2. Section 22.935(f)(5) is revised to read as follows:

§ 22.935 Procedures for comparative renewal proceedings.

* * * * *

(f) * * *

(5) Parties will have 30 days in which to file exceptions to the Initial Decision.

[FR Doc. 97–1699 Filed 1–28–97; 8:45 am]

BILLING CODE 6712–01–M

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AB88

Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for Two Plants and Threatened Status for Four Plants From Southern California

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines endangered status for *Astragalus brauntonii* (Braunton's milk-vetch) and *Pentachaeta lyonii* (Lyon's pentachaeta) and threatened status for *Dudleya abramsii* ssp. *parva* (Conejo dudleya), *Dudleya cymosa* ssp. *marcescens* (marcescent dudleya), *Dudleya cymosa* ssp. *ovatifolia* (Santa Monica Mountains dudleya), and *Dudleya verityi* (Verity's dudleya). These taxa occur in grassland, chaparral, or coastal sage scrub habitats in the mountains surrounding the Los Angeles basin, California. The six plants are threatened by one or more of the following—urban development, recreational activities, alteration of fire cycles and fire suppression activities, overcollecting, habitat fragmentation and degradation, and competition from invasive weeds. Several of the plants are also threatened by naturally occurring events by virtue of their small numbers and population sizes. This rule implements the protection and recovery provisions provided by the Endangered Species Act (Act) for these plants.

EFFECTIVE DATE: February 28, 1997.

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

FOR FURTHER INFORMATION CONTACT: Carl Benz, Assistant Field Supervisor, Ventura Field Office (see ADDRESSES section) (telephone: 805/644–1766; facsimile: 805/644–3458).

SUPPLEMENTARY INFORMATION:

Background

Astragalus brauntonii (Braunton's milk-vetch), *Pentachaeta lyonii* (Lyon's pentachaeta), *Dudleya abramsii* ssp. *parva* (Conejo dudleya), *Dudleya cymosa* ssp. *marcescens* (marcescent dudleya), *Dudleya cymosa* ssp. *ovatifolia* (Santa Monica Mountains dudleya), and *Dudleya verityi* (Verity's dudleya) are located around the Los Angeles basin, California. The lowland plains are bounded by mountains and hills that expose Mesozoic or older basement rocks and sedimentary and igneous rocks of late Cretaceous to late Pleistocene age. The southern portion of the Transverse Ranges forms the northern and western boundary of the basin and includes the San Gabriel Mountains, the Santa Monica Mountains, and the Simi Hills. The Santa Ana Mountains at the northern end of the Peninsular Ranges border the southern region of the basin.

Strong substrate preferences are exhibited by all of the taxa included in this rule. Populations of *Astragalus brauntonii* are only known to occur on small limestone outcrops. *Pentachaeta lyonii* is found on clay soils in ecotonal areas between grasslands and shrublands. All of the dudleyas occur on volcanic or sandstone rock outcrops with specific microhabitat characteristics. *Dudleya verityi* and *Dudleya abramsii* ssp. *parva* occur exclusively on the outcrops and soils derived from the Miocene Conejo volcanics at the western end of the Simi Hills and the Santa Monica Mountains. *Dudleya cymosa* ssp. *marcescens* occupies the lower slopes of volcanic cliffs in canyons that have perennial moisture. *Dudleya cymosa* ssp. *ovatifolia* is found on rock outcrops with forms specific to sedimentary conglomerate or volcanic breccia (Nakai 1987, Natural Diversity Data Base (NDDB) 1994).

Most of the major habitat types in which these rare plants occur are considered sensitive by the botanical community in California. Large scale loss of habitat, fragmentation, and alteration of natural ecosystem processes have resulted from development, fire suppression activities, cattle grazing, and vegetation type conversion by agricultural practices (Schoenherr 1989). *Astragalus brauntonii* is associated with the fire-dependent chaparral habitat dominated by *Adenostoma fasciculatum* (chamise), *Yucca whipplei* (yucca), and the rare *Cupressus forbesii* (Tecate cypress). *Dudleya abramsii* ssp. *parva* commonly occurs in a cactus-dominated coastal sage scrub, which provides nesting habitat for the rare Bell's sage sparrow (*Amphispiza belli belli*) and rufous-crowned sparrow (*Amophila ruficeps*). Most of the coastal sage scrub where *Dudleya verityi* occurs is dominated by *Artemisia californica* (coastal sagebrush), *Eriogonum fasciculatum* (wild buckwheat), *Salvia leucophylla* (purple sage), and occasionally *Coreopsis gigantea* (giant coreopsis). *Dudleya verityi* is associated with the rare *Eriogonum crocatum* (Conejo buckwheat) and *Dudleya blochmaniae* ssp. *blochmaniae* (Blochman's dudleya). A unique lichen flora of over 70 species is associated with *Dudleya verityi* and coastal sage scrub habitat on Conejo Mountain (Riefner 1992). The grassland habitat in which *Pentachaeta lyonii* occurs is largely dominated by introduced old world grass and herb genera such as *Avena*, *Brassica*, *Bromus*, *Centaurea*, and *Erodium*. Several native plant species are present in these grasslands, including the bunch grass *Nassella pulchra*.

Discussion of the Six Plant Taxa

Astragalus brauntonii was first collected in 1901 by Ernest Braunton near Sherman (now called West Hollywood), Los Angeles County. Samuel B. Parish described it two years later as *Astragalus brauntonii*. In 1929, Per Axel Rydberg published the name *Brachyphragma brauntonii* in his revision of the genus; however, this name was not recognized by most botanists. Rupert Barneby recognized the name *Astragalus brauntonii* in his *Atlas of North American Astragalus* (Barneby 1964). *Astragalus brauntonii* is included in the current edition of *The Jepson Manual* (Spellenberg 1993).

Astragalus brauntonii is a robust, short-lived perennial in the pea family (Fabaceae). It is one of the tallest members of the genus, reaching a height of 15 decimeters (dm) (60 inches (in.)) and is covered with woolly hairs. A thick taproot and woody basal stem gives rise to several to many stems. The 4 to 16 centimeter (cm) (1.5 to 6.5 in.) long leaves are pinnately compound with 25 to 33 oblong-ovate, abruptly pointed leaflets. The light purple flowers are clustered in 35- to 60-flowered racemes 4 to 14 cm (1.5 to 5.5 in.) long. The beaked, slightly curved pods are oblong-ovoid and 6.5 to 9 millimeters (mm) (2.5 to 3.5 in.) long. *Astragalus brauntonii* is readily distinguished from the only other perennial species of *Astragalus* in the

area, *A. trichopodus*, by being woolly as opposed to strigose (covered with sharp, stiff-appressed hairs) or glabrous (without hairs), and by having two-chambered rather than one-chambered pods (Barneby 1964).

Astragalus brauntonii is considered a limestone endemic; the only populations not found on limestone are on down-wash sites (seed drift following a fire event), an occurrence along the edge of a fire road in Monrovia, and at a location in Chino Hills (Sampson 1985) where the substrate type is unknown. Surveys for *A. brauntonii* during post-fire floristic inventories within its known distribution on substrates other than limestone have, to date, failed to indicate its presence on non-limestone soils. The potential occurrence of *A. brauntonii* on non-limestone soils should not be discounted; however, it is quite conspicuous and would be easily detected. Limestone outcrops are extremely rare within the limits of the known distribution of *A. brauntonii.*

Fire is a natural requirement for the survival of this species. The natural frequency of fire in the habitat of *Astragalus brauntonii* is unknown, but estimates range between 20 to over 100 years with an average of 70-year intervals (Minnich 1989, O'Leary 1990). Higher fire frequencies have resulted from increasing human populations in southern California, mostly in the form of arson-caused fires. This species has a life span of 2 to 3 years, and depending on fire interval, a given population is visible only once in 20 to 50 or more years.

Astragalus brauntonii is currently known from four general areas in Ventura, Los Angeles, and Orange counties. One population is found along the south slope of the Simi Hills of eastern Ventura and western Los Angeles counties. Two occurrences (one population) are known from Santa Ynez Canyon in the Santa Monica Mountains, Los Angeles County, which probably represents the type locality from above Sherman (now West Hollywood). Two occurrences (one population) are known from Coal and Gypsum Canyons in the Santa Ana Mountains, Orange County (NDDB 1994). Eight individuals were reported during the preparation of the Cloverleaf Canyon Specific Plan for the area in 1983 (J. Bitterly, biologist, Planning Consortium, *in litt.*, 1992) near where historical collections were made south of Clamshell Canyon, north of Monrovia in Los Angeles County.

Because reproduction of *Astragalus brauntonii* is stimulated by fire events, the total number of individuals varies with current fire cycles. The largest known population ever recorded was approximately 400 individuals (Orange County) in 1985 following a fire in 1982. No plants remain there today. Nearby habitat for *A. brauntonii* in the Cleveland National Forest was surveyed by endangered plant specialists from the Rancho Santa Ana Botanic Garden, but no plants were found (Mistretta 1992). The remaining populations contain no more than approximately 20 to 30 individuals and the current total number of individuals is estimated to be fewer than 100. The seed bank for *A. brauntonii* may have the capability of generating approximately 1,000 individuals in 4 highly subdivided populations.

Most of the habitat of *Astragalus brauntonii* is on private land in areas with expanding development. Four public agencies, the California Department of Parks and Recreation (DPR), the Conejo Open Space Conservation Agency (COSCA), the Rancho Simi Parks and Recreation District, and the National Park Service (NPS), have small colonies within their jurisdictions that may not be viable. All of the protected habitat occurs in the immediate vicinity of urban development. *Astragalus brauntonii* is threatened by direct loss from urban development, fragmentation of habitat and reduced capabilities for sustained ecologic processes, fragmented ownership of single populations resulting in different landscape treatments, alteration in fire cycles, and extinction from naturally occurring events due to small population sizes and low numbers of individuals (Mistretta 1992, NDDB 1994).

The name *Pentachaeta lyonii* (Lyon's pentachaeta) was first published by Asa Gray in 1886 (Van Horn 1973) based on a plant collected by William Lyon ''near Palos Verdes Mountain'' in Los Angeles County. David Keck (1958) renamed the plant *Chaetopappa lyonii,* which was subsequently recognized by Munz (1959). *Pentachaeta* is recognized as the accepted genus name based on a monograph on the taxonomic status of *Pentachaeta* and *Chaetopappa*, in which comparisons of morphology, anatomy, and breeding systems demonstrated that the two genera are not closely related (Van Horn 1973).

Pentachaeta lyonii is a 6 to 48 cm (2.4 to 18.9 in.) tall annual in the aster family (Asteraceae) with yellow flowers that bloom in late spring (April to June). It is distinguished from other members of the genus by its hairy phyllaries, larger numbers of pappus bristles, and its reddish branches originating from the upper portion of the plant. The corollas of the ray flowers are typically curled and the leaves are narrowly linear with ciliate margins (Van Horn 1973). There are no other members of the genus in the region.

Pentachaeta lyonii occupies pocket grassland sites that intergrade with shrublands, and the edges of roads and trails. Species typically associated with *P. lyonii* include *Chorizanthe staticoides* (turkish rugging), *Calochortus catalinae* (Catalina mariposa lily), *Nassella pulchra* (purple needle-grass), and annual members of the phlox family (Polemoniaceae) (Thomas and Danielsen 1984). Habitat of P. lyonii is characterized by a low percentage of total plant cover and exposed soils with a microbiotic crust (Belnap 1990), partially assisting in reducing competition with other species. Rodents (*Perognathus* spp. and *Peromyscus* spp.) and harvester ant colonies (*Pogonomyrex* spp.) also control the density of associated vegetation (Thomas and Wishner 1988).

There are very few collections of *Pentachaeta lyonii;* the majority were made around the turn of the century and from locations where the species has been extirpated, including Palos Verdes Peninsula and Santa Catalina Island.

The first record from the Santa Monica Mountains dates from 1926 from an unknown location in the Malibu Hills (NDDB 1994). It was not until 1964, when Peter Raven was collecting for the 1966 *Flora of the Santa Monica Mountains* that *P. lyonii* was again documented from the Santa Monica Mountains (P. Raven, *in litt.*, 1964). That population has since been extirpated by conversion to agriculture (NDDB 1994). David Verity discovered the easternmost population of *P. lyonii* in the Santa Monica Mountains at Stunt Ranch in 1977 (NDDB 1994).

Pentachaeta lyonii is currently known from five population units in the Santa Monica Mountains and the western Simi Hills, a distance of approximately 32 kilometers (km) (20 miles (mi)), distributed in a highly fragmented landscape. The East unit consists of 1 occurrence with 4,000 individuals; the Mulholland crest unit has 3 occurrences with 1,200 individuals; the Central unit has 7 occurrences with 28,000 individuals; the Conejo Ridge unit has 7 occurrences with 2,900 individuals; and the North unit has 4 occurrences with 1,000 individuals. Five of these occurrences are known to exist on public lands managed by the NPS, the Las Virgenes Municipal Water District, and COSCA. Since publication of the proposed rule, three occurrences on public lands (Stunt Ranch, Malibu Creek State Park, and Arroyo Sequit) appear to have become extirpated

(NDDB 1994). The remaining locations are on privately owned land, most with active primary and secondary threats from existing or proposed development. Primary threats include those that eliminate populations during construction. Secondary threats include the influence of the project on the surrounding environment in the form of local disturbance facilitating the introduction of competitive weeds and alteration of ecosystem processes. Other sites containing potential habitat for *P. lyonii* are limited, reducing the likelihood of finding additional unthreatened and viable populations of this species.

In southern California, dudleyas or live-forevers (*Dudleya*) are succulent, rosette-forming perennial plants in the stonecrop family (Crassulaceae). Members of this genus frequently inhabit rocky soils or rock outcrops, both along the coast and in interior mountain ranges. The Santa Monica Mountains represent one of the most diverse concentrations of the genus. Because of the patchy and limited distribution of such habitats within other plant community types, many species of *Dudleya* tend to be highly localized in their distribution.

Dudleya abramsii ssp. *parva* (Conejo dudleya) was first described in 1923 as *D. parva* by Joseph Rose and Anstruther Davidson (Moran 1948) based on a cultivated collection made a year earlier by Mrs. J. H. Bullard from the Conejo Grade in Ventura County. No further mention was made of the plant in other regional floras for several decades, although Munz listed *D. parva* as a synonym of *Echeveria lanceolata* in 1935 (Moran 1948). In 1960, Reid Moran recognized *D. parva* in his treatment of the genus (Moran in Jacobsen 1960), and it was subsequently also recognized by Munz in his *Flora of Southern California* (1974). Jim Bartel (1991) published the combination *D. abramsii* ssp. *parva*, based on similar floral features between *D. parva* and *D. abramsii*.

Dudleya abramsii ssp. *parva* forms a rosette of oblanceolate leaves that are 1.5 to 4 cm (0.6 to 1.6 in.) long, 3 to 6 mm (1.2 to 2.4 in.) wide, and that, unlike most taxa in the subsection *Dudleya*, wither by early summer. The inflorescence is 5 to 18 cm (2 to 7.1 in.) long, tipped with pale yellow flowers that are often flecked with red on the keel. The roots are constricted at irregular intervals (Munz 1974). *Dudleya abramsii* ssp. *parva* is distinguished from other local *Dudleya* taxa by its flower color, root constrictions and withering leaves.

Dudleya abramsii ssp. *parva* is known only from the western terminus of the Simi Hills west along the Montclef Ridge to the Conejo Grade, a distance of approximately 16 km (10 mi). There are only 11 reported populations, with numbers of individuals varying from a few thousand at one population to as few as 25. The majority of the populations number in the hundreds of individuals. *Dudleya abramsii* ssp. *parva* grows at the base of scattered rock outcrops of the Conejo volcanics in grassland and coastal sage scrub habitats. A portion of the plant's habitat is on lands designated as ''open space'' by COSCA; the remaining habitat is privately owned. Threats to this taxon include recreational activity (hiking and equestrian use), urban development, fire management and suppression activities, and collection (NDDB 1994, Skinner and Pavlik 1994).

Dudleya cymosa was first described by Charles Antoine Lemaire in 1858 as *Echeveria cymosa* based on a collection sent to him by the Belgian horticulturalist Louis de Smet; however, the type locality is unknown and the type specimen has been lost (Moran 1951, Nakai 1987). In 1903, Britton and Rose renamed the taxon *Dudleya cymosa* (Moran 1951). *Dudleya cymosa* includes seven subspecies that range throughout California in the Sierra Nevada, Coast Ranges, Transverse Ranges, and the northern portion of the Peninsular Ranges; however, the two subspecies discussed in this rule have restricted distributions.

Dudleya cymosa ssp. *marcescens* (marcescent dudleya) was first observed by Charlotte Hoak in 1932 in Little Sycamore Canyon in the Santa Monica Mountains (Rooksby 1936). However, the plant was not described until 1951 by Moran, based on a specimen that he collected in 1948 at the same location (Moran 1951, 1957).

Dudleya cymosa ssp. *marcescens* is distinguished from other subspecies of *D. cymosa* by the habit of the rosette leaves withering in the summer. The rosette leaves are 1.5 to 4 cm (0.6 to 1.6 in.) long and 5 to 12 mm (2.0 to 4.7 in.) wide; the caudex is 2 to 7 mm (0.8 to 2.8 in.) thick; floral stems are 4 to 10 cm (1.6 to 4 in.) tall; corollas are bright yellow to yellow with red markings to bright red (Munz 1974). This subspecies typically occurs on the lower reaches of sheer volcanic rock surfaces and canyon walls adjacent to perennial streams. In most locations, the topographic relief has precluded soil formation; therefore, this taxon may be the only vascular plant in a microhabitat otherwise dominated by mosses and lichens (NDDB 1994).

Dudleya cymosa ssp. *marcescens* is known from seven occurrences in the Santa Monica Mountains, from Hidden Valley to Malibu Creek State Park, a distance of 24 km (15 mi). Estimates of the number of individuals at each occurrence are between 50 and 200 plants; the total number of individuals is estimated to be less than 1,000. The microhabitat requirements of the plant limit the possibility that any additional large populations will be found. Half of the populations occur on lands owned and managed by the DPR; two locations are managed by the NPS—one on an administrative easement where the landowner has drastically altered the native vegetation (pine plantings in a cleared oak grove), and another in an area that receives unsupervised recreational use (boulder hopping and rock climbing). The remaining populations are on lands in private ownership, several of which are threatened by development (Skinner and Pavlik 1994, NDDB 1994). On DPR and NPS lands, the plant is threatened by recreational use, particularly rock climbing, foot traffic, collection, and fire (Skinner and Pavlik 1994, NDDB 1994).

The distinct variation in *Dudleya cymosa* ssp. *marcescens* between sites has been commented upon (Mark Dodero, graduate student, San Diego State University, pers. comm., 1992). Nakai believes that a small population at Rattlesnake Canyon in Santa Barbara County shares characteristics with this subspecies (Kei Nakai, pers. comm., 1992). Bartel (*in litt.*, 1992b) has made a tentative determination of *D. cymosa* ssp. *marcescens* for a population in the Santa Ana Mountains, Orange County. Daryl Koutnik, who has also studied the systematics of these taxa, questions these determinations (J. Schwarze, *in litt.*, 1993). If these additional populations prove to be *D. cymosa* ssp. *marcescens*, they are unlikely to alter the status of this subspecies due to the threats and limited population numbers in the Santa Monica Mountains.

Dudleya cymosa ssp. *ovatifolia* (Santa Monica Mountains dudleya) was first described as *D. ovatifolia* by Britton in 1903 based on a collection made by H.M. Hall the previous year. The type locality is listed as ''Sierra Santa Monica,'' thought to be Topanga Canyon in Los Angeles County (Moran 1951). The species was subsequently recognized as *Cotyledon ovatifolia* and *Echeveria ovatifolia* (Fedde 1904 and Berger 1930 respectively in Moran 1951) when broad generic concepts were applied to the family Crassulaceae. Moran published the new combination *Dudleya cymosa* ssp. *ovatifolia* in 1957.

In 1983, Nakai considered the plants he found near Agoura, Los Angeles County, to be one of ''two somewhat distinct races'' of *Dudleya cymosa* ssp. *ovatifolia.* The ovate leaves with a maroon underside distinguish the ''Topanga'' race of *D. cymosa* ssp. *ovatifolia* from other *Dudleya,* while the glaucous leaves and lemon-yellow flowers separate the ''Agoura'' race of *D. cymosa* ssp. *ovatifolia* from other local species. Four years later, however, Nakai (1987) published the new combination *D. cymosa* ssp. *agourensis* to refer to ''Agoura'' material. Nakai distinguished the new subspecies from *D. cymosa* ssp. *ovatifolia* by the number and shape of rosette leaves, pedicel length, and degree of spreading in petal apices. Bartel (*in litt.*, 1992a) concluded that these characters were insufficient to warrant taxonomic recognition as a subspecies of *D. cymosa.* As a result, Bartel (1993) lumped *D. cymosa* ssp. *agourensis* with *D. cymosa* ssp. *ovatifolia* in his revision of the genus for *The Jepson Manual.* For the purposes of this rule, *Dudleya cymosa* ssp. *ovatifolia* includes *D. cymosa* ssp. *agourensis* as described by Nakai.

Like many *Dudleya* taxa, *D. cymosa* ssp. *ovatifolia* has rosette leaves that are evergreen rather than withering in the summer. Leaves are 2 to 5 cm (0.8 to 2 in.) long and 1.5 to 2.5 cm (0.6 to 1 in.) wide; floral stems are 4 to 15 cm (1.6 to 6.0 in.) tall; corollas are pale yellow (Munz 1974). *Dudleya cymosa* ssp. *ovatifolia* is found scattered along exposed north-facing slopes of the Santa Monica Mountains from near Westlake Village to Agoura, and in deep canyon bottoms along lower Malibu Creek and Topanga Creek. Less than ten occurrences have been reported, each consisting of no more than several hundred individuals. While future surveys may locate additional occurrences of the ''Agoura'' form along the northern slopes of the Santa Monica Mountains, the limited amount of habitat available makes it unlikely that the total number of individuals will exceed several thousand (NDDB 1994).

Material collected by David Verity (pers. comm., 1992) from Modjeska Canyon on the western flank of the Santa Ana Mountains, Orange County, in 1951 was included by Uhl and Moran (1953) in their cytotaxonomic article on *Dudleya* as *D. ovatifolia.* These populations, which are not threatened (U.S. Fish and Wildlife Service (USFWS), *in litt.*, 1996), represent a range disjunction of approximately 100 km (60 mi) to the southeast of the Santa Monica Mountains. Boyd *et al.* (1995) reported that the subspecies in the Santa Ana Mountains was ''[l]ocally common on north-facing cliffs in chaparral, central Santiago Canyon near Fleming Peak to near the summit of the west slope of Modjeska Peak.'' Co-author Fred Roberts indicated that ''local and restricted, but common where found'' would better describe the distribution (Fred Roberts, USFWS, pers. comm., 1996).

Populations of *Dudleya cymosa* ssp. *ovatifolia* in Malibu and Topanga Canyons occur largely on lands owned and managed by the DPR. One of these populations is relatively inaccessible, however, another occurrence is directly adjacent to private property that has been bulldozed for development access (Suzanne Goode, Resource Ecologist, DPR, Santa Monica Mountains, pers. comm., 1992). Two occurrences are on lands designated as open space by COSCA, while the remaining occurrences in the Santa Monica Mountains are on several privately owned properties zoned for commercial and residential development along the north slope of Ladyface Mountain. A cumulative impacts analysis from an area project proposal shows at least 74 projected proposed or under construction within 6.4 km (4 mi) of the Santa Monica Mountains populations (County of Los Angeles, *in litt.*, 1996). This density of development threatens the habitat of *D. c.* ssp. *ovatifolia.*

Dudleya verityi (Verity's dudleya) was originally collected in 1944 by Moran, who treated it as *D. caespitosa.* In their 1966 *Flora of the Santa Monica Mountains,* Peter Raven and Henry Thompson treated it as *D. farinosa.* In 1983, Nakai described it as *Dudleya verityi* (Nakai 1983).

Dudleya verityi is unique among *Dudleya* taxa in this rule in that it forms multiple rosettes, as many as 100 to a colony. Rosette leaves are 2 to 5 cm (0.8 to 2 in.) long and 5 to 8 mm (0.2 to 0.4 in.) wide; floral stems are 5 to 15 cm (2 to 5.9 in.) tall; corollas are lemon-yellow with petal tips recurved up to 90 degrees. Nakai (1983) distinguished *D. verityi* from *D. caespitosa* by its much shorter leaves and flowering stems. He separated *D. verityi* from *D. cymosa* ssp. *ovatifolia* by its more elongated caudex, multiple dichotomously branched rosettes, and paler flowers (Nakai 1983, 1987).

Dudleya verityi is limited to three populations occurring in a narrow band 6.4 km (4 mi) in length along the lower slopes of Conejo Mountain, from Long Grade Canyon to U.S. highway 101. The northernmost population consists of over a thousand individuals and another is considered abundant in the limited habitat it occupies (Envicom 1992, NDDB 1994). Historically, the lower slopes of Conejo Mountain have been the site for quarrying of construction-grade rock. The land is zoned for mineral extraction and there are abandoned, active, and proposed quarry operations within the distribution of *D. verityi.* The majority of the distribution of *D. verityi* is privately owned in a region with rapidly increasing development. Only a small portion of habitat is owned by a public agency (Ventura County Flood Control District).

Previous Federal Action

Federal government action on these six plants began as a result of section 12 of the Endangered Species Act of 1973, which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct. This report, designated as House Document No. 94–51, and presented to Congress on January 9, 1975, recommended *Astragalus brauntonii* and *Dudleya abramsii* ssp. *parva* (as *Dudleya parva*) for threatened status, and *Dudleya cymosa* ssp. *marcescens* and *Pentachaeta lyonii* for endangered status. The Service published a notice in the July 1, 1975, Federal Register (40 FR 27823) of its acceptance of the report as a petition within the context of section 4(c)(2) (now section 4(b)(3)(A)) of the Act, and of the Service's intention thereby to review the status of the plant taxa named therein. The above four taxa were included in the July 1, 1975, notice. The Service published a proposal in the June 16, 1976, Federal Register (42 FR 24523) to determine approximately 1,700 vascular plant species to be endangered species pursuant to section 4 of the Act. *Dudleya cymosa* ssp. *marcescens* and *Pentachaeta lyonii* were included in the June 16, 1976, Federal Register.

General comments received in regard to the 1976 proposal were summarized in the April 26, 1978, Federal Register (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), the Service published a notice of withdrawal of the June 6, 1976, proposal along with four other proposals that had expired.

The Service published an updated notice of review for plants in the December 15, 1980, Federal Register (45 FR 82480). This notice included *Astragalus brauntonii, Dudleya cymosa* ssp. *marcescens, D. parva,* and *Pentachaeta lyonii* as category 1 candidate species (species for which

data in the Service's possession are sufficient to support proposals for listing). On November 28, 1983, the Service published in the Federal Register a supplement to the Notice of Review (48 FR 39526); the plant notice was again revised on September 27, 1985 (50 FR 6184). *Dudleya abramsii* ssp. *parva* (as *D. parva*) was included in the 1983 supplement and the 1985 revision as a category 1 candidate species. *Astragalus brauntonii, D. cymosa* ssp. *marcescens,* and *Pentachaeta lyonii* were included in both of these revisions as category 2 species (species for which data in the Service's possession indicate listing may be appropriate, but for which additional biological information is needed to support a proposed rule). *Dudleya verityi* was included for the first time in the 1983 supplement, and again in the 1985 revision, as a category 2 species. On February 21, 1990 (55 FR 6184), the plant notice was again revised, and *Dudleya parva* and *Pentachaeta lyonii* were included as category 1 taxa, while *Astragalus brauntonii, D. cymosa* ssp. *marcescens,* and *D. verityi* were included as category 2 taxa. *Dudleya cymosa* ssp. *ovatifolia* did not appear in a notice of review. Data gathered during the request for information period were sufficient to determine that proposed listing was warranted. The proposed rule constituted the first Federal action on *D. cymosa* ssp. *ovatifolia.*

Section 4(b)(3)(B) of the Endangered Species Act, as amended in 1982, requires the Secretary to make findings on certain 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. This was the case for *Astragalus brauntonii, Dudleya abramsii* ssp. *parva* (as *D. parva*), *D. cymosa* ssp. *marcescens,* and *Pentachaeta lyonii* because the 1975 Smithsonian report was accepted as a petition. Annually in October of 1983 through 1991, the Service found that the petitioned listing of these taxa was warranted, but that their listing was precluded by other higher priority listing actions. The publication of the proposed rule constituted a warranted finding for these taxa, as well as for *D. verityi* and *D. cymosa* ssp. *ovatifolia.*

On November 30, 1992, the Service published a proposed rule in the Federal Register (57 FR 56541) to list *Astragalus brauntonii* and *Pentachaeta lyonii* as endangered and *Dudleya abramsii* ssp. *parva, Dudleya cymosa* ssp. *marcescens, Dudleya cymosa* ssp. *ovatifolia,* and *Dudleya verityi* as threatened.

The processing of this final rule follows the Service's listing priority guidance published in the Federal Register on December 5, 1996 (61 FR 64475). The guidance clarifies the order in which the Service will process rulemakings following two related events: (1) the lifting, on April 26, 1996, of the moratorium on final listings imposed on April 10, 1995 (Public Law 104–6), and (2) the restoration of significant funding for listing through passage of the omnibus budget reconciliation law on April 26, 1996, following severe funding constraints imposed by a number of continuing resolutions between November 1995 and April 1996. The guidance calls for giving highest priority to handling emergency situations (Tier 1) and second highest priority (Tier 2) to resolving the listing status of the outstanding proposed listings. This final rule falls under Tier 2. At this time there are no pending Tier 1 actions. The Ventura Field Office has confirmed that the overall status of the taxa in this final rule has not improved since publication of the proposed rule.

Summary of Comments and Recommendations

In the November 30, 1992, proposed rule and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. A newspaper notice inviting public comment was published in the *Los Angeles Times* on December 11, 1992. The comment period closed on January 29, 1993. Appropriate Federal agencies, State agencies, local governments, scientific organizations, and other interested parties were contacted and requested to comment.

The Service received 17 letters concerning the proposed rule during the comment period, including those of 1 Federal agency, 1 State agency, and 15 individuals or groups. Twelve respondents expressed support for the listing proposal, three opposed it, and two were neutral. Several commenters provided additional information; this information and other clarifications have been incorporated into the final rule. Opposing and technical comments on the rule have been organized into specific issues. These issues and the Service's response to each issue are summarized as follows:

Issue 1

One commenter, citing data from the Natural Diversity Data Base (NDDB), asserted that the proposed rule did not include substantial information to justify the listing of *Pentachaeta lyonii.*

Response

Under section 4(b)(1)(A) of the Act, the Service must use the best scientific and commercial information available when determining whether a species is endangered or threatened. This listing is based on the best available scientific and commercial information, including literature records, Service fieldwork, communication with field biologists familiar with the species and its threats, local lead agencies, landowners, and NDDB data. Most of the respondent's comments referred only to NDDB information. The Service had access to the data used to enter information into NDDB records and communicated with the field biologists who supplied the data to the NDDB. The Service believes that sufficient evidence of threats to *Pentachaeta lyonii* and the other five taxa is presented in this rule to warrant their protection under the Act. (See ''Summary of Factors Affecting the Species'' below.) The Service maintains that the final decision to list *Pentachaeta lyonii* is based on the best available scientific and commercial information.

Issue 2

One commenter referred to the NDDB's use of the global and state ranking system, stating that *Pentachaeta lyonii* was incorrectly ranked and is actually not rare enough to be considered endangered.

Response

The Service did not base this listing on the global and state rarity ranking systems used by the NDDB. The evaluation of rarity by the NDDB for the global and state ranking system counts what the NDDB considers to be viable occurrences of species. The ranking system contained only two and possibly four occurrences of *Pentachaeta lyonii* (Susan Cochrane, Division Chief, Natural Heritage Division, California Department of Fish and Game (CDFG), *in litt.*, 1993). The majority of these occurrences are actually small, declining, damaged, and/or experiencing a high level of threat from habitat loss and therefore are not viable in the view of the Service.

Issue 3

One commenter suggested that the NDDB data for *Pentachaeta lyonii* illustrated the fact that there are numerous populations, the population sizes are large, and the status of the species is improving.

Response

The NDDB often includes more than one occurrence number to record a biological population. A single occurrence may encompass multiple property ownerships, resulting in several records of occurrence for a single population. This method of recording a population may provide an artificially high record for the number of biological populations. The text of the rule has been amended to define the distribution of *Pentachaeta lyonii* as occurring in five population units (landscape units or metapopulations), each comprising several colonies. The Service acknowledges that new populations have been discovered in the last two decades; however, the implication that the species' status has improved is in error. The commenter indicated having knowledge of four additional occurrences; however, no information was submitted to the Service to substantiate those claims. The majority of new information on the distribution of *P. lyonii* is a result of early compliance surveys for development proposals. The subsequent project redesigns have been inadequate to protect the habitat for this species, and mitigation measures approved by various local lead agencies have proven inadequate for long-term population viability (C. Wishner, biologist, Envicom Corp., pers. comm., 1994). The majority of information available indicates that populations have declined. Disruptive events, such as direct loss of colonies to development and secondary impacts of disturbance including displacement by non-native weeds, have also resulted in a declining population trend. It is typical for an annual plant species to occur locally in large numbers, where hundreds of thousands of individuals constitute viable populations. The total aggregate number of individuals of *P. lyonii* is less than 50,000; however, the majority of the occurrences each have less than 1,000 individuals. Extinction from naturally occurring events is possible even for the largest known populations of *P. lyonii*. The Service therefore concludes that populations are neither large nor numerous and that the status of the species is declining.

Issue 4

One commenter asserted that the distribution of *Pentachaeta lyonii* is extensive and may still include the Palos Verdes Peninsula and Santa Catalina Island.

Response

The Service does not believe that the distribution of this species is extensive. *Pentachaeta lyonii* is a narrowly localized endemic with a highly fragmented and discontinuous distribution in the Santa Monica Mountains and the western Simi Hills. The Service has reviewed the records of historical distribution for the Palos Verdes Peninsula and Santa Catalina Island. The Service has consulted field botanists specifically searching for *P. lyonii* in those locations and determined that the species has been extirpated from those localities (CDFG 1989). The vast majority of habitat in the region of Palos Verdes has been developed, and the open space on Santa Catalina Island has been severely overgrazed and altered by the introduction of non-native animals and plants.

Issue 5

One commenter questioned the need to federally list *Pentachaeta lyonii*, stating that the California State Endangered Species Act protects the species.

Response

The failure of existing regulatory mechanisms, including the California Endangered Species Act, to adequately protect the plant is addressed under Factor D in the ''Summary of Factors Affecting the Species'' section (see below).

Issue 6

Two commenters expressed opinions regarding the ecological function of fire and its importance to the integrity of viable habitat for *Pentachaeta lyonii* and *Astragalus brauntonii.* One commenter stated that prescribed fire is not and will never be a feasible management tool in the Santa Monica Mountains due to the danger to personal property. One commenter questioned the Service's statement that the 15 m (50 ft) buffer zone for rare plant reserves currently required as mitigation for impacts caused by development is inadequate and, therefore, that proposed development constitutes a threat.

Response

The placement of development adjacent to fire-prone habitats will necessarily require fuels modification. Although the development might not actually remove sensitive plant species during construction, a 15 m (50 ft) buffer falls within the 30 to 60 m (100 to 200 ft) fuels modification zone. The removal of vegetation in the fuels modification zone adversely changes the basic ecological processes that are part of the required habitat of these two species. More information on fire management is presented under Factor A in the ''Summary of Factors Affecting the Species'' section (see below). Prescribed burns are currently conducted by the fire departments of Los Angeles and Ventura counties within the Santa Monica Mountains and the Simi Hills. A dual purpose plan designed to use prescribed fire for fuels reduction and *Pentachaeta lyonii* habitat management by establishing a fire-safe buffer distance could reduce or eliminate the local threats of habitat modification by local development.

Issue 7

Two commenters thought that human-caused disturbance of the soil in the habitats of *Astragalus brauntonii* and *Pentachaeta lyonii* was not a threat to viable populations.

Response

Although some populations of *Astragalus brauntonii* and *Pentachaeta lyonii* occur within anthropogenically disturbed areas, no experimental data exist on the response of these two species to soil disturbance. However, human-induced disturbance causes the destruction and modification of the integrity of natural habitats and in the process facilitates the establishment of competitive non-native weeds. *Pentachaeta lyonii* populations have apparently been lost and replaced by a dense community of weeds near Stunt Ranch and along upper Westlake Boulevard.

The Service solicited the opinions of several appropriate specialists regarding pertinent scientific or commercial data and assumptions relating to the taxonomy and biological and ecological information for these six taxa. All responses received supported the proposed rule. Additional data provided by the reviewers have been incorporated into this final rule.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Astragalus brauntonii* Parish (Braunton's milk-vetch) and *Pentachaeta lyonii* Gray (Lyon's pentachaeta) should be classified as endangered species and that *Dudleya cymosa* (Lem.) Britt. & Rose ssp. *marcescens* Moran (marcescent dudleya), *Dudleya cymosa* (Lem.) Britt. & Rose ssp. *ovatifolia* (Britt.) Moran (Santa Monica Mountains dudleya), *Dudleya abramsii* Rose ssp. *parva* (Rose & Davids) Bartel (Conejo dudleya), and *Dudleya verityi* Nakai (Verity's dudleya) should be classified as threatened species. Procedures found at section 4 of

the Endangered Species Act (16 U.S.C. 1531) and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act were followed. 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). These factors and their application to the six plant taxa in this rule are as follows:

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

Steep terrain typifies the habitat of *Astragalus brauntonii* and, until the recent increase of urban sprawl, it has remained relatively secure. Now that the majority of flat lands have been developed, several populations occupying rugged terrain have been destroyed by urban development. Within the last 15 years, one colony has been extirpated (Monrovia) and two others have incurred significant losses related to development (Santa Ynez Canyon and Simi Hills). Another location has been approved for development by the City of Anaheim (Coal Canyon). There are no known populations that are not facing primary or secondary threats to survival. Only a small portion of the Santa Ynez Canyon population occurs on public lands (DPR) and a portion of the population was bulldozed during fire suppression activities in 1993.

The City of Anaheim has approved a development that will eliminate 50 percent of the population of *Astragalus brauntonii* in the Santa Ana Mountains (C. Spenger, President, Friends of the Tecate Cypress, *in litt.*, 1993). The County of Ventura has approved a development, with mitigation measures, that will eliminate a portion of the habitat for *A. brauntonii* in the Simi Hills. The proposed mitigation efforts are strictly experimental, consisting of the movement of limestone soils to a rare plant reserve with no limestone substrate. The reserve may not be large enough or far enough away from development to allow periodic fires. Additionally, there is no contingency in the event that these efforts fail to establish a long-term viable population of *A. brauntonii.* A previously approved development has destroyed most habitat for this species in Santa Ynez Canyon (S. Goode, pers. comm., 1992). All of the population areas (Simi Hills, Topanga State Park, Monrovia, and the Santa Ana Mountains) have experienced habitat destruction and the remaining habitat is threatened by modification of natural ecological processes.

Pentachaeta lyonii continues to be negatively impacted by urban development. The Lake Eleanor Hills Project has been approved by the City of Westlake Village and will eliminate habitat containing several thousand plants (Joseph Edminston, Executive Director, Santa Monica Mountains Conservancy, *in litt.*, 1991). The Lake Sherwood Golf Course and the Ronald Reagan Presidential Library, both recently approved and developed, have eliminated significant habitat for *Pentachaeta lyonii.* Sites that have been set aside as *ex situ* mitigation areas, with seed and soil transported from *Pentachaeta lyonii* populations destroyed in grading operations for development, have failed to successfully establish viable populations (C. Wishner and J. Bowland, biologist, pers. comms., 1994). The establishment of an *in situ* management area was required as mitigation for the removal of habitat at Lake Sherwood Golf Course that supported over 3,000 *Pentachaeta lyonii* individuals (C. Wishner, *in litt.*, 1994). The site was negatively impacted by changed hydrology, competition with non-native species, loss of habitat for potential pollinators, and elimination of natural fire cycles. There was no buffer zone and it failed to maintain a self-perpetuating population of *P. lyonii.*

Currently only a 15 m (50 ft) buffer for avoidance of rare plant populations is required by local permitting agencies (Ventura County, City of Thousand Oaks). A 15 m (50 ft) buffer zone falls within the 30 to 60 m (100 to 200 ft) fuels modification zone required in California and is usually maintained by disking and mowing. This practice modifies or destroys the habitat characteristics essential to sustaining viable populations of *Pentachaeta lyonii.* Two projects, one with a reported 10,000 individuals, have been designed with *Pentachaeta lyonii* habitat designated as part of the fuels modification zone (P. Lindsey, biologist, Impact Sciences, *in litt.*, 1994). Attempts to avoid or compensate for impacts have produced conditions that are not favorable for the long-term maintenance of the populations.

Portions of populations of *Dudleya cymosa* ssp. *ovatifolia* and *D. abramsii* ssp. *parva* have been extirpated by development in the cities of Agoura Hills, Thousand Oaks, and Westlake Village. The majority of their distribution is on private lands located in a region with increasing development pressures. At least 75 projects are proposed, approved, or under construction within 6.5 km (4 mi) of *Dudleya cymosa* ssp. *ovatifolia* habitat (County of Los Angeles, *in litt.*, 1996). *Dudleya abramsii* ssp. *parva* is also affected by trampling and off-road vehicle activities on public and private lands. Weed abatement operations along roadsides, which involve scraping with a skiploader, destroyed several hundred individuals of *D. cymosa* ssp. *ovatifolia* and have continued to modify its habitat (T. Thomas, biologist, pers. obs., 1991). *Dudleya verityi* survives on cliff habitats at the base of the Conejo Grade on land zoned for mineral extraction and with existing quarrying operations. The habitat of *Dudleya cymosa* ssp. *marcescens* is used for rock climbing and rappeling, which destroys the moss substrate and individual dudleya plants.

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

Some plant species have become vulnerable to collecting by curiosity seekers as a result of increased publicity following publication of a listing rule. Overutilization is probably not applicable to *Astragalus brauntonii* or *Pentachaeta lyonii.* However, because of the large stature and striking appearance of *Astragalus brauntonii*, it may be vulnerable to casual collection, particularly along firebreaks adjacent to areas used for recreational activities. Virtually all members of the genus *Dudleya* have been subject to collection for horticultural purposes. The four *Dudleya* taxa in this rule have all been collected by professional horticulturalists and probably by amateur collectors and gardeners as well.

C. Disease or Predation

Neither disease nor predation is known to be a factor for any of the six plant taxa in the wild. As part of a program to mitigate the loss of a substantial population of *Pentachaeta lyonii,* plants grown from seed at Rancho Santa Ana Botanic Gardens were severely damaged by a white fly infestation (Orlando Mistretta, Rancho Santa Ana Botanic Garden, pers. comm., 1992).

D. The Inadequacy of Existing Regulatory Mechanisms

The California Fish and Game Commission has listed *Dudleya cymosa* ssp. *marcescens* as rare and *Pentachaeta lyonii* as endangered under the Native Plant Protection Act (NPPA) (Div. 2, chapter 1.5 sec. 1900 *et seq.* of the CDFG Code) and the California Endangered Species Act (CESA) (Div. 3, chapter 1.5 sec. 2050 *et seq.*). *Astragalus brauntonii, Dudleya abramsii* ssp. *parva, Dudleya cymosa* ssp. *ovatifolia,* and *Dudleya verityi* are included on List 1B of the California Native Plant Society's *Inventory* (Skinner and Pavlik 1994),

indicating that, in accordance with chapter 10 sec. 1901 of the CDFG Code, they are eligible for State listing. Although NPPA and CESA both prohibit the ''take'' of State-listed plants (chapter 10 sec. 1908 and chapter 1.5 sec. 2080), these existing statutes appear inadequate to protect against the taking of such plants via habitat modification or land use change by the landowner. After the CDFG notifies a landowner that a State-listed plant grows on his or her property, the CDFG Code requires only that the landowner notify the agency ''at least 10 days in advance of changing the land use to allow salvage of such plant'' (chapter 10 sec. 1913).

Local lead agencies empowered to uphold and enforce the regulations of the California Environmental Quality Act (CEQA) have made determinations that have or will negatively impact *Pentachaeta lyonii, Astragalus brauntonii, Dudleya abramsii* ssp. *parva* and *Dudleya cymosa* ssp. *ovatifolia.* Mitigation measures used to condition project approvals are essentially experimental and fail to adequately guarantee protection of sustainable populations. Species relocation attempts have failed and project designs have failed to provide an adequate buffer zone around populations to permit long-term viability at those locations (Diane Hickson, biologist, CDFG, *in litt.*, 1994). A mitigation measure approved by Ventura County involves establishing a rare plant reserve for *Astragalus brauntonii* on non-occupied habitat. Limestone soils will be scraped from the destroyed site and placed on the reserve. Because the small reserve is bordered by development, it is unlikely that prescribed fire will be used as a management tool. The *in situ* preserve is a highly altered water tank site that has little natural habitat (Rachael Tierney, biological consultant, *in litt.*, 1990). It is highly doubtful that either measure will support viable populations of *Astragalus brauntonii.*

Many mitigation attempts do not achieve the goal of securing long-term protection for plants (Howald 1993). Three ''protected'' sites were bulldozed since the publication of the proposed rule—one during a fire suppression event in 1993, one during fuelbreak maintenance, and another by earthmoving operations related to the expansion of the Calleguas Municipal Water District Facility.

In 1991, the State of California established the Natural Communities Conservation Plan Program (NCCP), pursuant to the Natural Community Conservation Planning Act. The purpose of the NCCP program is to provide long-term, regional protection of natural vegetation and wildlife diversity, while allowing appropriate and compatible land development (CDFG 1992). The Southern California Coastal Sage Scrub NCCP Program is the pilot program, and is focused on the coastal sage scrub plant community, although other associated vegetation communities are also being addressed in this ecosystem-based planning approach. Prepared under conservation planning guidance for the Coastal Sage Scrub NCCP Program, the Natural Community Conservation Plan/Habitat Conservation Plan was developed for the Central and Coastal Subregion of Orange County, and approved by the Service on July 17, 1996. Two of the six taxa in this rule occur within the planning area for the Central and Coastal Subregional Natural Community Conservation Plan/Habitat Conservation Plan, including one population of *Astragalus brauntonii* and two populations of *Dudleya cymosa* ssp. *ovatifolia.*

Although discussed early in the planning process for the Central and Coastal Subregional Natural Community Conservation Plan/Habitat Conservation Plan, *Astragalus brauntonii* is not considered a ''covered'' species under the plan, because sufficient information regarding the most appropriate protection strategies to adequately conserve the species was not available during the planning process (USFWS, *in litt.*, 1996). Species ''covered'' under the Central and Coastal Subregional Natural Community Conservation Plan/Habitat Conservation Plan have been treated as if they were listed under the Act, and their conservation and management is provided for in the plan. The two occurrences of *A. brauntonii* in Orange County (Gypsum and Coal Canyons in the Santa Ana Mountains) are within the Central/Coastal NCCP Reserve System. Potential habitat of *A. brauntonii* occurs within the North Ranch Policy Plan Area in the Central and Coastal Subregion, which is a specifically designated area where conservation planning has been delayed due to the lack of detailed information on the life history of the species in this area. The Central and Coastal Subregional Natural Community Conservation Plan/Habitat Conservation Plan contains planning policies intended to guide future conservation planning in this area, which will focus on protecting regional biodiversity values and unique and sensitive resources (USFWS, *in litt.*, 1996). Therefore, protection and management of *A. brauntonii* via future preserves and fire management could occur in this area of the subregion. Even if this population is protected, however, the overall status of the species remains threatened, making its listing appropriate.

Dudleya cymosa ssp. *ovatifolia* is a covered species under the plan and the two Orange County populations are conserved. Under an agreement with the participants, CDFG, and the Service, future potential impacts for covered species are considered adequately addressed through the minimization and mitigation measures specified in the Central/Coastal NCCP, including establishment and long-term management of a preserve system. Although the two populations in Orange County are protected from threats (USFWS, *in litt.*, 1996), the majority of the distribution of *D. cymosa* ssp. *ovatifolia,* which is outside Orange County, is not protected and the overall status of the subspecies remains threatened.

While the public agencies that manage lands with occurrences of these and other sensitive plant taxa have a mandate to protect the resources, none of those agencies has specific management plans for the taxa in this rule. Dual mandates for recreation and preservation by the NPS sometimes result in impacts to sensitive resources. For example, in the Rocky Oaks unit of the Santa Monica Mountains National Recreation Area (SMMNRA), equestrian trail use has eliminated subpopulations of *Pentachaeta lyonii.* No monitoring of rare plants is being conducted by the SMMNRA (D. Hickson, *in litt.*, 1994). When the SMMNRA was authorized by Congress in 1978, it was given the authority to comment on projects being proposed within the ''sphere of influence'' of the SMMNRA planning area. However, such comments made by the SMMNRA are not binding upon the project proponent.

Public agencies reviewing requests for large development projects are required by CEQA to conduct surveys of the biological resources of a project site. Sensitive species located during surveys are to be reported to the NDDB, which is maintained by the CDFG's Natural Heritage Division. Occasionally the project proponent considers the information proprietary and the consulting biologists may not report complete information to the NDDB (USFWS 1994). This has the potential to further aggravate the endangerment of those species.

E. Other Natural or Manmade Factors Affecting its Continued Existence

The grasslands of California have been affected by grazing for 200 years, resulting in a type-conversion from

native, annual and perennial grass and herb species to aggressive, non-native annual species.

The fire management policy of the last 200 years has been one of fire exclusion, which has disrupted natural processes, causing an imbalance in ecosystem functioning in grasslands, coastal sage scrub, chaparral, and oak woodlands. Most California habitats are highly adapted to periodic fires. The disruption of ecological processes has not been uniform. In interior blocks of large habitat, the reduction of fire frequency (by fire suppression) has resulted in an accumulation of fuels in woody vegetation, making fire intensity and duration more severe. In contrast, wildlands in proximity to urban areas have been subjected to increased fire frequencies. In addition, range management practices have used high fire frequencies to change the vegetation type from shrub to grass (Biswell 1989). Fire frequencies of one to ten years can reduce species diversity by causing the elimination of species dependent on longer periods of time between fires to re-establish seed banks.

The Nature Conservancy has established a preserve to protect habitat for *Cupressus forbesii* (Tecate cypress) and a portion of the local *Astragalus brauntonii* population. However, the fire management required for the protection of the approved developments adjacent to habitat for these species poses a conflict. Varied and controversial fire management policies have been implemented in southern California, generally without any clear understanding of their long-term ecological effects. The emphasis on fire suppression during the last century has had a significant effect on natural fire frequencies, intensities and size. Where fire suppression has been successful, there is a resulting fuel overloading and when an ignition event takes place, the resulting fires are usually intense and large. Fire frequencies close to the urban/wildland interface are often higher, a result of increased arson-caused ignitions. A vegetation management program was initiated in 1980 when the governor of California approved Senate Bill 1704, entitled ''Prescribed Burning: Brush-Covered Lands'' (Biswell 1989). Current fire management prescriptions, including wet season burns and crush and burn techniques, are questionable management tools for maintenance of sensitive species habitats. When soil and fuel moisture are high, burning intensity may not be sufficient to induce germination; conversely, the crush and burn technique may cause increased intensity and destroy species in the seed bank (White 1990). The use of prescribed fire as a habitat management tool for *Astragalus brauntonii* and *Pentachaeta lyonii* will be difficult because approved development is situated extremely close to ''protected'' populations (C. Wishner, pers. comm., 1994). Fire suppression activities have resulted in the extirpation of *Astragalus brauntonii* habitat during the Old Topanga fire of 1993 (S. Goode, pers. comm., 1994) and *Pentachaeta lyonii* habitat during the Greenmeadow fire of 1993 (C. Wishner, pers. comm., 1994).

Air pollution impacts to coastal sage scrub have been documented in the Santa Monica Mountains as a threat to the viability and functioning of the habitat (O'Leary 1990). *Niebla ceruchoides*, a small cushion lichen, apparently functions as a nursery for seedling establishment of *Dudleya verityi*. The population of *Niebla* on Conejo Mountain is the largest on the mainland (it is also known from the California Channel Islands). Occurrences of *Niebla* in coastal sage scrub habitats of coastal southern California are being reduced by habitat loss and air pollution (Riefner 1992).

At least two populations of *Pentachaeta lyonii* have been eliminated from the secondary effects of gopher-tilling of the soil, which facilitates the growth of competitive non-native weeds. Stable populations of *Pentachaeta lyonii* occur in sites that have a crusty soil surface that results in lower spatial competition from non-native annual grasses. When the crust is broken, the aggressive non-native annual weeds have displaced *Pentachaeta lyonii* (NDDB 1994).

Human-caused disturbances, such as roads, trails, and minor landform alterations, have functioned to provide a zone where the competition from aggressive, non-native annual weeds is reduced, thereby allowing *Pentachaeta lyonii* to grow. This artificial habitat contains a zone of highly compacted soils devoid of vegetation graduating to a zone of high vegetative cover. Between the zones is a narrow strip of habitat of reduced competition where *Pentachaeta lyonii* occasionally occurs. It is not disturbance that is required for viable *Pentachaeta lyonii* habitat, rather it is the reduced competition from non-native species such as *Avena* spp. (wild oats), *Bromus* spp. (brome grass), and *Centaurea melitensis* (tocalote) (CDFG 1989).

Changes in the intensity of disturbance have eradicated colonies of *Pentachaeta lyonii* on NPS land. A linear habitat alongside a trail supported a small population for several years; however, a significant increase in equestrian use changed the character of the minor disturbance that foot traffic generated. The soils changed in texture from compacted to powder and the width of the tread increased, eliminating the narrow band of habitat occupied by *Pentachaeta lyonii*. Another colony on the same parkland was significantly reduced by recreational trampling. The colony occurred alongside an artificial pond that was used by swimmers and picnickers who spread blankets and towels over the site. That colony was fenced in 1988 to prevent further impacts, but did not show signs of recovery (CDFG 1989).

Dudleya cymosa ssp. *marcescens* is negatively affected at four sites by recreational activities, primarily rock climbing. Plants are uprooted and destroyed by rappeling and boulder climbing activities. In addition, fire has been observed to severely reduce population densities and destroy the moss substrate that *Dudleya cymosa* ssp. *marcescens* requires (M. Dodero, pers. comm., 1992).

By virtue of the limited number of individuals and/or range of the existing populations, at least three (*Astragalus brauntonii, Dudleya abramsii* ssp. *parva, Dudleya verityi*) of the taxa in this rule are threatened with extinction from naturally occurring events. Genetic viability is reduced in small populations, making them vulnerable to extinction by a single human-caused or natural event. The potential for extinction owing to small population size or a highly restricted range is exacerbated by natural causes such as fire, drought, rock slides, or disease.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these taxa in determining to make this final rule. Based on this evaluation, the preferred action is to list *Astragalus brauntonii* and *Pentachaeta lyonii* as endangered, and *Dudleya cymosa* ssp. *marcescens, Dudleya cymosa* ssp. *ovatifolia, Dudleya abramsii* ssp. *parva,* and *Dudleya verityi* as threatened. The six taxa are individually threatened by one or more of the following—habitat alteration and destruction resulting from urban development; recreational activities; alteration of natural fire cycles within the coastal sage scrub, chaparral, grassland, and oak woodland communities; displacement by non-native weeds; and over-collection. The limited distribution of habitat for certain taxa (e.g., *Dudleya verityi*) and their small population size (e.g., *Astragalus brauntonii*) makes them particularly

vulnerable to extinction from naturally occurring events.

Because *Astragalus brauntonii* and *Pentachaeta lyonii* are in danger of extinction throughout all or a significant portion of their ranges, they meet the definition of endangered as defined in the Act. The Service has determined that threatened status rather than endangered status is appropriate for *Dudleya abramsii* ssp. *parva, D. cymosa* ssp. *marcescens, D. cymosa* ssp. *ovatifolia*, and *D. verityi* because these taxa are restricted to habitats that are somewhat less vulnerable to the threat of development. Certain populations of *D. cymosa* ssp. *marcescens* and *D. cymosa* ssp. *ovatifolia* occurring on lands owned and managed by the DPR are protected from the destruction of habitat by development. However, habitat degradation due to recreational activities such as rock climbing continues. Management activities, such as the establishment of a regional parks system by COSCA, have somewhat reduced the potential for habitat destruction for *D. abramsii* ssp. *parva*. In the case of *D. verityi*, the County of Ventura has produced a study to determine the most feasible portion(s) of Conejo Mountain for acquisition as permanent open space. Despite these management activities, occurrences of these four taxa receive no protection where they occur on private lands and efforts to secure additional protection for certain sites have yet to be achieved. These four taxa appear to be likely to become endangered species within the foreseeable future. Critical habitat is not being proposed for these taxa for reasons discussed in the ''Critical Habitat'' section of this final rule.

Critical Habitat

Critical habitat is defined in section 3 of the Act as: (i) 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 (I) essential to the conservation of the species and (II) that may require special management considerations or protection and; (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon the determination 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.

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, the Secretary designate critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat would not be prudent for these six plant taxa. Service 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 human activity, and 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.

As discussed under Factor A in the ''Summary of Factors Affecting the Species'' section, both *Astragalus brauntonii* and *Pentachaeta lyonii* face numerous anthropogenic threats and these species occur mostly on private land. The publication of precise maps and descriptions of critical habitat in the Federal Register would make these plants more vulnerable to incidents of vandalism and, therefore, could contribute to the decline of these species. As discussed under Factor B, *A. brauntonii* and the four *Dudleya* taxa are particularly threatened by overcollection, an activity difficult to regulate and enforce. Taking is only regulated by the Act with respect to plants in cases of (1) removal and reduction to possession of federally listed plants from lands under Federal jurisdiction, or their malicious damage or destruction on such lands; and (2) removal, cutting, digging-up, or damaging or destroying in knowing violation of any State law or regulation, including State criminal trespass law. Publication of critical habitat descriptions and maps would make *A. brauntonii* and the four *Dudleya* taxa more vulnerable to overcollection and taking.

Each of the taxa in this rule is known to occur, at least in part, on privately owned lands. Critical habitat designation provides protection only on Federal lands or on private lands when there is Federal involvement through authorization or funding of, or participation in, a project or activity. The limited number of populations that occur on Federal lands are managed by the NPS, for which management of listed species is a high priority. All Federal and State agencies and local planning agencies involved have been notified of the location and importance of protecting the habitat of these plant taxa. Protection of their habitat will be addressed through the recovery process and through the section 7 consultation process. Section 7(a)(2) of the Act requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried out by such agency, does not jeopardize the continued existence of a federally listed species, or does not destroy or adversely modify designated critical habitat. The taxa in this rule are all confined to small geographic areas and each population is composed of so few individuals that the determinations for jeopardy and adverse modification would be similar. Therefore, designation of critical habitat provides no additional benefit beyond those that these taxa would receive by virtue of their listing as endangered or threatened species and likely would increase the degree of threat from vandalism, collecting, or other human activities. The Service finds that designation of critical habitat for these plants is not prudent at this time.

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 conservation actions by Federal, State, and private agencies, groups, 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. 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)(2) requires Federal agencies to insure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Five of the taxa, *Astragalus brauntonii, Dudleya cymosa* ssp. *marcescens, D. cymosa* ssp. *ovatifolia, D. verityi*, and *Pentachaeta lyonii*, occur within the current boundaries of the

SMMNRA. Land acquisition activities for conservation purposes are possible within the SMMNRA boundary and could include unprotected populations of these plant taxa. Activities that could potentially affect these taxa and their habitats on NPS lands are primarily recreational activities including hiking, equestrian use, and rock climbing. Urban development projects occurring on private lands may need permits from Federal agencies, such as section 404 permits from the U.S. Army Corps of Engineers.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all threatened and endangered plants. All prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61 for endangered plants, and 17.71 for threatened plants, 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 and reduce the species to possession from areas under Federal jurisdiction. In addition, for plants listed as endangered, the Act prohibits the malicious damage or destruction on areas under Federal jurisdiction and the removal, cutting, digging up, or damaging or destroying of such plants in knowing violation of any State law or regulation including State criminal trespass law. Section 4(d) of the Act allows for the provision of such protection to threatened species through regulation. This protection may apply to these taxa in the future if regulations are promulgated. Seeds from cultivated specimens of threatened plants are exempt from these provisions provided that their containers are marked ''Of Cultivated Origin.'' Certain exceptions to the prohibitions apply to agents of the Service and State conservation agencies.

It is the policy of the Service to increase public understanding of the prohibited acts that will apply under section 9 of the Act. Four of the taxa in this rule (*Astragalus brauntonii*, *Dudleya cymosa* ssp. *marcescens*, *D. cymosa* ssp. *ovatifolia*, and *Pentachaeta lyonii*) are known to occur on lands under Federal jurisdiction. Collection, damage, or destruction of these taxa is prohibited without a Federal endangered species permit. Such activities on non-Federal lands would constitute a violation of section 9 if conducted in knowing violation of California State laws, or in violation of a California State criminal trespass law.

All of the *Dudleya* taxa in this rule are of horticultural interest; however, they are not currently known to be in commercial trade. Intrastate commerce (commerce within a State) is not prohibited under the Act. However, interstate and foreign commerce (sale or offering for sale across State or international boundaries) requires a Federal endangered species permit. (Endangered species may be advertised for sale provided the advertisement contains a statement that no sale may be consummated until a permit has been obtained from the Service).

The Act and 50 CFR 17.62, 17.63, and 17.72 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered or threatened species under certain circumstances. Such permits are available for scientific purposes and to enhance the propagation or survival of the species. For threatened plants, permits are also available for botanical or horticultural exhibition, educational purposes, or special purposes consistent with the purposes of the Act. It is anticipated that few trade permits would ever be sought or issued because the species are not in commercial cultivation or common in the wild. Questions regarding whether specific activities will constitute a violation of section 9 of the Act should be directed to the Assistant Field Supervisor of the Service's Ventura Field Office (see **ADDRESSES** section). Requests for copies of the regulations regarding listed species and inquiries about prohibitions and regulations may be addressed to the U.S. Fish and Wildlife Service, Ecological Services, Endangered Species Permits, 911 NE 11th Avenue, Portland, Oregon 97232–4181 (telephone: 503/231–6241; facsimile: 503/231–6243).

National Environmental Policy Act

The Service has determined that Environmental Assessments and Environmental Impact Statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the Federal Register on October 25, 1983 (48 FR 49244).

Required Determinations

The Service has examined this regulation under the Paperwork Reduction Act of 1995 and found it to contain no information collection requirements. This rulemaking was not subject to review by the Office of Managment and Budget under Executive Order 12866.

References Cited

A complete list of all references cited herein is available upon request from the Service's Ventura Field Office (see **ADDRESSES** section).

Author

The primary author of this final rule is Tim Thomas, Ventura Field Office (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Regulation Promulgation

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is amended as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500, unless otherwise noted.

2. Section 17.12(h) is amended by adding the following, in alphabetical order under FLOWERING PLANTS, to the List of Endangered and Threatened Plants to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
FLOWERING PLANTS							
*	*	*	*	*	*		*
Astragalus brauntonii ...	Braunton's milk-vetch	U.S.A. (CA)	Pea (Fabaceae)	E	606	NA	NA

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
*	*	* *	*		*		*
Dudleya abramsii ssp. *parva*.	Conejo dudleya	U.S.A. (CA)	Stonecrop (Crassulaceae).	T	606	NA	NA
Dudleya cymosa ssp. *marcescens*.	Marcescent dudleya ...	U.S.A. (CA)	Stonecrop (Crassulaceae).	T	606	NA	NA
Dudleya cymosa ssp. *ovatifolia*.	Santa Monica Mountains dudleya.	U.S.A. (CA)	Stonecrop (Crassulaceae).	T	606	NA	NA
*	*	* *	*		*		*
Dudleya verityi	Verity's dudleya	U.S.A. (CA)	Stonecrop (Crassulaceae).	T	606	NA	NA
*	*	* *	*		*		*
Pentachaeta lyonii	Lyon's pentachaeta ...	U.S.A. (CA)	Aster (Asteraceae)	E	606	NA	NA
*	*	* *	*		*		*

Dated: December 26, 1996.

Jay L. Gerst,

Acting Director, Fish and Wildlife Service.

[FR Doc. 97–2059 Filed 1–28–97; 8:45 am]

BILLING CODE 4310–55–P

50 CFR Part 17

RIN 1018–AB75

Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Northern Population of the Copperbelly Water Snake

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines threatened species status pursuant to the Endangered Species Act of 1973, as amended (Act), for the copperbelly water snake (*Nerodia erythrogaster neglecta*) in the northern portion of its range. The Service also determines that the copperbelly water snake does not warrant listing as a threatened species in the southern portion of its range and is not finalizing that portion of the proposal. This snake was referred to as the northern copperbelly water snake in several previous Federal Register publications. Historical records and recent studies indicate that this animal has declined substantially, especially in the northern portion of its range, and now persists largely in isolated pockets of suitable habitat. Rangewide, the snake has been impacted by a variety of human-induced causes, including urban/suburban encroachment, coal mining, and wetland drainage. These impacts continue to threaten the snake in the northern portion of its range but are being substantially reduced in the southern portion of its range due to modifications in surface coal mining and reclamation practices.

EFFECTIVE DATE: February 28, 1997.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the Service's Bloomington Field Office, 620 South Walker Street, Bloomington, Indiana 47403; telephone 812/334–4261.

FOR FURTHER INFORMATION CONTACT: David Hudak, Field Supervisor (see **ADDRESSES** section), 812/334–4261, extension 200.

SUPPLEMENTARY INFORMATION:

Background

The plain-belly water snake (*Nerodia erythrogaster*) was formally described as a species in 1938 as *Natrix erythrogaster* (Clay 1938). The copperbelly water snake, *Nerodia erythrogaster neglecta*, was recognized as a distinct subspecies in 1949 (Conant 1949). It is one of six recognized subspecies of the plain-belly water snake (McCranie 1990). The Act defines ''species'' to include ''any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife . . .'' (section 3(15)). Thus, although taxonomically recognized as a subspecies, *N. e. neglecta* will be referred to as a ''species'' through the remainder of this rule. This legal, as opposed to biological, use of the term ''species'' should not be understood to mean that this rule covers the entire species *Nerodia erythrogaster*. The two decisions announced in this rule apply only to the subspecies *N. e. neglecta*.

Because *N. e. neglecta* was not recognized until 1949, museum specimens of the copperbelly water snake archived before that time were identified only as the plain-belly water snake. Correction of these mislabelled specimens is difficult due to the rapid fading of colors from preserved specimens. Thus, the original range and distribution of the copperbelly water snake is not precisely known due to this taxonomic history and the loss of suitable habitat before recognition of the copperbelly water snake as a distinct subspecies (Conant 1949, 1951, 1955; Minton 1972).

The key field identification feature of the copperbelly water snake is its coloration. The snake has a solid dark, usually black, back with a bright orange-red underside that is visible from a side view. The head and eyes of the copperbelly water snake are proportionally larger than similar species (Clay 1938; Conant 1938, 1951; Minton 1972). The copperbelly water snake is most often confused with the yellowbelly water snake (*Nerodia erythrogaster flavigaster*), an adjacent subspecies to the south and west in Illinois and Kentucky. The most obvious single distinguishing characteristic is the belly color. The copperbelly water snake has a bright orange-red underside, whereas the yellowbelly water snake has a pale yellow belly. In addition, it has blotches of dark pigment extending onto the ventral scales that meet or nearly meet at the belly, whereas the yellowbelly water snake has dark pigment encroaching onto only the edge of the ventral scales (Brandon and Blanford 1995; Minton 1972; Conant 1938, 1949).

After its recognition as a subspecies, the known historical range of the copperbelly water snake was described by Schmidt (1953) as ''south central Michigan and northwestern Ohio, southwestward through Indiana to extreme southeastern Illinois and adjacent Kentucky.'' A notable feature of the documented historical range is the