additional occurrences of *F. striata* in Kern County were reported (Dennis Mullins, Tejon Ranch, *in litt.* 1997). Occurrences of *F. striata* are scattered discontinuously over a 7,250 sq km (2,800 sq mi) area; however, the estimated occupied area of the occurrences is less than 202 ha (500 ac) (CNDDB 1997). The 23 occurrences range in elevation from 300 to 1,430 m (1,000 to 4,800 ft). All occurrences occur on private land. Although no occurrences are protected in public ownership, *F. striata* appear to be actively managed for the protection of the plants at two locations (CNDDB 1997). At the time of the proposed rule, *F. striata* was thought to be variously threatened by urbanization, agricultural land conversion, road widening, emergency road maintenance, inadequate State regulatory mechanisms, livestock use, competition from non-native grasses, and OHV use.

Joseph Congdon (1904) described *Lupinus deflexus* from specimens that he collected near Mariposa Creek in Mariposa County in 1903. Willis Jepson (1936) revised the treatment of this species and reduced the plant to varietal status, *Lupinus citrinus* var. *deflexus*. *Lupinus citrinus* var. *deflexus* is an erect, diffusely-branched annual herb belonging to the pea family (Fabaceae). The 3 to 5 decimeter (dm) (12 to 20 in) high plants are short, hairy to hairless, and have palmately compound leaves that are 15 to 25 mm (0.5 to 1.0 in) long. The six to nine leaflets are about one-third as wide as they are long and are linear or spatulate in shape with rounded or obtuse tips. White flowers that may have pink or lavender tips appear from April through May.

Lupinus citrinus var. *deflexus* grows on decomposed granitic sands on ridgetops and hillsides in openings in the foothill woodlands from 475 to 580 m (1,400 to 1,900 ft) in elevation. The six occurrences of this plant occur on private lands in Mariposa County over a 40 sq km (15 sq mi) area. Two of the six occurrences grow with *Calyptridium pulchellum*, a species the Service is listing as threatened in the final rule being published concurrently with this withdrawal. At the time of the proposed rule, *L. c.* var. *deflexus* was thought to be threatened by urbanization, inadequate State regulatory mechanisms, and potentially by overgrazing.

Lawrence Heckard and Rimo Bacigalupi (1986) first described *Mimulus shevockii* from specimens collected by James Shevock around the Kelso Creek area near the east base of the Piute Mountains in Kern County. *Mimulus shevockii* is an erect, desert annual in the snapdragon family (Scrophulariaceae). This plant grows to 1 dm (4 in) in height and has opposite, sessile, somewhat fleshy leaves along reddish stems. Asymmetric flowers appear from late March to May. The corolla is two-lipped. The upper flower lip has two short, entire, lateral maroon-purple lobes. The lower flower lip is similar but larger in size and has an additional large, partially divided yellow lobe with red mottling. *Mimulus androsaceus* (rockjasmine monkeyflower) and *M. fremontii* (Fremont's monkeyflower) grow with *M. shevockii* and have some similar vegetative features but differ in flower

color. *Mimulus androsaceus* has a red-purple flower and *M. fremontii* has a rose-purple flower.

Mimulus shevockii occurs predominately in loamy, coarse sands on alluvial fans and deposits of granitic origin within the Joshua tree (*Yucca brevifolia*) or California juniper (*Juniperus californica*) xeric woodlands in Kern County. *Mimulus shevockii* is found within an elevational range of 975 to 1,250 m (3,200 to 4,100 ft). Seven of the eight known occurrences of *M. shevockii* are within a 31 sq km (12 sq mi) area, with the remaining occurrence 14 km (9 mi) to the northwest. Four occurrences of M. shevockii are found on BLM land, one is on private land, and three occur partially on BLM land and partially on private land (CNDDB 1997). Approximately 400 occupied ha (990 ac) of *M. shevockii* occur on BLM land, and approximately 408 occupied ha (1,000 ac) occur on private land (Susan Carter, BLM, pers. comm. 1997a). Since the proposed rule was published, three new occurrences have been found (S. Carter, *in litt.* 1995a, 1995b; CNDDB 1997), and approximately 645 ha (1,600 ac) of potential, unsurveyed habitat on BLM land have been identified (S. Carter, *in litt.* 1996). At the time of the proposed rule, *M. shevockii* was thought to be threatened by urbanization, OHV use, and agricultural land conversion.

Frederick Coville (1893) described *Navarretia setiloba* from plants that he collected from a ridge between Kernville and Havilah in Kern County. *Navarretia setiloba* is an erect annual plant in the phlox family (Polemoniaceae). The species grows 8 to 20 cm (3 to 8 in) tall and has a few branches. The linear, pinnately-lobed leaves have rigid, spinose lobes. The terminal lobe is broadly lanceolate and often purplish. The inflorescence is about 10 mm (0.4 in) long, has 20 to 30 purple flowers, and appears from April through June. The flowers are subtended by spiny bracts that are constricted in the middle. *Navarretia setiloba* is distinguished from closely related species (sympatric congeners) in the same locations by the broad terminal lobe on each leaf and by its purple flowers.

Navarretia setiloba grows on heavy, often red-colored, clay soils within blue oak (*Quercus douglasii*), foothill pine (*Pinus sabbiniana*), or juniper (*Juniperus californica*) woodlands between 300 and 960 m (1,000 to 3,200 ft). Six small occurrences of *N. setiloba* are known from Kern County and are scattered over a 4,000 sq km (1,560 sq mi) area. The known occupied habitat of N. setiloba is less than 6.5 ha (16 ac) (CNDDB 1997). One occurrence is found on land administered by the BLM, and five occurrences are found on private lands (CNDDB 1997). At the time of the proposed rule, *N. setiloba* was thought to be threatened by urbanization and OHV use.

Finding and Withdrawal

The Service finds that the various threats to all or most of the populations within the ranges of *Allium tuolumnense*, *Carpenteria californica*, *Fritillaria striata*, *Lupinus citrinus* var. *deflexus*, *Mimulus shevockii*, and *Navarretia setiloba* are insufficient to warrant listing these species.

Summary of Comments and Recommendations

In the October 4, 1994, proposed rule (59 FR 50540) and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to development of a final rule. Appropriate Federal agencies, State agencies, County and City governments, scientific organizations, and other interested parties were contacted and requested to provide comments. Newspaper notices inviting public comment were published in the *Bakersfield Californian and Porterville Recorder* on October 10, 1994, and the *Fresno Bee* and *Tuolumne Union Democrat* on October 25, 1994. The comment period closed on December 5, 1994.

As a result of receiving seven requests for one or more public hearings, the Service reopened and extended the comment period until February 13, 1995 (59 FR 67268). The Service held informational meetings with interested parties about the proposed rule in Fresno on January 25, 1995, in Visalia on January 26, 1995, and in Bakersfield on January 27, 1995. On January 31, 1995, the Service conducted a public hearing in Bakersfield. The Service received three requests to postpone or delay the hearing and three additional requests to extend the comment period beyond February 13, 1995. Responding to these requests, the Service extended the comment period until June 4, 1995 (60 FR 8342). The Service reopened the comment period on February 4, 1997 (62 FR 5199), and again on June 30, 1997 (62 FR 35116), to update and clarify information received during the two prior comment periods.

The Service received 314 comments (i.e., letters, phone calls, facsimiles, and oral testimony) from 96 individuals or agency or group representatives concerning the proposed rule to list the six species which are now part of the withdrawal notice. Twenty-six people provided 60 comments supporting the proposed listing of the species in this withdrawal notice, 28 people opposed the proposed listing and provided 162 comments, and 42 people provided 92 informational comments. Several commenters provided additional information that, along with other clarifications, has been incorporated into the ''Background'' or ''Summary of Factors Affecting the Species'' sections of this withdrawal. Opposing and technical comments have been organized into eight specific issues. These issues and the Service's response to each, are summarized below.

Issue 1—Sufficiency and Admissibility of Data

Comment: Several commenters stated that data used in the proposed rule to list these six plants in this withdrawal notice were either incomplete, inaccurate, insufficient, erroneous, unsubstantiated, inadequate, unscientific, subjective, unsupported, or based only on biased opinions in favor of listing the species, or required additional research.

Service Response: Information used by the Service in proposing to list and withdraw the species was gathered from a variety of sources, including Federal and State agencies, local governments, and private individuals, including species experts and scientists. Information received during public comment periods, including peer reviewer comments and comments made at public hearings, provide the foundation for determining the withdrawal of the six taxa in this notice. All information received was carefully evaluated in accordance with the interagency policy on information standards under the Act, published on July 1, 1994 (59 FR 34271). Criteria for what information may be considered are discussed in the ''Summary of Factors Affecting the Species'' section of this rule.

Comment: Several commenters stated that data were or may have been collected by trespass and questioned the legality and admissibility of the data under those circumstances.

Service Response: Among the information sources used by the Service is information from Natural Diversity Database (CNDDB), a part of the Natural Heritage Program of the California Department of Fish and Game (CDFG). The data are submitted to CNDDB on a standardized form and carefully reviewed by the staff at CNDDB. However, the form does not ask if written or verbal permission was requested to access any lands, including private lands. Many of the older observations may predate the more

recent heightened sensitivity of landowners to individuals searching for rare plants on private lands. Neither the Service nor the CDFG condone trespassing.

Comment: Several commenters stated that the information was accurate, and that the Service would not have proposed these species if the data did not support the proposed listing.

Service Response: The Service gathered the best available information in order to make an accurate determination related to these plant species. The Service received additional information on the status, distribution, and threats to the six taxa in this withdrawal notice over the course of four comment periods; October 10, 1994 to December 5, 1994, December 29, 1994 to June 4, 1995, February 4, 1997 to March 6, 1997, and June 30, 1997 to August 30, 1997. Based upon all the comments received, the Service determined that the six taxa in this notice did not meet the definitions of either endangered or threatened as stated in the Act and implementing regulations (50 CFR 424 subpart A).

Issue 2—Species are or are not Threatened or Threats are not Substantiated

Comment: Several commenters stated that some of the species were more common than indicated in the proposed rule, or some, if not all, of the species were not threatened by one or more factors across the range of the species.

Service Response: The Service concurs with the comment. Additional information regarding the status of the six taxa in this notice is discussed in the ''Summary of Factors Affecting the Species'' section of this withdrawal. The Service has determined that none of these six plant taxa meet the definition of a threatened or endangered species under the Act. A list of all references used to formulate this withdrawal notice is available at the Sacramento Fish and Wildlife Office upon written request (see **ADDRESSES** section).

Issue 3—Fire Management

Comment: The U.S. Forest Service can use controlled fires to improve *Carpenteria californica habitat.* California Department of Forestry and Fire Protection (CDFFP) vegetation management practices such as fire suppression and controlled burns could and should be used to benefit *C. californica* on private lands.

Service Response: The Service agrees that vegetation management through controlled burning may have some benefits for selected plant species. To illustrate, controlled burning can promote the needed sexual reproduction of *Carpenteria californica* by reducing the competition of native brush species and allowing for seeds of *C. californica* to germinate and grow. The U.S. Forest Service started to construct firebreaks on lands administered by the Sierra National Forest in 1997 as part of a five year program of controlled burning to promote the sexual reproduction of *C. californica* (J. Clines, *in litt.* 1997) (discussed in detail in Factor E, below). However, in regards to private lands, please see the next comment and response.

Comment: Firebreaks are used as one means to control wildfires and can minimize severe impacts of fire to vegetation, and should facilitate the burning of native brush and grasses, and thus promote the propagation of *Carpenteria californica.* The U.S. Forest Service and CDFFP have a new fire suppression facility that will reduce response time for initial attacks on wildfires and thus reduce the effects of wildfires, and the urban interface issue with *C. californica.* The CDFFP promotes the use of prescribed burns to control native and non-native vegetation without which *C. californica* may decline.

Service Response: The Service agrees that controlled burning on private lands may promote the longterm reproduction of some selected plant species. However, the CDFFP has not conducted any controlled or prescribed burns in *C. californica* habitat to facilitate the needed seed germination and seedling establishment of *C. californica* on private lands in the last five years. Furthermore, controlled burning alone is insufficient to insure that seedlings of *C. californica* will survive any subsequent cattle trampling or grazing. Please see Factor E of the ''Summary of Factors Affecting the Species'' section for further discussion.

Issue 4—Cultivation and Horticulture

Comment: Several commenters stated that *Carpenteria californica* should not be listed because it can be commercially produced in California from nursery (non-wild) stock. Populations of *C. californica* are expanding throughout its range and in England from the nursery trade. Successful cultivation guarantees that the plant is not threatened or endangered under intent of the ESA.

Service Response: One of the purposes of the Act is to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved. Successful cultivation of a species such as *Carpenteria californica* for the nursery trade does not meet the purposes of the Act. Nursery cultivation and sales of *C. californica* do not constitute a native population or range expansion or extension of a wild ecosystem nor do those activities by themselves ensure the conservation or protection of a wild ecosystem. Although reintroduction into potential suitable habitat may be an important recovery tool, such reintroduction of *C. californica* does not necessarily ensure the long-term survival of the species.

Issue 5—Range and Distribution

Comment: The Service received comments regarding the incomplete data addressing the range and distribution of *Allium tuolumnense, Fritillaria striata,* and *Mimulus shevockii.*

Service Response: Some commenters provided no additional specific information regarding the range and distribution of *Allium tuolumnense, Fritillaria striata,* and *Mimulus shevockii* that could be used in this withdrawal notice. Other commenters provided specific information regarding *Fritillaria striata* and *Mimulus shevockii* that was used in the development of this withdrawal notice. Please see the ''Background'' and ''Summary of Factors Affecting the Species'' sections for further discussion.

Issue 6—Existing Regulatory Mechanisms

Comment: Several commenters stated that the existing regulatory measures available through State, Federal and local laws, rules and regulations provide adequate protection for the six species in this notice. Other commenters stated that the existing regulatory mechanisms were not sufficient to protect the species included in this notice of withdrawal, and therefore the listing should go forward to provide the protection necessary for the continued existence of these species.

Service Response: Because the Service has not found evidence of sufficient threats to any of these species to warrant listing, the question as to whether existing regulatory measures are adequate to protect them is irrelevant. See the discussion under Factor D of the ''Summary of Factors Affecting the Species'' section for further detail.

Issue 7—Grazing

Comment: One commenter stated that *Fritillaria striata* is not adversely impacted by cattle grazing and trampling because no scientifically documented studies exist to demonstrate the speculation of adverse impacts, nor is it threatened at the five sites which are noted in the proposed

rule to have heavy grazing or overgrazing as a threat because the visits were done by people who had no range management knowledge or training and were done at the wrong times of year, nor is it threatened by competition from non-native plants. The same commenter stated *F. striata* has no habitat at the Element Occurrence 2, and, therefore, has not been extirpated due to heavy grazing as was stated in the proposed rule.

Service Response: The Service received no data to support the contention that grazing did not have adverse impacts to any occurrences of *Fritillaria striata* as stated in the proposed rule. Virtually all the information regarding adverse impacts to occurrences of *F. striata* that the Service received was anecdotal information. No special training in range management or other science is needed to observe that individual plants of *F. striata* are consumed and flowers are trampled across a small area that contains a few hundred individual plants. The timing of observations of cattle consuming and trampling flowers has varied. The Service also received plant count data for a single year on 10 previously unknown sites of *F. striata* which have been historically grazed at various seasons of use. Although other extirpations have occurred to populations of *F. striata,* reports to the CDFG's Natural Heritage Program indicate that the Natural Diversity Data Base Element Occurrence Number 2 had experienced heavy grazing in 1990, but is still extant (CNDDB 1997). Anecdotal observations of adverse or neutral impacts to occurrences *F. striata* are part of the public record. Please see Factor C in the ''Summary of Factors Affecting the Species'' section for further discussion of grazing as it relates to these species.

Comment: One commenter stated that cattle do not eat *Carpenteria californica* flowers. Another commenter stated that grazing reduces the competition to *C. californica* from grasses and other species. Another commenter stated that *Carpenteria californica* is only grazed and trampled for about three years after a burn. Lastly, one commenter stated that grazing does not affect the *C. californica* occurrence located next to Highway 168.

Service Response: In the proposed rule, the Service stated that overgrazing was adversely affecting portions of two populations of *Carpenteria californica* in Fresno County. The Service has not ever stated that cattle eat the flowers of *C. californica* or that cattle were adversely affecting that portion of a population of *C. californica* at California State Highway 168. As a mature plant, *Carpenteria californica* is not readily grazed by livestock. However, in a three-year study of the effects of cattle grazing and trampling, over 90 percent of 400 marked seedlings were killed by grazing and trampling (Clines 1994).

Comment: One commenter stated that grazing reduces competition to *Carpenteria californica* from grasses and other species. Another commenter stated that competition from native brush species may adversely affect *C. californica.*

Service Response: Neither commenter provided the Service with any information nor data to support their respective contentions. Scientific literature on the effects of grazing or competition from native brush species to *C. californica* is lacking. The Service is not aware of any data that supports or refutes that competition from other plant species affects *C. californica,* or that livestock grazing reduces competition between other species and *C. californica.* For more discussion on the effects of livestock grazing, please see Factor C in the ''Summary of Factors Affecting the Species'' section.

Comment: Navarretia setiloba only occurs on one section of public lands in the Piute Mountains and grazing is not likely to adversely affect this species.

Service Response: With the exception of the two occurrences of *Navarretia setiloba* that occur within an urban setting (e.g., inside an existing mobile home park in one case), all known occurrences of *N. setiloba,* including the one on public lands in the Piute Mountains, are found on open rangelands that are likely grazed by livestock. At the time of the proposed rule, the Service did not state that livestock grazing was adversely affecting any of the populations of *N. setiloba* and is not aware currently that any one of the occurrences is adversely affected by livestock grazing.

Comment: Some occurrences of *Mimulus shevockii* receive some grazing but it does not significantly impact them.

Service Response: At the time of the proposed rule, the Service did not state that livestock grazing adversely affected or threatened any of the known populations of *Mimulus shevockii.*

Comment: Several commenters stated that grazing and/or trampling is good for the six species in this withdrawal notice by promoting plant vigor, or creates a better seedbed. One commenter stated that the Service holds the position that all grazing is overgrazing. One commenter stated that other environmental factors (e.g., rainfall) are more of an issue for these species than grazing.

Service Response: The Service is unable to support the general position that grazing is either beneficial or detrimental for the six species in this withdrawal notice. Many factors involved in livestock management and grazing practices, such as season of use, intensity, duration, and stocking levels, as well as varying climatic conditions may contribute to beneficial, neutral, or negative impacts to individual plant species and the ecosystem these species inhabit. Life and growth stages of individual plant species may also enter into accounting of any effects from livestock grazing and are often coupled with complex interactions of competition with other plant species and other indirect effects. This lack of available scientific literature, along with site specific observations and local extirpations of some taxa, fails to support a position that grazing is always beneficial to the six taxa in this withdrawal notice. The Service does not maintain, however, that all grazing is overgrazing or that all populations are threatened by overgrazing, but rather that grazing at some locations has been observed to have adverse impacts on *Carpenteria californica* and *Fritillaria striata.*

Virtually all the information that the Service collected regarding adverse, beneficial, and neutral livestock grazing effects on the six taxa is anecdotal. However, repeated observations over time coupled with knowledge of historical land uses suggests some levels of grazing may adversely affect *Carpenteria californica, Fritillaria striata,* and *Lupinus citrinus* var. *deflexus.* However, information that was provided for some of locations of some of the taxa in this withdrawal notice indicates that some levels of livestock grazing may be a compatible land use with *Allium tuolumnense, Mimulus shevockii,* and *Navarretia setiloba.* The effects of herbivory by any animal, including livestock, is addressed under Factor C, ''Disease and Predation'' section of this withdrawal notice.

Comment: Several commenters stated that threats associated with livestock grazing were either false, or purely speculative, or lacked any scientific credence.

Service Response: In order to make a final determination whether to list 10 plant species, the Service evaluated site specific observations of known plant occurrences and reviewed an extensive body of literature on the impacts of non-native mammals to plant species. The Service also reviewed some data regarding plant counts of *Fritillaria*

striata at 13 sites, 10 of which were unknown before the proposed listing. Please refer to Factor C in the ''Summary of Factors Affecting the Species'' section of this rule for further discussion of grazing.

Issue 8—Alternative Status

Comment: Several commenters requested that the species considered in this notice should either not be listed at this time, be listed, be listed with an alternate status, or retain current status indefinitely.

Service Response: Substantive information provided by commenters in support of arguments for alternative listing status, including delay or withdrawal, has been incorporated into the final rule and this withdrawal notice. Please refer to the ''Summary of Factors Affecting the Species'' section for further discussion.

Peer Review

In accordance with the interagency policy published on July 1, 1994 (59 FR 34270), the Service solicited the expert opinions of seven independent and appropriate specialists regarding pertinent scientific or commercial data and assumptions relating to the taxonomy, population status, and biological and ecological information of the 10 proposed plants. Five of the seven requested reviewers provided comments. It is important to note that the peer reviewers were not aware that many of the threats to these six taxa had been reduced or removed since the proposal in 1994 and that additional occurrences (populations and additional plants had been located. Not all reviewers commented on all of the taxa that were proposed for listing. One reviewer supported the listing of the species addressed in this withdrawal, noted that each species is taxonomically distinct, and commented that the low numbers of individuals in populations make them especially susceptible to genetically based and detrimental phenomena. These phenomena include inbreeding depression and loss of genetic variability. The reviewer characterized population sizes of *Lupinus citrinus* var. *deflexus* and *Mimulus shevockii* as ''perilously low'' and the populations of *Allium tuolumnense, Carpenteria californica, Fritillaria striata,* and *Navarretia setiloba* as approaching that condition. A second reviewer also supported the listing of the species addressed in this withdrawal and commented specifically on *C. californica, F. striata, L. c.* var. *deflexus, M. shevockii,* and *N. setiloba.* The reviewer noted that the absence of sexual reproduction in *C. californica* and *F. striata* augments the argument that the species are endangered. Further, the reviewer noted because we do not understand why the species fail to reproduce sexually or how to remedy it, the long-term prospects for these species are ''exceedingly dubious.'' The same reviewer also commented that further reductions in populations of *L. c.* var. *deflexus, M. shevockii,* and *N. setiloba* may place them in danger of extinction by random natural events. A third reviewer addressed *C. californica, F. striata,* and *L. c.* var. *deflexus.* The reviewer noted that the primary threat to *C. californica* from grazing and trampling is immediately following a fire, that fire suppression is a potential threat to *C. californica,* that alteration of fire frequency may effect the long-term viability of *F. striata* populations, and that the limited number of populations and known distribution of *L. c.* var. *deflexus* suggest that protection is needed. A fourth reviewer provided information on the taxonomic distinctiveness, ecology, and non-native competitors of *N. setiloba.* The fourth reviewer emphasized the importance of conserving the species. The fifth reviewer provided no specific comments but supported the listing of the six taxa addressed in this withdrawal.

The Service has reviewed all the comments received during the four comment periods. Only comments specific to the six taxa that are the subject of this notice are addressed herein. General comments received on all ten taxa and specific comments that were received pertaining to the four taxa that the Service is listing as threatened *Brodiaea pallida* (Chinese Camp brodiaea), *Calyptridium pulchellum* (Mariposa pussypaws), *Clarkia springvillensis* (Springville clarkia), and *Verbena californica* (Red Hills vervain) are addressed in a separate **Federal Register** final rule published concurrently with this withdrawal.

Summary of Factors Affecting the Species

The Service must consider five factors described in section 4(a)(1) of the Act when determining whether to list a species. These factors, and their application to the Service's decision to withdraw the proposal to list *Allium tuolumnense* (Traub) Denison and McNeal (Rawhide Hill onion), *Carpenteria californica* Torr. (carpenteria), *Fritillaria striata* Eastw. (Greenhorn adobe lily), *Lupinus citrinus* Kell. var. *deflexus* (Congd.) Jeps. (Mariposa lupine), *Mimulus shevockii* Heckard and Bacig. (Kelso Creek monkeyflower), and *Navarretia setiloba* Cov. (Piute Mountains navarretia) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

One occurrence of *Allium tuolumnense* is threatened by a subdivision at the Rawhide Hill locality. This occurrence is the type locality that once covered several hundred hectares but has now been reduced to 14 ha (35 ac) as a result of land clearing activities to build houses (CNDDB 1997). Another occurrence of *A. tuolumnense* is threatened by development of a subdivision near Chinese Camp at the Jamestown locality (Brad Michalk and Robin Wood, Tuolumne County Planning Department, pers. comm. 1997; CNDDB 1997). Land clearing activities for the subdivision near the Chinese Camp involved the construction of roads, fences, and house locations, which reduced colonies numbering from 10,000 plants to just a few individual plants (Pat Stone, California Native Plant Society, *in litt.* 1997; Rich Hunter, Central Sierra Environmental Resources Center, pers. comm. 1997). An additional occurrence of *A. tuolumnense* occurs in the open spaces of a recently approved subdivision; however, the occurrence is not directly threatened by the construction of houses (Robert Preston, LSA Consultants, Inc., *in litt.* 1994). Urbanization has destroyed one occurrence of *A. tuolumnense* and firebreak construction and road construction have destroyed another portion of another occurrence (Blaine Rogers, botanist, *in litt.* 1983, 1990; CNDDB 1997). An estimated 75 percent of the occupied habitat of *A. tuolumnense,* however, occurs on lands administered by the BLM and is not threatened by urbanization. Another occurrence of *A. tuolumnense* on land owned by the Tuolumne County Irrigation District has been irrigated through the spring, summer, and fall with reclaimed wastewater from Quartz in 1996 and 1997 (P. Stone, pers comm. 1997). Effects of irrigation to this occurrence are unknown. Four occurrences that were reported as being threatened by commercial placer gold mining at the time of the proposed rule are no longer threatened as the mining company has gone out of business (R. Wood, pers comm. 1997).

Threats to two occurrences of *Carpenteria californica* by development that were cited at the time of the proposed rule have not been substantiated by construction of any specific proposed subdivisions or specific development proposals

(CNDDB 1997). Future subdivisions still could threaten some of the habitat of the estimated 30 percent of the plants that occur on private lands. However, urbanization does not threaten the remaining 70 percent of the range of *C. californica* that occurs on lands managed by the Sierra National Forest. The construction of a new University of California campus that could have potentially threatened one occurrence of *C. californica* in western Fresno County is no longer a threat because a Merced County site was selected for the new campus location. Although illegal dumping has been reported to occur at two occurrences of *C. californica* on the Sierra National Forest, no further impacts to these occurrences have been reported since 1987 (CNDDB 1997). The Service considers illegal dumping to be a minor, localized threat of little significance to the overall status of the species. The continued grading of access roads underneath powerlines and around power towers continues to pose a potential threat to part of one occurrence of *C. californica* on the Sierra National Forest. The Service also considers this to be a minor threat. The small-scale logging impacts to *C. californica* on the Sierra National Forest reported in the proposed rule have not occurred and are not anticipated to occur at a significant enough level to warrant continued consideration as a threat at this time. The proposed realignment and expansion of a portion of California State Highway 168 into a four-lane freeway that was reported to potentially threaten portions of two occurrences of *C. californica* in the proposed rule will most likely not be constructed within the next 20 years (Dana York, California Department of Transportation, pers. comm. 1997), and, therefore, is not currently a threat to the species.

Prior to the publication of the proposed rule, three occurrences of *Fritillaria striata* in Tulare County and one occurrence in Kern County had been extirpated as a result of urbanization and agricultural land conversion (CDFG 1991; CNDDB 1997). Agricultural land conversion threatens two extant occurrences of *F. striata* in Tulare County (CNDDB 1997). A firebreak bisects part of one occurrence of *F. striata* in Kern County (CNDDB 1997). Road maintenance threatens another occurrence of *F. striata* in Kern County (CNDDB 1997). No specific threats have been identified to the remaining 20 or more sites of *F. striata*. Moreover, the Service received two reports regarding a total of at least ten and as many as sixteen previously unknown populations of *F. striata* (Ralph L. Phillips, University of California Cooperative Extension, *in litt.* 1997; Mark Mebane, Kern County Cattlemen's Association, *in litt.* 1995). The Service is unable to identify any threats to these previously unknown populations of *F. striata*.

Two occurrences of *Lupinus citrinus* var. *deflexus* may be threatened directly or indirectly by urbanization. Disturbance associated with suburban foothill development damaged one occurrence of *L. c.* var. *deflexus* in the early 1980s. Since then, this occurrence appears to be recovering (CDFG 1989). *Lupinus citrinus* var. *deflexus* plants at this site comprise approximately 14 percent of the occupied acreage (CNDDB 1997). A pad for a house was prepared approximately 12 m (40 ft) up slope from the plants (CDFG 1992b; Michael Ross, Yosemite Institute, *in litt.* 1992), and a garage, driveway, domestic trees and a drip system have also impacted the area of this occurrence (Lynn Lozier and Rich Reiner, The Nature Conservancy, *in litt.* 1990). The plants may be indirectly impacted by overwatering and use of herbicides or pesticides (M. Ross, *in litt.* 1992). A second occurrence of *L. c.* var. *deflexus*, including approximately 57 percent of the known acreage, occurs on a ranch that has been for sale (Ann Mendershausen, Mariposa Resource Conservation District, pers. comm. 1993, 1997; CNDDB 1997). The four remaining occurrences of *L. c.* var. *deflexus* are not threatened by specific development proposals at this time.

At the time of the proposed rule, six occurrences of *Mimulus shevockii* were thought to be threatened by mobile home development and associated road construction. The Service has been able to verify that development on private land may directly impact two of these six occurrences. Development on private land may directly impact *M. shevockii* at two occurrences that are each a mixture of private and BLM lands (S. Carter, *in litt.* 1995c, 1996; CNDDB 1997). At two of the new *M. shevockii* occurrences, house construction was occurring on land where *M. shevockii* grows (S. Carter, *in litt.* 1996). The private land at the second site is subdivided (S. Carter, *in litt.* 1995c), but the Service is unaware of specific development plans for the site. Additionally, at two occurrences managed by BLM, development of adjacent private lands may indirectly impact *M. shevockii* growing on the BLM lands (S. Carter, *in litt.* 1995b; CNDDB 1997). Agricultural land conversion may also threaten the species at one of these same sites (CNDDB 1997). The remaining occurrences representing BLM, private, and a mixture of private and BLM lands are not known to be threatened by urbanization at this time.

One occurrence of *Navarretia setiloba* is threatened by urbanization where activities such as construction of a housing pad and parking area have impacted the species (Lynn Overtree, The Nature Conservancy, *in litt.* 1993, 1994, 1995; CNDDB 1997). At the time of the proposed rule, two additional occurrences of *N. setiloga* were reportedly threatened by urbanization, one in the Lake Isabella area and one near Grapevine Peak (Diane Mitchell, botanist, pers. comm. 1992). The Service has been unable to verify specific threats to these two occurrences and to the occurrence of *N. setiloga* in the Caliente area. Additionally, recent survey information is lacking for the southernmost occurrence of *N. setiloga* near Grapevine Peak and for the two westernmost occurrences of *N. setiloga* in the Greenhorn Mountains. Although threats from urbanization to one of the six occurrences of *N. setiloga* have been verified, the Service is unaware of specific development proposals that would affect the other five occurrences of *N. setiloga*. Therefore, the Service finds that *N. setiloga* is not imminently threatened due to these activities at this time.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Overutilization is not known to be a factor affecting the taxa considered in this withdrawal.

C. Disease or Predation

In the proposed rule (59 FR 50545), livestock grazing was identified as a potential threat to eight occurrences of *Allium tuolumnense* on BLM lands in the Red Hills Area of Critical Environmental Concern (ACEC). Although the BLM authorized livestock grazing in the Red Hills in 1995 through 1997, no impacts to *A. tuolumnense* from livestock grazing have been reported.

Two occurrences of *Carpenteria californica* on Sierra National Forest lands were cited in the proposed rule (59 FR 50546) as threatened by overgrazing. It is now known that cattle do not readily consume mature plants (J. Clines, *in litt.* 1997), and the Service no longer believes livestock grazing to be a threat to mature individuals. However, livestock grazing and trampling destroys seedlings of *C. californica*. In a three-year study of seedling establishment after a wildfire, less than 10 percent of

C. californica seedlings survived and most of them were destroyed by livestock grazing and trampling (Clines 1994). Livestock, however, do not graze all populations of *Carpenteria*. For example, several square miles of occupied *Carpenteria* habitat occur within the Carpenteria Botanical Area, an area not grazed by livestock because it is not in an allotment and not subject to trespass grazing because of impassable terrain (J. Clines, *in litt.* 1997). In addition, successful sexual reproduction does occur in areas accessible to livestock, such as a cohort that established after a 1989 wildlife and have now reached heights of up to 240 cm (94 in) (J. Clines, *in litt.* 1997).

Livestock grazing occurs at most of the occurrences of *Fritillaria striata*. Seven observers have reported a variety of livestock grazing impacts to many of the occurrences of *F. striata* (CNDDB 1997). These seven observers were not trained in range management nor did they have knowledge of grazing history at some locations of *F. striata*. Based upon visual observations regarding the amount and severity of impacts to individual plants and the habitat of *F. striata*,, the reports have ranged from light grazing pressure on three occurrences of *F. striata* in Kern County to overgrazing and/or trampling as serious threats to the species at three other locations of *F. striata* in Kern County (CNDDB 1997). The latter reports have led to the interpretation that such observations of grazing impacts to *F. striata* were general descriptions of rangeland conditions reflecting poorly on good land stewardship and/or grazing practices, or that livestock must be excluded to ensure the survival of the species. Some of the same observers, however, have reported that low levels of livestock grazing with avoidance during the flowering season may benefit the species (CDFG 1992c). The long term effects of grazing and/or trampling to *F. striata* are currently unknown. The Service concludes that direct consumption of the plant and/or destruction caused by trampling of the flowers has been repeatedly and independently observed. The Service finds, therefore, that not all livestock grazing threatens the species, but under some circumstances, livestock overgrazing and/or trampling may threaten three occurrences of *F. striata* in Kern County (CNDDB 1997).

In the proposed rule, overgrazing by cattle was also identified as a potential threat to *Lupinus citrinus* var. *deflexus* (59 FR 50540), but this threat has not been substantiated. Since grazing was identified as a threat in the early 1980's, the plants are now apparently recovering in the two occurrences where grazing and trampling were reported to have damaged populations of *L. c.* var. *deflexus* (CDFG 1989; CNPS 1990; CDFG 1992b). At least one occurrence of *L. c.* var. *deflexus* is currently grazed by livestock, but it is not thought to be a threat to the population (CDFG 1989, CNDDB 1997, A. Mendershausen, pers. comm. 1997). The long-term effects of light grazing or trampling on the plants are currently unknown (CDFG 1989, CNDDB 1997).

D. The Inadequacy of Existing Regulatory Mechanisms

The State of California Fish and Game Commission has listed *Carpenteria californica, Fritillaria striata,* and *Lupinus deflexus* (now known as *Lupinus citrinus* var. *deflexus*) as threatened species (Chapter 1.5 § 2050 *et seq.* of the California Fish and Game Code and Title 14 California Code of Regulations 670.2). Although the ''take'' of State-listed plants is prohibited (California Native Plant Protection Act, Chapter 10 § 1908 and California Endangered Species Act, Chapter 1.5 § 2080), State law exempts the taking of such plants via habitat modification or land use changes by the owner. After CDFG notifies a landowner that a State-listed plant grows on his or her property, State law only requires that the land owner notify the agency ''at least 10 days in advance of changing the land use to allow salvage of such a plant'' (Native Plant Protection Act, Chapter 10 § 1913).

On September 29, 1997, legislation was approved for the California Fish and Game Code that ''declares that if any provision of this chapter requires a person to provide mitigation measures or alternatives to address a particular impact on a candidate species, threatened species, or endangered species, the measures or alternatives required shall be roughly proportional in extent to any impact on those species that is caused by that person. Where various measures or alternatives are available to meet this obligation, the measures or alternatives required shall maintain the person's objectives to the greatest extent possible with this section'' (Johnston and Machado 1997). California Senate Bill 879, passed in 1997 and effective January 1, 1998, requires individuals to obtain a section 2081(b) permit from CDFG to take a listed species incidental to otherwise lawful activities, and requires that all impacts be fully mitigated and all measures be capable of successful implementation. These requirements have not been tested and several years will be required to evaluate their effectiveness for conservation of species.

The California Environmental Quality Act (CEQA) requires a full disclosure of the potential environmental impacts of proposed projects. The public agency with primary authority or jurisdiction over the project is designated as the lead agency, and is responsible for conducting a review of the project and consulting with the other agencies concerned with the resources affected by the project. Section 15065 of the CEQA Guidelines requires a finding of significance if a project has the potential to ''reduce the number or restrict the range of a rare or endangered plant or animal.'' Species that are eligible for listing as rare, threatened, or endangered but are not so listed are given the same protection as those species that are officially listed with the State or Federal governments. Once significant effects are identified, the lead agency has the option to require mitigation for effects through changes in the project or to decide that overriding considerations make mitigation infeasible. In the latter case, projects may be approved that cause significant environmental damage, such as destruction of endangered species. Protection of listed species through CEQA is therefore dependent upon the discretion of the agency involved. In addition, CEQA guidelines recently have been revised in ways which, if made final, may weaken protections for threatened, endangered, and other sensitive species.

Despite the potential inadequacies in existing regulatory mechanisms, the Service has found insufficient substantive evidence of threats to the six plant taxa in this notice of withdrawal to warrant their listing as threatened or endangered species under the Act. In the absence of such threats, the potential inadequacies of these regulatory mechanisms are irrelevant.

E. Other Natural or Manmade Factors Affecting its Continued Existence

OHV use has been reported as a threat to *Allium tuolumnense, Lupinus citrinus* var. *deflexus, Mimulus shevockii,* and *Navarretia setiloba.* However, only one occurrence of *A. tuolumnense* inside the BLM Red Hills ACEC is threatened by OHV use (CNDDB 1997). Historic damages to two other occurrences of *A. tuolumnense* have been reported from OHV use, but no recent impacts have been noted at those locations (CNDDB 1997). OHV use was reported as a threat to parts of four occurrences of *Carpenteria californica.* Because no further impacts to these occurrences have been reported since

1987, the Service considers that there are no threats to these four occurrences. Previously, OHV use destroyed some plants at one occurrence of *L. c.* var. *deflexus* (CDFG 1989). However, the Service has not received information regarding any further OHV use or recent damage at this site. An OHV road bisects one occurrence of *M. shevockii* and a gravel road bisects another occurrence (CNDDB 1997). Ongoing OHV activity could threaten this plant at this one location. Currently, off-highway vehicle use has been observed at four sites where *M. shevockii* occurs (S. Carter, *in litt.* 1995b, 1995c, 1995d, 1996; CNDDB 1997), but the Service has not received information indicating that the magnitude of the impacts to *M. shevockii* are likely to threaten the continued existence of the species. One occurrence of *N. setiloba* has been disturbed by OHV use in the past (CNDDB 1997), but the Service has not received further information indicating that this activity continues to be a threat at the site.

Fire suppression activities and development took place in the northerly occurrence of *Mimulus shevockii* in 1997. A bulldozer was driven through part of the occurrence and a log deck built on top of another part of the occurrence. *Mimulus shevockii* plants and habitat were directly impacted by these activities (S. Carter, pers. comm. 1997b). Events like these are considered by the Service to be localized and do not pose a significant threat to the survival of the species.

Since the time of the proposed rule, the need for fire management for the successful sexual reproduction of *Carpenteria californica* on the Sierra National Forest was recognized, and work is underway in the Kings River and Pineridge ranger districts constructing a network of the necessary fuelbreaks prior to commencement of a five-year controlled burning program (*J. Clines, in litt.* 1997). The first area scheduled to be burned is the Carpenteria Botanical Area because the area is not in a cattle allotment. Trespass cattle will not be a problem due to the rocky terrain, eliminating the conflict with cattle grazing after prescribed burns (J. Clines, *in litt.* 1997). Although the Sierra National Forest has taken some necessary steps to proactively conserve the species on Federal lands, the difficulties in conducting necessary prescribed burns with multiple private land owners may pose a threat to *C. californica* on private lands which contain the remaining 30 percent of the species. To date, no prescribed burns of *C. californica* on private forest lands have been conducted with the assistance of the California Department of Forestry and Fire under its Vegetation Management Program, the enhancement of sexual reproduction of the species (Bill Richards, California Department of Forestry and Fire Protection, pers comm. 1997). Therefore, the Service considers the lack of necessary fire management of *C. californica* on private lands to be a potential threat to the species.

Although *Fritillaria striata* may be threatened by competition from non-native grasses such as *Avena* (wild oat) and *Bromus* (brome) as mentioned in the proposed rule, the Service has received no credible scientific data to suggest that any populations of *F. striata* have been adversely affected or losses of populations have occurred as a result of such competition.

Small population size or fluctuations to small size increase the susceptibility of a population to extirpation from random demographic, environmental and/or genetic events (Shaffer 1981, 1987; Lande 1988; Meffe and Carroll 1994). Population sizes of 100 or fewer are known for one or more populations of *Allium tuolumnense, Fritillaria striata, Lupinus citrinus* var. *deflexus,* and *Navarretia setiloba* (CNDDB 1997). Because of the clonal nature of *A. tuolumnense* (BioSystems Analysis 1984), actual numbers of genetic individuals in populations of this species may be even smaller than reported. Demographic events that may put small populations of these four species at risk involve random fluctuations in survival and reproduction of individuals (Shaffer 1981, 1987; Lande 1988; Meffe and Carroll 1994). Environmental events that may put small populations at risk include random or unpredictable fluctuations in the physical environment such as changes in the weather (Shaffer 1981, 1987; Primack 1993; Meffe and Carroll 1994). These species may be subject to increased genetic drift and inbreeding as a consequence of their small population sizes (Menges 1991, Ellstrand and Elam 1993). Populations that are continually small in size are particularly susceptible to genetic changes due to drift. However, drift may also cause genetic changes in populations that occasionally fluctuate to small sizes (e.g. undergo population bottlenecks). Increased homozygosity resulting from genetic drift and inbreeding may lead to a loss of the ability of individuals to survive and reproduce (genetic fitness) in small populations. In addition, reduced genetic variation in small populations may make any species less able to successfully adapt to future environmental changes (Ellstrand and Elam 1993). Thus, portions of four of the six species are threatened by potential loss of genetic fitness and/or genetic variability as well as by demographic and environmental uncertainty associated with small population sizes.

Five of the six species addressed in this rule are known from few populations and/or from very small ranges. *Carpenteria californica, Lupinus citrinus* var. *deflexus, Mimulus shevockii,* and *Navarretia setiloba* are each known from eight or fewer occurrences (CNDDB 1997). Although *Allium tuolumnense* is known from more than eight occurrences, the species is known only from four general localities comprising a 342 sq km (132 sq mi) area. The distribution in each locality is much smaller than the overall range indicates, approximately 90 sq km (35 sq mi) in the Red Hills, 23 sq km (9 sq mi) at Quartz Mountain, 10 sq km (4 sq mi) at Table Mountain, and less than 3 sq km (1 sq mi) in the Moccasin area (CNDDB 1997). Similarly, *N. setiloba* is composed of a few small, widely scattered populations within a larger 4,000 sq km (1,560 sq mi) range. Currently, known occupied habitat of *N. setiloba* consists of less than 6.5 ha (16 ac) (CNDDB 1997). *Lupinus citrinus* var. *deflexus* and *M. shevockii* are known from very small ranges. The range of *L. c. var.* deflexus is only 40 sq km (15 sq mi) (CNDDB 1997). *Mimulus shevockii* grows within two general areas, the larger southern portion comprising about 31 sq km (12 sq mi) (CNDDB 1997). Few populations, small range, and/or restricted habitat make these five species highly susceptible to extinction or extirpation from a significant portion of their ranges due to random events, such as flood, drought, disease, or other occurrences (Shaffer 1981, 1987; Meffe and Carroll 1994). Such events are not usually a concern until the number of populations or geographic distribution become severely limited, as is the case with the species discussed here. Once the number of populations, the range, or the plant population size is reduced, the remnant populations, or portions of populations, have a higher probability of extinction from random events.

Finding and Withdrawal

After a thorough review and consideration of all information available the Service has determined that listing of *Allium tuolumnense, Carpenteria californica, Fritillaria striata, Lupinus citrinus* var. *deflexus, Mimulus shevockii,* and *Navarretia setiloba* is not needed at this time. The Service has carefully assessed the best

scientific and commercial information available in the determination of whether to list these species.

At the time of the proposed rule, *Allium tuolumnense* was thought to be threatened by urbanization, overgrazing, mining, and OHV use on 25 percent of its range on private lands. The remaining 75 percent of the population on public lands was potentially threatened by grazing. Subsequently, the Service has not been able to verify that overgrazing occurs at the grazed sites on public or private lands. The threats posed by commercial placer mining no longer exist because the mining company is no longer in business. The development of three subdivisions has impacted several occurrences of *A. tuolumnense* on private lands. However, because 75 percent of the occurrences of *A. tuolumnense* are on public lands, urbanization is not and will not be a major threat to the species over most of its range. Although historic damage from OHV use has been reported on two occurrences of *A. tuolumnense,* only one occurrence is considered currently threatened by OHV use. Two occurrences of *A. tuolumnense* are threatened by road maintenance. Thus, collectively, the Service has been able to verify threats to 6 of the 21 occurrences of *A. tuolumnense.* The small range, its restricted serpentine habitat, and clonal distribution of A. tuolumnense make this species susceptible to local extirpation from portions of its range due to random environmental events, but this threat, in the absence of other significant threats to the species, is insufficient to warrant listing under the Act. Therefore, the Service finds that *A. tuolumnense* is not threatened with extinction throughout all or a significant portion of its range nor is it likely to become an endangered species within the foreseeable future and does not meet the definition of a threatened or endangered species.

At the time of the proposed rule, *Carpenteria californica* was thought to be threatened by urbanization, highway construction, maintenance of roads and rights-of-way in connection with hydroelectrical operations, competition from native brush species, logging, illegal dumping, incompatible fire management activities, overgrazing, inadequate regulatory mechanisms, and OHV use over one third of its range on private lands. *Carpenteria californica* was thought to be threatened by alteration of natural fire cycles, OHV use, and maintenance of roads and rights-of-way on the remaining two-thirds of its range on public lands. Historic impacts from urbanization, illegal dumping, logging, OHV use, and road maintenance have occurred on a small-scale basis and constitute low magnitude, imminence, and frequency impacts to *C. californica.* Although 30 percent of the range of *C. californica* has been lost, a low likelihood exists that a significant portion of the remaining individual plants or habitat will be lost in the foreseeable future because 70 percent of the remaining plants exist on the Sierra National Forest which has started a program to enhance the sexual reproduction of the species using prescribed fire. Fire management for the successful reproduction of the species followed by three years rest from livestock grazing needed for the longterm survival of the species is not occurring on private lands. Consequently, the Service considers that continued fire suppression and non-management of *C. californica* on private lands threatens the species across the 30 percent of its range on private lands. Highway construction will not take place for at least another 20 years and would impact one portion of one occurrence of *C. californica.* Although the Service has information regarding the adverse impacts of overgrazing and trampling to seedlings of *C. californica,* no information has been presented to verify any adverse effects of grazing on mature plants on private or public lands over the range of the species. Further, no scientific information has been presented to suggest that competition from native brush species has any adverse impact to *C. californica.* Although *C. californica* is known from seven localities, including a new occurrence since the publication of the proposed rule, over a relatively large range, the species has few occurrences and is susceptible to extirpations from random environmental events. Therefore, the Service concludes that *C. californica* is not threatened with extinction throughout all or significant portion of its range nor is it likely to become an endangered species within the foreseeable future and does not meet the definition of threatened or endangered.

Prior to the proposed rule, agricultural land conversion extirpated three occurrences of *Fritillaria striata* in Tulare County and one in Kern County and continues to threaten two occurrences in Tulare County. Road maintenance threatens one occurrence and livestock grazing may threaten three occurrences of *F. striata* in Kern County. Five occurrences of *F. striata* have populations numbers of less than 100 individuals each and are susceptible to extirpation from random demographic, environmental and/or genetic events. The collective threats to 11 of the 23 known occurrences, including six new occurrences since the proposed rule was published, and the lack of specific threats to the numerous unverified occurrences of *F. striata* ,are insufficient across the range of the species to warrant listing the species at this time. Therefore, the Service finds that *F. striata* is not threatened with extinction throughout all or a significant portion of its range in the foreseeable future and does not meet the definition of a threatened or endangered species.

At the time of the proposed rule, *Lupinus citrinus* var. *deflexus* was thought to be threatened by urbanization and inadequate State regulatory mechanisms, and potentially by overgrazing. Subsequently, the Service has not been able to verify that overgrazing occurs at the grazed sites where *L. c.* var. *deflexus* is found. Continued or future urbanization may threaten at least two occurrences of *L. c.* var. *deflexus.* Inadequate State regulatory mechanisms and extirpation from random events due to small population sizes, small number of populations, and the restricted range of the species may threaten all occurrences of *L. c.* var. *deflexus.* However, the Service has been unable to verify imminent threats to four of the six occurrences of *L. c.* var. *deflexus.* Therefore, the Service finds that *L. c.* var. *deflexus* is not threatened with extinction throughout all or significant portion of its range nor is it likely to become an endangered species within the foreseeable future and does not meet the definition of threatened or endangered.

At the time of the proposed rule, occurrences of *Mimulus shevockii* were threatened by urbanization, OHV use, and agricultural land conversion. Currently, development on-site or on adjacent private land and OHV use have been observed at four occurrences (S. Carter, *in litt.* 1995b, 1995c, 1995d, 1996; CNDDB 1997). During the comment periods, the Service received information that the range of the species may be greater than understood at the time of the proposed rule and that potential additional habitat requires surveying. Agricultural land conversion may also threaten one of these same occurrences (CNDDB 1997). The most threatened portion of the range may be the private lands in the disjunct northwest occurrence. Reported threats to this occurrence include development, OHV use, agricultural land conversion, and fire suppression actions (S. Carter, *in litt.* 1995c, 1996; S. Carter, pers. comm. 1997b; CNDDB 1997). Because this portion of the range is both the most

northerly and disjunct, any activities that threaten its continued existence may constitute a threat to the species as a whole. Although urbanization, OHV use, agriculture land conversion, and random extirpation from the small number of populations and the restricted range of the species continue to put *M. shevockii* at risk, current threats that warrant listing of the species have not been identified and three additional occurrences have been discovered. Therefore, the Service finds that *M. shevockii* is not threatened with extinction throughout all or a significant portion of its range in the foreseeable future and does not meet the definition of a threatened or endangered species.

At the time of the proposed rule, *Navarretia setiloba* was thought to be threatened by urbanization and OHV use. Current and future urbanization and OHV use potentially threaten the two occurrences in the Lake Isabella area (L. Overtree, *in litt.* 1993, 1994, 1995; CNDDB 1997). Future urbanization may threaten at least one other occurrence of *N. setiloba* but no specific development proposals are known. This species is at risk from random extirpation due to small population sizes, small numbers of populations, and the restricted range of the species. The Service lacks the specific information indicating that listing is warranted for *N. setiloba* at this time. Based on all of this information, the Service finds that *N. setiloba* is not threatened with extinction throughout all or a significant portion of its range, and it is not likely to become an endangered species within the foreseeable future and does not meet the definition of a threatened or endangered species.

References Cited

A list of all references cited herein is available upon request from the U.S. Fish and Wildlife Service Sacramento Fish and Wildlife Office (see ADDRESSES section).

Author. The primary authors of this withdrawal notice are Diane Elam, Kenneth Fuller, and Dwight Harvey, Sacramento Fish and Wildlife Office Field Office (see **ADDRESSES** section).

Authority

The authority for this action is section 4(b)(6)(B)(ii) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: September 1, 1998.

Jamie Rappaport Clark,

Director, U.S. Fish and Wildlife Service.

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