

Dated: March 14, 2000.

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Director, Fish and Wildlife Service.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AE81

Endangered and Threatened Wildlife and Plants; Final Rule for Endangered Status for Four Plants From South Central Coastal California

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), have determined endangered status for *Cirsium loncholepis* (La Graciosa thistle), *Eriodictyon capitatum* (Lompoc yerba santa), *Hemizonia increscens* ssp. *villosa* (Gaviota tarplant), and *Lupinus nipomensis* (Nipomo Mesa lupine), pursuant to the Endangered Species Act (Act) of 1973, as amended. These plants are in danger of extinction because their habitats have been significantly reduced over time by residential, commercial, agricultural, and oil and gas development. Their remaining habitats have been adversely affected by development, military activities, alteration of natural fire cycles, and the invasion of nonnative plant species. The limited distribution and small population sizes of these four species also make them more vulnerable to extinction from naturally occurring catastrophic events. Existing regulations do not provide adequate protection to prevent further losses from ongoing activities. This rule will extend the Act's protection to these plants.

EFFECTIVE DATE: This rule is effective April 19, 2000.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the Ventura Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2493 Portola Road, Suite B, Ventura, California 93003.

FOR FURTHER INFORMATION CONTACT: Tim Thomas, Botanist, at the above address (telephone 805/644-1766; facsimile 805/644-3958).

SUPPLEMENTARY INFORMATION:

Background

Cirsium loncholepis (La Graciosa thistle), *Eriodictyon capitatum* (Lompoc

yerba santa), *Hemizonia increscens* ssp. *villosa* (Gaviota tarplant), and *Lupinus nipomensis* (Nipomo Mesa lupine) occur along the south central California coast. They are restricted to a narrow area in northern and western Santa Barbara County, southern San Luis Obispo County, and southern Monterey County.

These species occur in sensitive, declining or altered habitats including central dune scrub, central maritime chaparral, valley needlegrass grassland, coastal freshwater wetlands, and southern bishop pine forest (Holland 1986; Schoenherr 1992). Two of these habitats, central dune scrub and coastal freshwater wetlands, are notable for their geological and biological value. The largest coastal dune system in California, the Guadalupe Dune region, is located in southern San Luis Obispo County near Guadalupe, where approximately 47 square kilometers (sq km) (18 sq miles (mi)) of active dunes create a series of back dune lakes. The Department of the Interior added the Guadalupe Dune region to the National Natural Landmark system in 1980, recognizing the biological and physical diversity of the area (Schoenherr 1992).

Lupinus nipomensis is wholly restricted to these dunes. *Cirsium loncholepis* is also restricted to these dunes with the exception of a small disjunct population in southern Monterey County (California Natural Diversity Data Base (CNDDB) 1998). The coastal dune habitats are highly disturbed, and all habitat remnants have been invaded by nonnative plant species. Invasive weeds such as *Ehrharta calycina* (veldt grass), *Ammophila arenaria* (European beach grass), *Carpobrotus edulis* (iceplant), and *Mesembryanthemum crystallinum* (crystalline iceplant) are serious threats to the natural ecological processes of coastal sandy habitats and to the viability of *L. nipomensis* and *C. loncholepis* (Smith 1976; Zedler and Scheid 1988; Schoenherr 1992).

Inland from the active dunes, remnants of prehistoric uplifted dunes have formed a weakly cemented sandstone that has weathered to produce a sandy, extremely well drained, and nearly infertile soil (Davis *et al.* 1988). This substrate has a limited distribution, occurring on the following mesas in the area: Nipomo Mesa, Casmalia Hills, San Antonio Terrace, Burton Mesa, Lompoc Terrace, and Purisima Hills. The habitat that occurs on these sand hills has been called the central coast maritime chaparral and has been the focus of several studies (Ferren *et al.* 1984; Davis *et al.* 1988; Philbrick and Odion 1988; Davis *et al.* 1989;

Odion *et al.* 1992). Two of the locations of *Eriodictyon capitatum* occur in maritime chaparral. Seven local endemic plant species, and at least 16 other uncommon plant species, are also components of this habitat. This community type is an exceptional biological resource due to the concentration of rare plants found within it, but most of it has been converted to other land uses or degraded by weed invasion and habitat fragmentation (Davis *et al.* 1988; Odion *et al.* 1992). Central coast maritime chaparral is considered threatened and sensitive by the California Department of Fish and Game's (CDFG) Natural Heritage Division (Holland 1986). Southern bishop pine (*Pinus muricata*) forest is scattered in the Purisima Hills and intergrades with the central coast maritime chaparral (Holland 1986).

Hemizonia increscens ssp. *villosa* is associated with the rare needlegrass grasslands, composed of native purple needlegrass (*Nassella* spp.). The habitat intergrades with coastal sage scrub made up of *Artemisia californica* (California sagebrush), *Baccharis pilularis* (coyote bush), and *Hazardia squarrosa* (sawtooth golden bush).

Discussion of the Four Species

Cirsium loncholepis

Cirsium loncholepis (La Graciosa thistle) was collected by Eastwood in 1906 near the village site of La Graciosa (razed in 1877 and the current site of Orcutt) in San Luis Obispo County (Smith 1976). *Cirsium loncholepis* is a short-lived (1 to 2 years), spreading, mound-like or erect, and often fleshy, spiny member of the sunflower family (Asteraceae). Plants are from 1 to 10 decimeters (dm) (4 to 40 inches (in.)) in height, with one to several stems. The leaves are wavy-margined. The lower leaves are 10 to 30 centimeters (cm) (4 to 12 in.) long with spiny petioles and usually deeply lobed with secondary lobes or teeth. The leaf base of the middle and upper leaves forms short, spiny wings along the petiole. The flower heads are in tight clusters at the tips of the stems. Flowering heads are 2 to 4 cm (0.8 to 1.6 in.) wide. The corollas are 25 to 30 millimeters (mm) (1 to 1.2 in.) long and more or less white with a purplish tube containing purple anthers. This species closely resembles *Cirsium brevistylum* (Indian thistle), a taller plant with the upper portion covered with cobwebby hairs. The leaves of *C. brevistylum* are shallowly lobed, whereas the leaves of *C. loncholepis* are deeply lobed with secondary lobes (Keil and Turner 1993).

Cirsium loncholepis is largely restricted to back dune and coastal wetlands of southern San Luis Obispo County and northern Santa Barbara County, from the Pismo Dunes lake area and south historically to the Santa Ynez River. The Guadalupe Dune complex, in which the majority of the species occurs, extends inland only up to 3.2 kilometers (km) (2 miles (mi)). Deflation areas behind the foredunes often intersect the water table, creating wetlands and back dune lakes. *Cirsium loncholepis* is found in wet soils surrounding the dune lakes and in the moist dune swales, where it is often associated with *Juncus* spp. (rush), *Scirpus* spp. (tule), *Salix* spp. (willow), *Toxicodendron diversilobum* (poison oak), *Distichlis spicata* (salt grass), and coyote brush (Hendrickson 1990). The historic distribution of the species included extensive areas in the Orcutt region that have been converted from wetland habitat to agricultural uses or otherwise developed. Large populations, similar to an existing one at the mouth of the Santa Maria River, likely occurred in these areas prior to their conversion. As early as 1950, Smith studied the lack of suitable habitat for *C. loncholepis* in the vicinity of La Graciosa (Smith 1976). Historic maps show the area covered with extensive wetlands, which no longer exist (Hendrickson 1990). One small population has been reported from moist openings in coastal scrub habitat in a coastal drainage in southern Monterey County (Vern Yadon, pers. comm. 1998).

There are 17 known locations for *Cirsium loncholepis*. The populations in the dune systems are small and isolated, and show a reduced reproductive vigor (Hendrickson 1990). Seven of the populations are reported to have fewer than 60 plants each (CNDDDB 1998). Only one population has had a substantial number of plants, fluctuating between 6,000 and 54,000 individuals. However, it is located at the mouth of the Santa Maria River in the floodplain, where it was significantly disrupted by flooding in 1998 (John Chesnut, private consultant, *in litt.* 1998). Surveys in 1998 of five known population locations found that all of them were much reduced or apparently extirpated since surveys were conducted in 1990 (J. Chesnut, *in litt.* 1998). The declines apparently are due to the change in habitat as riparian willows and other vegetation invade the areas that previously supported this wet meadow plant (J. Chesnut, *in litt.* 1998).

Ongoing threats to this species include groundwater pumping, oil field development, and competition from nonnative plants (Hendrickson 1990;

CDFG 1992). Cattle grazing in the riparian habitat at the mouth of the Santa Maria River may reduce the competition from other species (Hendrickson 1990), but the long-term effects of livestock use on the habitat are unknown. All but one population of *C. loncholepis* are on private lands. A small population occurs in the Los Padres National Forest in southern Monterey County. The trend for *C. loncholepis* has been one of decline (CDFG 1992; CNDDDB 1998). The State listed this species as threatened in 1990 (CDFG 1992).

Eriodictyon capitatum

Eriodictyon capitatum (Lompoc yerba santa) was collected by Hoffman in 1932 near Lompoc growing under bishop pine and described the following year (Eastwood 1933). *Eriodictyon capitatum* is a shrub in the waterleaf family (Hydrophyllaceae) with sticky stems up to 3 meters (m) (10 feet (ft)) tall. The sticky leaves are narrowly linear. The head-like inflorescence has lavender corollas that are 6 to 15 mm (0.2 to 0.6 in.) long. It is distinguished from related species by its narrow, entire leaves and its head-like inflorescence (Halse 1993).

Eriodictyon capitatum occurs in maritime chaparral with *Dendromecon rigida* (bush poppy), *Quercus berberidifolia*, *Q. parvula* (scrub oaks), and *Ceanothus cuneatus* (buck brush) and in southern bishop pine forests that intergrade with chaparral *Arctostaphylos* spp. (manzanita) and *Salvia mellifera* (black sage) (Smith 1983). The four known locations of the *E. capitatum* occur in western Santa Barbara County. Two of these locations, composed of three groups, are on Vandenberg Air Force Base (VAFB). The other two locations are on private land in the oilfields south of Orcutt (comprising one group) and at the western end of the Santa Ynez Mountains (made up of three groups). Based on isozyme analysis, Elam (1994) determined that two of the VAFB groups are apparently uniclonal, a single plant composed of many stems produced by the vegetative spread of the root system. All of the Santa Ynez Mountains colonies, and the remaining group at VAFB, were multiclinal. The Orcutt location was not studied due to inaccessibility. The three Santa Ynez Mountains groups ranged from 11 to 20 clones each. The three VAFB groups ranged from 1 to 18 clones each.

Eriodictyon capitatum is self-incompatible (i.e., it requires pollen from genetically different plants to produce seed), and its fruits appear to be parasitized by an insect (Elam 1994). A study of one of the apparently

uniclonal groups at VAFB showed that *E. capitatum* successfully resprouted from the base of the plant after a prescribed fire. However, several stems died, and no seedling recruitment occurred; a uniclonal, self-incompatible plant would be expected to produce little or no seed (Jacks *et al.* 1984).

Fire management practices, invasive nonnative plant species, low seed productivity, and naturally occurring catastrophic events pose significant threats to the long-term survival of this species. None of the colonies are actively protected. *Eriodictyon capitatum* was listed as rare by the State of California in 1979 (CDFG 1992).

Hemizonia increscens ssp. villosa

Hemizonia increscens ssp. villosa (Gaviota tarplant) is a member of the sunflower family. Tanowitz (1982) described this plant from collected material, as well as a specimen gathered in 1902 by Elmer near Gaviota, 24 km (15 mi) west of Santa Barbara.

Hemizonia increscens ssp. villosa is a yellow-flowered, variable gray-green, soft, hairy annual that is 3 to 9 dm (12 to 35 in.) tall with stems branching near the base. The lower leaves are 5 to 8.6 cm (2 to 3.4 in.) long. The inflorescence is rounded to flat-topped with mostly 13-ray flowers and 18 to 31 disk flowers that are usually sterile. Two other subspecies, *H. increscens ssp. increscens* and *H. increscens ssp. foliosa*, differ from *H. increscens ssp. villosa* by their stiff-bristly, deep-green foliage; however, chemical composition is the best means to differentiate these species (obtained from a glycone exudate, which can be tested easily with thin layer chromatography) (Keil 1993; Katherine Rindlaub, Biological Consulting, *in litt.* 1998). Occasional observations of 13-rayed *H. increscens ssp. increscens* are reported as *H. increscens ssp. villosa* (K. Rindlaub, *in litt.* 1998).

Hemizonia increscens ssp. villosa has a highly localized distribution in western Santa Barbara County, where it is associated with needlegrass grasslands dominated by *Avena* spp. (a nonnative wild oat), and occasional native purple needlegrass, that intergrade with coastal sage scrub composed of California sagebrush, coyote bush, and sawtooth golden bush. Its habitat lies on an uplifted, narrow marine terrace 46 to 60 m (150 to 200 ft) above sea level. The plant is restricted to Conception and Milpitas-Positas soils, which consist of acidic, fine, sandy loams (All American Pipeline Company (AAPC) 1990). A subsurface clay layer, 2.5 to 90 cm (1 to 36 in.) deep, may serve as a reservoir of

soil moisture in an area otherwise characterized by summer drought (Howald 1989). *Hemizonia increscens* ssp. *villosa* consistently occurs where the depth to clay is only 2.5 to 5 cm (1 to 2 in.) (K. Rindlaub, *in litt.* 1998).

Hemizonia increscens ssp. *villosa* is known only from a narrow, 3.5-km (2.2-mi) long band of coastal terrace situated between the Santa Ynez Mountains and the ocean near Gaviota. Within this band, one scattered population occurs on a total of about 24 hectares (ha) (60 acres (ac)) of habitat. The patches are often separated by no more than 100 m (330 ft) and represent one extended population (Howald 1989). Other pockets of Concepcion and Milpitas-Positas soils occur along the coast to the west and east of Gaviota, where the vegetation continues to be altered by development, cattle grazing, and farming. Repeated extensive surveys have been conducted without positive verification of *H. increscens* ssp. *villosa* in these areas (Howald 1989). As is typical of annual plant species, the number of individuals present from 1 year to the next varies dramatically, depending on climatic conditions and other factors. In some years, patches may contain few to no individuals (Howald 1989). In 1995 and 1997, the taxon was not abundant at any location (K. Rindlaub, pers. comm. 1995, *in litt.* 1998).

The narrow coastal terrace is bisected lengthwise by Highway 101, a railroad, and several pipelines. Most of the habitat for *Hemizonia increscens* ssp. *villosa* lies on the north side of the highway on private lands owned by the petroleum industry. A few colonies occur on the south side of Highway 101 on land owned by the California Department of Parks and Recreation.

Hemizonia increscens ssp. *villosa* is threatened by destruction of individual plants, habitat loss, and degradation from the development of oil and gas facilities, including pipelines, and competition with nonnative weeds. The trend for this taxon has been one of decline (CDFG 1992). *Hemizonia increscens* ssp. *villosa* was listed as endangered by the State of California in 1990 (CDFG 1992).

Lupinus nipomensis

Lupinus nipomensis (Nipomo mesa lupine) was collected in 1937 by Eastwood and Howell from Nipomo Mesa, San Luis Obispo County; Eastwood subsequently published a description of the species (Eastwood 1939). Although Munz and Keck (1959) submerged *L. nipomensis* as a synonym of *L. concinnus*, other authors, including the most recent treatment,

recognize *L. nipomensis* as a species (Abrams 1944; Riggins 1993). *Lupinus nipomensis* is an annual member of the pea family (Fabaceae). It is 1 to 2 dm (4 to 8 in.) tall and hairy with decumbent stems. The leaves, with 5 to 7 leaflets, are 10 to 15 mm (0.4 to 0.6 in.) long and 5 to 6 mm (0.2 to 0.23 in.) wide. The inflorescence is not whorled, and the flowers are 6 to 7 mm (0.23 to 0.3 in.) long with pink petals. *Lupinus nipomensis* is distinguished from the related *L. concinnus* by its decumbent inflorescence, succulent leaflets, lack of axillary flowers, and restriction to sand dune habitat (Walters and Walters 1988).

Lupinus nipomensis grows in stabilized back dune habitat of the Guadalupe dunes in the southwestern corner of San Luis Obispo County. The plant occurs as 1 extended population made up of 7 colonies with fewer than 700 plants. The small patches are spread over 2.4 km (1.5 mi). At least three historical localities have been extirpated, including its type locality (CDFG 1992; CNDDDB 1998). The majority of the habitat is considered degraded by either physical disturbance or invasion by nonnative weedy species (Walters and Walters 1988). Even high-quality habitat is adversely affected by impacts from nonnative invasive species. Under the best conditions, the species occurs in dune swales with a higher diversity of native annuals and widely spaced individuals of *Ericameria ericoides* (mock heather), a small native subshrub. In both types of habitat, *L. nipomensis* requires pockets of bare sand, suggesting a low tolerance for competition (Walters and Walters 1988).

All known occurrences of *Lupinus nipomensis* are on private lands and remain unprotected. The primary threat to the species is the uncontrolled invasion of aggressive nonnative weeds, especially veldt grass, and the subsequent displacement of the species. The plant was listed by the State as endangered in 1987, and the trend has been one of decline (CDFG 1992).

Previous Federal Action

Federal action on these plants began as a result of section 12 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*), which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct in the United States. This report (House Document No. 94-51) was presented to Congress on January 9, 1975, and included *Cirsium loncholepis* and *Eriodictyon capitatum* as endangered. We published a notice in the July 1,

1975, **Federal Register** (40 FR 27823) of our acceptance of the Smithsonian Institution report as a petition within the context of section 4(c)(2) (petition provisions are now found in section 4(b)(3)) of the Act, and our intention to review the status of the reported plant species.

On June 16, 1976, we published a proposal in the **Federal Register** (41 FR 24523) to determine approximately 1,700 vascular plant species to be endangered species pursuant to section 4 of the Act. *Cirsium loncholepis* and *Eriodictyon capitatum* were included in this **Federal Register** publication. General comments received in relation to the 1976 proposal were summarized in an April 26, 1978, **Federal Register** publication (43 FR 17909). The Endangered Species Act Amendments of 1978 required that all proposals over 2 years old be withdrawn. A 1-year grace period was given to those proposals already more than 2 years old. In the December 10, 1979, **Federal Register** (44 FR 70796), we published a notice of withdrawal of the June 16, 1976, proposal, along with four other proposals that had expired.

We published an updated Notice of Review (NOR) for plants on December 15, 1980 (45 FR 82480). This notice included *Cirsium loncholepis*, *Eriodictyon capitatum*, and *Lupinus nipomensis* as category 1 candidate species. Category 1 candidates were formerly defined as species for which we had on file substantial information on biological vulnerability and threats to support preparation of listing proposals, but issuance of a proposed rule was precluded by other listing activities of higher priority. On November 28, 1983, we published a supplement to the NOR in the **Federal Register** (48 FR 53640), in which *C. loncholepis* and *L. nipomensis* were included as category 2 candidates. Category 2 formerly included species for which information in our possession indicated that proposing to list as endangered or threatened was possibly appropriate, but for which sufficient data on biological vulnerability and threats were not available to support a proposed rule.

The plant NOR was again revised on September 27, 1985 (50 FR 39526). In this notice, *Eriodictyon capitatum* was included as a category 1 candidate, and *Cirsium loncholepis* and *Lupinus nipomensis* remained category 2 candidates. On February 21, 1990 (55 FR 6184), and September 30, 1993 (58 FR 51144), revised NORs were published that included *C. loncholepis*, *E. capitatum*, *Hemizonia increscens* ssp. *villosa*, and *L. nipomensis* as category 1

candidates. On February 28, 1996, we published an NOR in the **Federal Register** (61 FR 7596) that discontinued the designation of category 2 species as candidates. That notice included as candidates only those species meeting the former definition of category 1, and included the four species in this rule. They maintained candidate status in the NORs published on September 19, 1997 (62 FR 49398), and October 15, 1999 (64 FR 57534).

Section 4(b)(3)(B) of the Act requires the Secretary to make certain findings on pending petitions within 12 months of their receipt. Section 2(b)(1) of the 1982 amendments further requires that all petitions pending on October 13, 1982, be treated as having been newly submitted on that date. That provision of the Act applied to *Cirsium loncholepis*, *Eriodictyon capitatum*, *Hemizonia increscens* ssp. *villosa*, and *Lupinus nipomensis*, because the 1975 Smithsonian report had been accepted as a petition. On October 13, 1983, we found that the petitioned listing of this species was warranted but precluded by other pending listing actions, in accordance with section 4(b)(3)(B)(iii) of the Act; notification of this finding was published on January 20, 1984 (49 FR 2485). Such a finding requires the petition to be recycled, pursuant to section 4(b)(3)(C)(i) of the Act. The finding was reviewed annually in October of 1984 through 1995. On March 30, 1998, a proposed rule to list *Cirsium loncholepis*, *Eriodictyon capitatum*, *Hemizonia increscens* ssp. *villosa*, and *Lupinus nipomensis* as endangered was published in the **Federal Register** (63 FR 15164).

The processing of this final rule conforms with our Listing Priority Guidance published in the **Federal Register** on October 22, 1999 (64 FR 57114). The guidance clarifies the order in which we will process rulemakings. Highest priority is processing emergency listing rules for any species determined to face a significant and imminent risk to its well-being (Priority 1). Second priority (Priority 2) is processing final determinations on proposed additions to the lists of endangered and threatened wildlife and plants. Third priority is processing new proposals to add species to the lists. The processing of administrative petition findings (petitions filed under section 4 of the Act) is the fourth priority. This final rule is a Priority 2 action and is being completed in accordance with the current Listing Priority Guidance.

We have updated this rule to reflect any changes in information concerning distribution, status, and threats since the publication of the proposed rule and

to incorporate information obtained through the public comment period. This additional information did not alter our decision to list these species.

Summary of Comments and Recommendations

In the March 30, 1998, proposed rule, we requested interested parties to submit comments or information that might contribute to the final listing determination for these four plant species. We sent announcements of the proposed rule to appropriate Federal and State agencies, county and local governments, scientific organizations, and other interested parties, and requested comments. During the public comment period, nine written comments were received. Eight of the commenters provided additional data and information concerning the threats, biology, and ecology of the subject species. We evaluated this information and incorporated it into the final determination, as appropriate. A single issue raised by one commenter that is relevant to the listing of the plant species is summarized as follows, along with our response:

Issue: The Federal Government, and hence the U.S. Fish and Wildlife Service, does not have the authority to list a species found in only one State, and we exceeded the scope of the Federal commerce power under the Commerce Clause of Article I, section 8 of the U.S. Constitution.

Our Response: The Federal Government has the authority under the Commerce Clause of the U.S. Constitution to protect these species, for the reasons given in Judge Wald's opinion and Judge Henderson's concurring opinion in *National Association of Home Builders v. Babbitt*, 130 F.3d 1041 (D.C. Cir. 1997), *cert. denied*, 1185 S.Ct. 2340 (1998). That case involved a challenge to application of the Act's prohibitions to protect the listed Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*). As with the species in this rule, the Delhi Sands flower-loving fly is endemic to only one State. Judge Wald held that application of the Act's prohibition against taking of endangered species to this fly was a proper exercise of Commerce Clause power to regulate (1) use of channels of interstate commerce; and (2) activities substantially affecting interstate commerce, because applying the Act in that case prevented destructive interstate competition and loss of biodiversity. Judge Henderson upheld protection of the fly because doing so prevents harm to the ecosystem upon which interstate commerce depends and

regulates commercial development that is part of interstate commerce.

The Federal Government also has the authority under the Property Clause of the Constitution to protect *Cirsium loncholepis* occurring in the Los Padres National Forest. If this species were to become extinct or extirpated, the diversity of plant life in the Los Padres would be diminished. The courts have long recognized Federal authority under the Property Clause to protect Federal resources in such circumstances. See e.g., *Kleppe v. New Mexico*, 429 U.S. 873 (1976); *United States v. Alford*, 274 U.S. 264 (1927); *Camfield v. United States*, 167 U.S. 518 (1897); *United States v. Lindsey*, 595 F.2d 5 (9th Cir. 1979).

Peer Review

We solicited formal scientific peer review of the proposal in accordance with our July 1, 1994, Interagency Cooperative Policy for Peer Review (59 FR 34270). We requested three individuals who possess expertise in botany and/or conservation biology to review the proposed rule by the close of the comment period. We received comments from two of the three reviewers within the comment period. Both concurred with our position on factors relating to the taxonomy of the species and the biological and ecological information. One provided additional information on threats. We considered their comments and incorporated the additional information into the final rule.

Summary of Factors Affecting the Species

Section 4 of the Act and regulations (50 CFR part 424) issued to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1) of the Act. These factors and their application to *Cirsium loncholepis* Petrak (La Graciosa thistle), *Eriodictyon capitatum* Eastw. (Lompoc yerba santa), *Hemizonia increscens* ssp. *villosa* B.D. Tanowitz (Gaviota tarplant), and *Lupinus nipomensis* Eastw. (Nipomo Mesa lupine) are as follows:

A. The present or threatened destruction, modification, or curtailment of its habitat or range. Habitat fragmentation and alteration of species composition and vegetation structure threaten the long-term survival of all of the species in this rule. These species have extremely limited natural distributions (*Eriodictyon capitatum* and *Hemizonia increscens* ssp. *villosa*)

or reduced distributions resulting from loss of habitat (*Cirsium loncholepis* and *Lupinus nipomensis*).

Eriodictyon capitatum is associated with the central maritime chaparral and bishop pine forest, which are threatened habitat types with limited distribution and rich in plant species of limited distribution (Holland 1986). Most of the central maritime chaparral has been converted to a variety of land uses, and degraded by development, weed invasion, habitat fragmentation, and other factors (Hoover 1970; Davis *et al.* 1988; Odion *et al.* 1992; CNDDDB 1998). Iceplant invasion threatens to convert the maritime chaparral into a habitat dominated by mats of the exotic succulent (Odion *et al.* 1992). Iceplant was documented as an invasive in habitat occupied by *E. capitatum* following a prescribed fire (Jacks *et al.* 1984). Veldt grass, seeded in controlled burns and used for soil stabilization at VAFB, has become widespread and naturalized (Smith 1976; Jones and Stokes Associates 1997). Comparison of historic and current photographs of habitat similar to that occupied by *E. capitatum* show no veldt grass in 1973, whereas in 1997, the same site was dominated by veldt grass (Chris Gillespie, VAFB, pers. comm. 1997).

Department of Defense base closures across the nation have resulted in the relocation of activities to those bases that remain operational. Facility maintenance and development for military and private commercial purposes planned at VAFB are likely to result in additional loss and alteration of habitat occupied by *Eriodictyon capitatum* (Al Nadel, VAFB, pers. comm. 1993).

With considerable competition for use of the commercial spaceport on the base by 25 to 30 companies and launches anticipated to occur every 2 weeks (C. Gillespie, pers. comm. 1995), missile launch operations could adversely affect habitats surrounding launch facilities. For example, in 1993, a missile was destroyed shortly after launching at VAFB, and a series of brush fires caused by burning rocket fuel burned more than 162 ha (400 ac). Large fragments of metal blasted downward toward the ground caused physical damage to the habitat (Wallace 1993). In September 1997, a 200-ha (500-ac) fire and a 600-ha (1,500-ac) fire burned near occupied habitat of *Eriodictyon capitatum* (Los Angeles Times 1997a). Fire containment lines constructed by bulldozers in the vicinity of the species were observed after the fire (J. Watkins, pers. comm. 1997). On November 1, 1997, a 495-ha (1,225-ac) fire that was accidentally set by an explosives disposal team at VAFB

was partially contained by back-burning an area containing a population of *E. capitatum* (Los Angeles Times 1997b). In addition, nonnaturally occurring fires facilitate the invasion of aggressive nonnative plant species into the maritime chaparral habitats. This occurrence will likely become more of a problem under the existing prescribed burn program and suppression activities (see factor E below).

Hemizonia increscens ssp. *villosa* occurs within a narrow 3.6-km (2.25-mi) band of coastal terrace grassland about 24 ha (60 ac) in extent. About 40 percent of the coastal terrace habitat within the known range of *H. increscens* ssp. *villosa* has been destroyed, altered, or fragmented by the construction of oil and gas facilities and pipelines. Projects during the past 5 years within the taxon's habitat include the installation of a water pipeline for the relocated Vista del Mar school, the proposed construction of the Pacific and Mariposa pipelines (oil/gas), and the Molino drilling station. The Molino parcel contains the single largest continuous population of *H. increscens* ssp. *villosa* (M. Meyer, pers. comm. 1996). Maintenance of pipelines and facilities will continue to disturb the species' habitat and encourage the establishment of invasive weed species.

Because the Santa Ynez Mountains occur only 0.4 km (0.25 mi) inland from the coastline, the relatively flat coastal terrace forms a natural corridor for any utility project passing between Gaviota Pass to the west and Santa Barbara to the east. All future projects that pass through this corridor are very likely to adversely affect habitat for the *Hemizonia increscens* ssp. *villosa* by further destroying, degrading, and fragmenting habitat. The highest quality habitat remains unprotected and lies within this pipeline corridor. In an attempt to mitigate habitat loss, a preserve area has been established by the oil industry within the corridor. However, it protects less than 5 percent of the habitat. Because invasive species must be managed intensively to prevent their dominance, whether this management area can sustain a colony of *H. increscens* ssp. *villosa* without ongoing maintenance is questionable (K. Rindlaub, pers. comm. 1995). Additional impacts to *H. increscens* ssp. *villosa* may result from a proposed bikepath on State Park property that will extend throughout most of the plant's range. The proposed bikepath will create a linear zone of disturbance that will act as a corridor for weed dispersal into pristine *H. increscens* ssp. *villosa* habitat (S. Treanor, State Park Superintendent, *in litt.* 1998). Also, as

the oil and gas industry abandons some of the facilities in Gaviota, proposed development options include recreational vehicle campgrounds, golf courses, a convention center, and residential housing (K. Rindlaub, *in litt.* 1998).

The Guadalupe Dunes, which contain the only known population of *Lupinus nipomensis* and the majority of the populations of *Cirsium loncholepis*, have been extensively developed and altered for petroleum extraction (Rindlaub *et al.* 1985). About one-third of the historic occurrences of *C. loncholepis* have been extirpated (CDFG 1992). While the future extent of development and habitat alteration is unknown at this time, continued energy-related operations, including maintenance activities, hazardous waste cleanup, and other commercial development that result in additional habitat modification, remain a predominant threat (CDFG 1992). Ground water extraction in the Guadalupe Dunes and vicinity is thought to have diminished the total area of suitable habitat of *C. loncholepis* by lowering the water table and drying the wetlands (Smith 1976; Hendrickson 1990; CDFG 1992). Hydrological alterations remain a significant threat to this taxon (CDFG 1992). At least 3 historic populations of *L. nipomensis*, including the type locality, have been extirpated. Development, along with invasion by nonnative plant species (see factor E below), are the primary threats to this species (CDFG 1992).

B. Overutilization for commercial, recreational, scientific, or educational purposes. Overutilization is not currently known to be a factor for these plants. However, simply listing a species could attract commercial or scientific interest, both legal and illegal, which can threaten the species through unauthorized and uncontrolled collection. Unrestricted collecting for scientific or horticultural purposes, and impacts from excessive visits by individuals interested in seeing rare plants could result in a reduction of plant numbers and seed production. These species have such small populations that even limited collecting pressure could have significant impacts.

Vandalism is also a concern for these species. For example, approximately one-third of a *Lupinus nipomensis* colony was destroyed by bulldozer activity during road construction to provide staff access at the Oceano State Vehicular Recreation Area, in spite of staff knowledge of the location and rarity of this species (J. Chesnut, *in litt.* 1998).

C. Disease or predation. Disease is not known to be a factor affecting any of the species in this rule. Herbivory by pocket gophers (*Thomomys bottae*) has been documented to consume whole colonies of *Lupinus nipomensis* and is considered a major threat (Walters and Walters 1988). Veldt grass, a food source for pocket gophers, was observed to be increasing during the course of a 3-year monitoring program for *L. nipomensis* and is forming pure stands in the back dune habitat of *L. nipomensis* (Walters and Walters 1988; J. Chesnut, *in litt.* 1998). Veldt grass provides a year-round food source, thus creating artificially high densities of gophers and increased predation pressure upon *L. nipomensis*.

Several invertebrate species have been documented as predators of *Lupinus nipomensis*, reducing the vigor and seed production of this species. The most significant predator is an anthomyid fly (*Hylemya lupini*), whose larvae burrow into the terminal inflorescence, reducing seed production and sometimes killing the entire plant (Walters and Walters 1988). Other invertebrate predators noted are mites, the caterpillars of the common painted lady butterfly (*Vanessa cardui*), a noctuid moth that feeds on leaves (family Noctuidae), a tent-building microlepidopteran larva (family Pyralidae) that causes leaf damage, and a lupine blue butterfly larva (*Plebejus lupini monticola*) that feeds on seed pods (Walters and Walters 1988). Predation by these species does not threaten *L. nipomensis* in and of itself, but because of the limited range and small population size, predation in combination with other threats could adversely affect population viability.

Approximately 50 percent of the disk and ray achenes of *Hemizonia increscens* ssp. *villosa* have been observed to be infested by an unidentified flower beetle (K. Rindlaub, *in litt.* 1998).

Cattle grazing occurs within the habitats of *Cirsium loncholepis* and *Hemizonia increscens* ssp. *villosa*. Low levels of grazing may enhance the opportunities for both species to propagate successfully, as it may serve to reduce competition from nonnative species. However, recent evidence indicates that heavy grazing has affected individuals of *H. increscens* ssp. *villosa* by reducing their stature and the number of seeds that can be produced. Cattle grazing in the area west of the oil and gas facility appears to have facilitated the displacement of *H. increscens* ssp. *villosa* and favored the dominance of *H. fasciculata*, a common native tarplant (K. Rindlaub, *in litt.* 1998). Similar observations were made

in the Guadalupe dunes and along the Santa Maria River where *C. loncholepis* was adversely affected (Hendrickson 1990).

No known predation threats affect *Eriodictyon capitatum*.

D. *The inadequacy of existing regulatory mechanisms.* The California Fish and Game Commission has listed *Eriodictyon capitatum* as rare, *Cirsium loncholepis* as threatened, and *Hemizonia increscens* ssp. *villosa* and *Lupinus nipomensis* as endangered under the Native Plant Protection Act (NPPA) (chapter 1.5 sec. 1900 *et seq.* of the California Fish and Game Code), and the California Endangered Species Act (CESA) (chapter 1.5 sec. 2050 *et seq.*). 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 as applied to State-listed plants; it will be several years before their effectiveness can be evaluated. In the past, attempts to mitigate rare plant populations have often failed, largely due to inadequate consideration of a species' biological needs and inadequate protection and management of the mitigation site (Howald 1993).

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 other agencies concerned about 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." 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 State-listed species. Protection of listed species through CEQA, therefore, is dependent upon the discretion of the agency involved.

State agencies reviewing requests for large development projects are required by CEQA to conduct surveys of the biological resources of a project site.

Most public documents such as environmental impact reports are prepared by the project proponent for the State agency. Sensitive species located during surveys are to be reported to the CNDDDB, which is maintained by the CDFG Natural Heritage Division. If, however, the project proponent considers the information proprietary, consulting biologists may not report to the CNDDDB (Carl Wishner, Envicom Consulting, Agoura, California, pers. comm. 1999).

One of the species in this rule, *Cirsium loncholepis*, could potentially be affected by projects requiring a permit under section 404 of the Clean Water Act (CWA). Perennial freshwater emergent marshes and back dune wetlands are generally small and scattered, and treated as isolated wetlands or waters of the United States for regulatory purposes by the U.S. Army Corps of Engineers (Corps) under section 404. However, the CWA by itself does not protect *C. loncholepis*. For example, Nationwide Permit No. 26 (33 CFR part 330 Appendix B (26)) was established by the Corps to facilitate issuance of permits for discharge of fill into wetlands up to 1.2 ha (3 ac). For project proposals falling under this permit, the Corps seldom withholds authorization unless a listed threatened or endangered species' continued existence would likely be jeopardized by the proposed action. Current section 404 regulations require an applicant to obtain an individual permit to fill isolated wetlands or waters larger than 1.2 ha (3 ac). In either case, candidate species receive no special consideration. Additionally and equally important, the upland watersheds that contribute significantly to the hydrology of marshes are not provided any direct protection under section 404. Alterations of hydrology resulting from groundwater pumping are thought to pose the most likely and serious threat to *C. loncholepis*. No permit is required under the CWA for groundwater pumping. As a consequence, the habitat of *C. loncholepis* receives insufficient protection under section 404.

Although several public agencies manage lands with occurrences of these and other sensitive, threatened and endangered species, none of those agencies have specific management plans for the species in this rule. Serious threats to the habitats of all of the plants in this rule persist and are not currently being addressed with active management (see factor E below). The CDFG prepared an unpublished management plan for the State-listed *Cirsium loncholepis* (Morey 1990), but

its recommendations have not yet been implemented.

Mitigation performed to satisfy CEQA requirements for *Hemizonia increscens* ssp. *villosa* has included salvaging seedbank and topsoil for transfer to a habitat creation site, seeding of areas disturbed by facility and pipeline construction, and enhancement of areas with low density of this taxon (AAPC 1990). These experimental mitigation measures are in progress, and the long-term success of treatments will not be known for years. As of 1997, none of the sites showed success (K. Rindlaub, *in litt.* 1998). *Hemizonia increscens* ssp. *villosa* does not compete well with other annual species, and long-term survival of relocated plants requires intensive maintenance to control nonnative weeds. These experimental mitigation measures focus on reintroducing the plant and not necessarily reestablishing the other elements of the habitat that would maintain the plant in perpetuity. If the original habitat has been destroyed and mitigation fails, the loss of the resource is irretrievable. Too little is known to predict the success of any mitigation measures that involve moving or creating habitat. Minimal soil disturbance and shrub removal, included as mitigation measures that enhanced *H. increscens* ssp. *villosa* germination, in the past may now result in colonization by veldt grass (K. Rindlaub, *in litt.* 1998).

The Los Padres National Forest is aware of the presence of *Cirsium loncholepis* on their land. No projects planned at this time will affect this species. Vandenburg Air Force Base (VAFB) does not have any planned projects that may affect *Eriodictyon capitatum*. However, with the listing of these species, both agencies will be required to consult with us on future projects.

E. Other natural or manmade factors affecting their continued existence. Other threats to the species in this rule include displacement by nonnative weeds, altered fire regimes, facility accidents by oil companies or VAFB, small population size, and loss of reproductive vigor. The most severe threat to the species in this rule is the active invasion and subsequent modification or conversion of habitat and displacement of native species by aggressive nonnative weeds such as European beach grass, iceplant, veldt grass, and crystalline iceplant (Davis *et al.* 1988; Zedler and Schied 1988; Morey 1989; Walters and Walters 1988; Odion *et al.* 1992; CNDDDB 1998; J. Chesnut, *in litt.* 1998). Current research and management approaches are inadequate to provide control of the problem of

nonnative plant invasions (Hobbs and Humphries 1995; Schierenbeck 1995). The California Exotic Pest Plant Council (CalEPPC) has compiled a list of the exotic pest plants of greatest ecological concern in California. The most invasive wildland pest plants that threaten native plants and natural habitats have been placed on two lists: list A-1 (widespread pest plants) and list A-2 (regional pest plants). European beach grass and iceplant are on list A-1, and veldt grass is on list A-2 (CalEPPC 1994). All of the habitats for the species in this rule are fragmented and dissected by roads and pathways that are the principal corridors for introduction of weedy species (Odion *et al.* 1992).

Iceplant, widely disseminated in the feces of deer and rabbits, tends to displace native plant species, particularly after fire or mechanical disturbance. Iceplant has been observed invading native vegetation occupied by *Eriodictyon capitatum* after a prescribed fire, resulting in a documented increase in iceplant cover from negligible to 26 percent 3 years after the fire. This increase was attributed to post-fire seedling production of over 7,800 iceplant seedlings per ha (2,800 per ac) the year after the fire, with a survivorship of over 70 percent 3 years later (Zedler and Schied 1988). After establishment, each plant can grow to over 6 m (18 ft) in diameter (Vivrette 1993), virtually replacing all other vegetation. The Air Force is currently conducting prescribed burns on VAFB for fuels management without a program to control the subsequent invasion of weedy species (J. Watkins, pers. comm. 1997). An effort is made occasionally to apply herbicides to a burn area; however, such an effort is ineffective without followup measures to ensure the control of the invasive species. Because fire is inevitable in natural habitats, and prescribed burns are utilized for hazard fuels reduction, iceplant and other invasive weed invasions will continue to degrade habitat and adversely affect *E. capitatum*, *Hemizonia increscens* ssp. *villosa*, and *Lupinus nipomensis*.

Other invasive plants, including Australian saltbush (*Atriplex semibaccata*), veldt grass, and wild oats threaten *Hemizonia increscens* ssp. *villosa* by displacement and the buildup of thatch (accumulated dead leaves and stems). *Hemizonia increscens* ssp. *villosa* requires open habitat in which to germinate and become established. Thatch from the nonnative grass species that dominate the habitat effectively prevents its establishment (K. Rindlaub, pers. comm. 1995).

In addition to affecting *Hemizonia increscens* ssp. *villosa*, veldt grass is actively invading habitat occupied by *Eriodictyon capitatum* and *Lupinus nipomensis* and is becoming a significant threat (Zedler and Schied 1988; Morey 1989; Walters and Walters 1988; Bonnie Walters, California Polytechnic State University, pers. comm. 1997; J. Chesnut, *in litt.* 1998; K. Rindlaub, *in litt.* 1998). Veldt grass prefers sandy soils and has the potential to persist for long periods of time. This nonnative grass has a mass of roots that captures the majority of the soil moisture, effectively outcompeting the native vegetation and dominating habitats as a monoculture (David Chipping, California Native Plant Society, pers. comm. 1997).

Used to control nonnatives, herbicides may inadvertently harm these species. For example, *Cirsium loncholepis* at Mud Lake was destroyed by herbicide application on poison oak (Hendrickson 1990; CNDDDB 1998). However, the significance of herbicide application as a threat to the survival of *C. loncholepis* or the other three species is unknown.

Eriodictyon capitatum and *Hemizonia increscens* ssp. *villosa* occupy habitats that experience periodic fires. Wildfires are an important component of natural ecosystems in California wildland habitats, and suppression of natural fires facilitates ecosystem degradation (Schoenherr 1992; Keeley 1995). All recent fires in the central maritime chaparral have been human-caused, resulting from arson, prescribed management, or accidental ignition (Philbrick and Odion 1988). The highly fragmented nature of the remaining chaparral habitat has ended the occurrence of large wildfires that burn under natural conditions in the coastal chaparral areas considered in this rule. Wildfire frequencies and intensities are not known, but estimates of historic burn intervals exceed 30 years. Wildfires naturally occur during high wind events that force the fire quickly through a stand of fuel, resulting in short burn durations and generally cooler ground temperatures. The use of prescribed burning as a management technique is restricted to periods when environmental conditions are favorable to preventing the spread of escaped fire, thus preventing a normal wildfire situation. Prescribed fire behavior does not mimic natural conditions, since low wind speed is required for control of the fire. Low wind speed causes an increase in the duration and intensity of the fire and results in higher mortality of seeds in the soil and reduced post-fire species diversity (Odion *et al.* 1992; Keeley

1995). Additionally, with the higher mortality of plants and seeds from a more intense fire, burned habitats are more susceptible to the rapid invasion by nonnative species that alter the type and structure of the plant community and, thus, future fuels for fires (Odion *et al.* 1992).

Petroleum-processing plant catastrophes are rare events, but have the potential to threaten the long-term survival of *Hemizonia increscens* ssp. *villosa* and *Lupinus nipomensis*, which have the smallest distributions of the species in this rule. All known individuals of *H. increscens* ssp. *villosa* are contained within a 3.2-km (2-mi) radius, and all known locations for *L. nipomensis* occur within a 1.2-km (0.75-mi) radius, of oil and gas refineries and associated storage facilities. The oil and gas facility, managed by at least 12 operating companies to consolidate pipelines and treating plants, is near the center of the distribution of *H. increscens* ssp. *villosa*. The Santa Maria TASC refinery and storage facilities are near the center of the distribution of *L. nipomensis*. These facilities occur in a tectonically complex and active region that is historically characterized by locally moderate to high earthquake activity, which can result in facility catastrophes (AAPC 1990). In the event of a facility catastrophe, the resulting habitat modification could destroy populations, causing the extinction of species with such extremely limited distribution.

All the species in this rule are vulnerable to naturally occurring events, such as failure to produce viable seed and catastrophic incidents. For example, *Eriodictyon capitatum* is self-incompatible and produces few viable seeds. In two colonies of this species, each presumably composed of a single genetic unit, virtually no seed production occurs (Elam 1994). Seeds of *Cirsium loncholepis* in small back dune populations have been shown to be of limited viability (Hendrickson 1990). Because of the small population sizes, the four species' vulnerability is heightened by natural events, such as drought, flooding, fires, earthquakes, outbreaks of insects or disease, or other catastrophic events, that could destroy a significant percentage of the individuals of these species.

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these species in making this rule final. The habitats for these species have been much reduced due to residential, commercial, agricultural, and oil and gas development. These species continue to

face threats from development, military activities, alteration of natural fire cycles, and invasion of nonnative species. The limited habitat for the four species and their small population sizes make *Cirsium loncholepis*, *Eriodictyon capitatum*, *Hemizonia increscens* ssp. *villosa*, and *Lupinus nipomensis* particularly vulnerable to extinction from naturally occurring events. Existing regulations do not provide adequate protection to prevent further losses; many actions that adversely affect these species and their habitats are ongoing. Because the four plant species are in danger of extinction throughout all or a significant portion of their ranges, they fit the Act's definition of endangered under the Act.

Critical Habitat

Critical habitat is defined in section 3, paragraph (5)(A) of the Act as the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and specific areas outside the geographical area occupied by a species at the time it is listed in accordance with the provisions of section 4 of the Act, upon a determination by the Secretary that such areas are essential for the conservation of the species. "Conservation" means the use of all methods and procedures needed to bring the species to the point at which listing under the Act is no longer necessary.

Critical habitat designation, by definition, directly affects only Federal agency actions through consultation under section 7(a)(2) of the Act. Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat.

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, we designate critical habitat at the time the species is determined to be endangered or threatened. Our regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist—(1) the species is threatened by taking or other activity and the identification of critical habitat can be expected to increase the degree of threat to the species or (2) such designation of

critical habitat would not be beneficial to the species.

In the proposed rule, we indicated that designation of critical habitat for these four species was not prudent because we believed it would not provide any additional benefit beyond that provided through listing as endangered, since most of the historical ranges of these plants occur on private land.

We find that designation of critical habitat is prudent for *Cirsium loncholepis*, *Eriodictyon capitatum*, *Hemizonia increscens* ssp. *villosa*, and *Lupinus nipomensis*. In the last few years, a series of court decisions have overturned Service determinations regarding a variety of species that designation of critical habitat would not be prudent (e.g., *Natural Resources Defense Council v. U.S. Department of the Interior* 113 F. 3d 1121 (9th Cir. 1997); *Conservation Council for Hawaii v. Babbitt*, 2 F. Supp. 2d 1280 (D. Hawaii 1998)). Based on the standards applied in those judicial opinions, we believe that the designation of critical habitat for these four species would be prudent.

Due to the small number of populations, *Cirsium loncholepis*, *Eriodictyon capitatum*, *Hemizonia increscens* ssp. *villosa*, and *Lupinus nipomensis* are vulnerable to unrestricted collection, vandalism, or other disturbance. We remain concerned that these threats might be exacerbated by the publication of critical habitat maps and further dissemination of locational information. However, we have examined the evidence available and have not found specific evidence of taking, vandalism, collection, or trade of these species or any similarly situated species. Consequently, consistent with applicable regulations (50 CFR 424.12(a)(1)(i)) and recent case law, we do not expect that the identification of critical habitat will increase the degree of threat to this species of taking or other human activity.

In the absence of a finding that critical habitat would increase threats to a species, if any benefits would result from critical habitat designation, then a prudent finding is warranted. In the case of these species, some benefits may result from designation of critical habitat. The primary regulatory effect of critical habitat is the section 7 requirement that Federal agencies refrain from taking any action that destroys or adversely modifies critical habitat. While a critical habitat designation for habitat currently occupied by these species would not be likely to change the section 7 consultation outcome because an action

that destroys or adversely modifies such critical habitat would also be likely to result in jeopardy to the species, in some instances, section 7 consultation might be triggered only if critical habitat is designated. Examples could include unoccupied habitat or occupied habitat that may become unoccupied in the future. Some educational or informational benefits may also result from designating critical habitat. Therefore, we find that critical habitat is prudent for *Cirsium loncholepis*, *Eriodictyon capitatum*, *Hemizonia increscens* ssp. *villosa*, and *Lupinus nipomensis*.

As explained in detail in the Final Listing Priority Guidance for FY2000 (64 FR 57114), our listing budget is currently insufficient to allow us to immediately complete all of the listing actions required by the Act. We anticipate in FY 2000 and beyond giving higher priority to critical habitat designation, including designations deferred pursuant to the Listing Priority Guidance, such as the designation for these species, than we have in recent fiscal years. We plan to employ a priority system for deciding which outstanding critical habitat designations should be addressed first. We will focus our efforts on those designations that will provide the most conservation benefit, taking into consideration the efficacy of critical habitat designation in addressing the threats to the species, and the magnitude and immediacy of those threats. Deferral of the critical habitat designation for these species will allow us to concentrate our limited resources on higher priority critical habitat and other listing actions, while allowing us to put in place protections needed for the conservation of *C. loncholepis*, *E. capitatum*, *H. increscens* ssp. *villosa*, and *L. nipomensis* without further delay. We will develop a proposal to designate critical habitat for *Cirsium loncholepis*, *Eriodictyon capitatum*, *Hemizonia increscens* ssp. *villosa*, and *Lupinus nipomensis* as soon as feasible, considering our workload priorities. Unfortunately, for the immediate future, most of Region 1's listing budget must be directed to complying with numerous court orders and settlement agreements, as well as due and overdue final listing determinations.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition

through listing encourages and results in public awareness and conservation actions by Federal, State, and local agencies, private organizations, and individuals. The Act provides for possible land acquisition and cooperation with the States, and requires that recovery actions be carried out for all listed species. Funding may be available through section 6 of the Act for the State to conduct recovery activities. The protection required of Federal agencies and the prohibitions against certain activities involving listed plants are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened, and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with us on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat, if designated. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with us, under section 7(a)(2) of the Act.

VAFB and the U.S. Forest Service will be required to consult with us on activities that may affect federally listed plant species found on their lands through the section 7 consultation process. While no activities are known at this time, future activities may affect populations of or habitat for *Cirsium loncholepis* and *Eriodictyon capitatum*. The Corps might become involved with *C. loncholepis* through its permitting authority as described under section 404 of the CWA. As previously discussed, nationwide or individual permits cannot be issued when a federally listed endangered or threatened species would be affected by a proposed project without first completing a section 7 consultation with us. In addition, sections 2(c)(1) and 7(a)(1) of the Act require Federal agencies to utilize their authorities in furtherance of the purposes of the Act to carry out conservation programs for endangered and threatened species.

Listing of these plants as endangered would provide for development of recovery plans for the plants. Such plans would identify both State and Federal efforts for conservation of the plants and establish a framework for agencies to coordinate activities and cooperate with each other in conservation efforts. The plans would set recovery priorities and describe site-specific management actions necessary to achieve conservation and survival of the plants. Additionally, pursuant to section 6 of the Act, we would be able to grant funds to affected States for management actions promoting the protection and recovery of these species.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered plants. All prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61 for endangered plants, would apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, sell or offer for sale in interstate or foreign commerce, or remove such plants from areas under Federal jurisdiction. In addition, the Act prohibits the malicious damage or destruction of such plants on areas under Federal jurisdiction and the removal, cutting, digging up, or damaging or destroying of such plants on any other area in knowing violation of any State law or regulation, or in the course of a violation of State criminal trespass law. Certain exceptions to the prohibitions apply to our agents and State conservation agencies.

The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered plant species under certain circumstances. Such permits are available for scientific purposes and to enhance the propagation or survival of the species. We anticipate that few trade permits would be sought or issued because these species are not in cultivation or common in the wild. Requests for copies of the regulations on listed plants and inquiries regarding them may be addressed to the U.S. Fish and Wildlife Service, Ecological Services, Permits Branch, 911 N.E. 11th Avenue, Portland, Oregon 97232-4181 (telephone 503/231-6241; facsimile 503/231-6243).

As published in the **Federal Register** on July 1, 1994 (59 FR 34272), our policy is to identify to the maximum extent practicable at the time a species is listed those activities that would or would not constitute a violation of

Species		Historic range	Family	Status	When listed	Critical habi- tat	Special rules
Scientific name	Common name						
FLOWERING PLANTS							
*	*	*	*	*	*	*	*
<i>Cirsium loncholepis</i>	La Graciosa thistle	U.S.A. (CA)	Asteraceae	E	691	NA	NA
*	*	*	*	*	*	*	*
<i>Eriodictyon capitatum.</i>	Lompoc yerba santa	U.S.A. (CA)	Hydrophyllaceae	E	691	NA	NA
*	*	*	*	*	*	*	*
<i>Hemizonia increscens</i> ssp. <i>villosa.</i>	Gaviota tarplant	U.S.A. (CA)	Asteraceae	E	691	NA	NA
*	*	*	*	*	*	*	*
<i>Lupinus nipomensis</i>	Nipomo Mesa lupine	U.S.A. (CA)	Fabaceae	E	691	NA	NA
*	*	*	*	*	*	*	*

Dated: March 13, 2000.

Jamie Rappaport Clark,

Director, Fish and Wildlife Service.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AE80

Endangered and Threatened Wildlife and Plants; Threatened Status for *Holocarpha macradenia* (Santa Cruz tarplant)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), have determined threatened status according to the Endangered Species Act of 1973, as amended, for *Holocarpha macradenia* (Santa Cruz tarplant). *Holocarpha macradenia* is an aromatic annual herb that is currently known from coastal grasslands and prairies in Contra Costa, Santa Cruz, and Monterey Counties, California. It is threatened by alteration and destruction of habitat due to historic and ongoing urban and commercial development, historic habitat alteration due to grazing, limited success of seed transplant populations, and competition from nonnative plants.

DATES: This rule becomes effective April 19, 2000.

ADDRESSES: The complete file for this rule is available for public inspection, by appointment, during normal business hours at the Ventura Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2493 Portola Road, Suite B, Ventura, California 93003.

FOR FURTHER INFORMATION CONTACT: Carl Benz, Assistant Field Supervisor, Listing and Recovery, Ventura Fish and Wildlife Office (see **ADDRESSES** section) (telephone number 805/644-1766; facsimile 805/644-3958).

SUPPLEMENTARY INFORMATION:

Background

Holocarpha macradenia (Santa Cruz tarplant) was first recognized by Augustin-Pyramus de Candolle, who published the name *Hemizonia macradenia* in 1836 (Ferris 1960). In 1897, E. L. Greene referred the species to the genus *Holocarpha* with publication of the new combination *Holocarpha macradenia* (DC.) E. Greene (Ferris 1960). This name continues to be

recognized in the most recent treatment for the genus (Keil 1993).

Holocarpha macradenia, an aromatic annual herb in the aster (Asteraceae) family, is one of only four species of *Holocarpha*, which are all geographically restricted to California. The genus name, derived from the Greek *holos* for whole and *karphe* for chaff, refers to the scales found among the florets on the receptacle (the structure that supports the florets in the daisy-like flower head). The plant is rigid, with lateral branches that arise to the height of the main stem, which is 1 to 5 decimeters (dm) (4 to 20 inches (in.)) tall. The lower leaves are broadly linear and up to 12 centimeters (cm) (5 in.) long. The upper leaves are smaller, with rolled back margins, and are truncated by a distinctive craterform gland. The yellow flower head is surrounded from beneath by individual bracts that have about 25 stout gland-tipped projections (Keil 1993). *Holocarpha macradenia* is distinguished from other members of the genus by its numerous ray flowers and black anthers. However, as with all other members of the genus, *H. macradenia* establishes seedbanks, so that sites that support a population of this plant, particularly those that support small populations (fewer than 100 individuals), may not display individuals in any given year, but still have a viable population in other years.

Habitat for *Holocarpha macradenia* historically consisted of grasslands and prairies found on coastal terraces below 100 meters (m) (330 feet (ft)) in elevation, from Monterey County, north to Marin County. In the 1800s, coastal prairies covered an estimated 350,000 hectares (ha) (865,000 acres (ac)) (Huenneke 1989). This coastal prairie habitat is becoming increasingly fragmented and restricted in distribution. Four major factors contributed to changes in the distribution and composition of coastal prairies: grazing; introduction of highly competitive, nonnative species; elimination of periodic fire; and cultivation (Heady *et al.* 1988). Currently, the California Department of Fish and Game's Natural Diversity Database (CNDDDB 1996, cited in Holl 1998) lists just over 800 ha (1977 ac) of high-quality coastal prairie remaining, of which less than 5 percent is *H. macradenia* habitat.

Holocarpha macradenia populations occur on the alluvium resulting from the terrace deposits (Palmer 1986). Typically terrace soils are sandy clay soils; the clay component of these soils holds moisture longer into the growing season compared to the surrounding sandy soils. In the Santa Cruz area, *H.*

macradenia exists on the gently sloping terrace platforms that are separated by steep-sided "gulches," whereas in the Watsonville (Santa Cruz County) and Monterey areas, and on the east side of San Francisco Bay, the terraces are more extensively dissected.

Although *Holocarpha macradenia* is historically associated with native herbaceous species and grasses (including other tarplants (*Hemizonia* sp.), needlegrass (*Nasella* sp.) and California oatgrass (*Danthonia californica*)), nonnative grasses, such as wild oats (*Avena fatua*), Mediterranean barley (*Hordeum hystris*), and bromes (*Bromus* sp.), have invaded its habitat. At some locations, *H. macradenia* is found with other species that may be threatened or endangered, including the Ohlone tiger beetle (*Cicindela ohlone*; federally proposed as endangered), San Francisco popcorn flower (*Plagiobothrys diffusus*; State-listed as endangered), Santa Cruz clover (*Trifolium buckwestiorum*; State-listed as a species of concern), and Gairdner's yampah (*Perideridia gairdneri*) (CNDDDB 1997). Other locally unique plant species, such as Choris's popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*), triteleia (*Triteleia ixiodes*), coast coyote thistle (*Eryngium armatum*), and San Francisco gumplant (*Grindelia hirsutula* var. *maritima*) also occur in these areas (Kathy Lyons, pers. comm. 1998).

Historically, *Holocarpha macradenia* was known from "low dry fields about San Francisco Bay" (Jepson 1925). Around the San Francisco Bay, herbarium collections were made from Tamalpais in Marin County in 1934; near Berkeley, Oakland, and San Lorenzo in Alameda County as early as 1894; and Pinole in Contra Costa County (CNDDDB 1997, Specimen Management System for California Herbaria (SMASCH) 1997). All of the native San Francisco Bay area populations have since been extirpated. The last remaining native population, known as the Pinole Vista population, consisting of 10,000 plants, was eliminated in 1993 by a commercial development (California Department of Fish and Game (CDFG) 1997).

In 1959, Keck (in Munz 1959) noted the species in Santa Cruz County, but also added that the species could possibly be extinct. Fortunately, numerous collections were made from the Monterey Bay area in Santa Cruz County in the late 1950s and early 1960s. In 1966 and 1969, Hoover made the first collection of the species in northern Monterey County, just south of the Santa Cruz County line (SMASCH 1997). Additional populations were found in Monterey County in the