States (Gentry 1986) and currently experiences one of the highest human population growth rates in the country. Habitat destruction or modification adversely affects taxa native to this area by reducing population densities and contributing to habitat fragmentation. Rapid urbanization and agricultural conversion in Orange and San Diego Counties has already eliminated or reduced populations of the four plant taxa addressed in this proposed rule. These species have also been adversely affected by the invasion of non-native plants, off-road vehicle use, increased erosion, grazing, and trampling by humans.

By the 1980's, nearly 90 percent of the entire coastal sage scrub ecosystem in California had been lost (Westman 1981a, 1981b). In San Diego County, 95 percent of the native perennial grasslands and nearly 60 percent of the coastal sage scrub had been eliminated as a result of urban and agricultural development (Oberbauer and Vanderweir 1991, San Diego Association of Governments 1995). From 1950 to 1990, the human population of San Diego County increased by 349 percent and the population of Orange County increased by 1,015 percent (California Department of Finance 1993). Most of these increases occurred within or near sites historically occupied, in part, by coastal sage scrub. About 125,000 acres of coastal sage scrub remain in San Diego County (Service 1991). Between 1990 and 2015, the number of occupied housing units in San Diego County is expected to increase by 69 percent (San **Diego Association of Governments** 1991). The trend of habitat loss and fragmentation is expected to continue as the population of southern California expands.

Populations of the proposed taxa in Baja California are also threatened by land use practices. For example, Bowler (1990) and Oberbauer (1994) reported that coastal scrub vegetation in northern Baja California is being grazed, burned to increase grass production, and rapidly converted to row-crop agriculture or condominiums, campgrounds, and resort housing. Rea and Weaver (as cited in Atwood 1990) also noted that coastal sage scrub in Baja California ". . . has been seriously degraded by burning, grazing, and conversion to vineyards during the past two decades.'

## Discussion of the Four Species Proposed for Listing

Acanthomintha ilicifolia (San Diego thornmint) was first described by Asa Gray as Calamintha ilicifolia, based on a type specimen collected from "lower California," (Gray 1872). Gray (1878) subsequently renamed the species *A. ilicifolia. A. ilicifolia* is an annual aromatic herb of the mint family (Lamiaceae). Members of the genus have whorled flowers subtended by a pair of leaves and several sharply-spined bracts. *A. ilicifolia* can be distinguished from other members of the genus by its hairless anthers and style. The tubular, two-lipped corollas are white with rose markings on the lower lip.

Acanthomintha ilicifolia usually occurs on clay soils in open patches of coastal sage scrub and chaparral of coastal San Diego County and south to San Telmo in northern Baja California, Mexico. This taxon is considered to be . . one of the most restricted clay soil endemics" (Oberbauer 1993). It is frequently associated with gabbro soils derived from igneous rock, and also occurs in calcareous marine sediments. About 40 percent of the known 35 historic populations of A. ilicifolia in the United States have been extirpated. Currently, about 40,000 individuals are distributed over 20 sites in the United States ranging from San Marcos east to Alpine and south to Otay Mesa (San Diego County) (California Native Natural Diversity Data Base (CNNDDB) 1994, Reiser 1994). At least nine sites are known to have recently supported A. ilicifolia in Baja California, Mexico. The status of this species in Mexico is uncertain.

Dudleya stolonifera (Laguna Beach liveforever) was first described by Reid Moran (1949), based on a specimen collected in 1948 from Aliso Canyon (Orange County). This succulent perennial member of the stonecrop family (Crassulaceae) has basal rosettes of flat, oblong, bright green leaves that arise from a woody base. Its flowers have bright yellow-green petals that are fused near their base. D. stolonifera is distinguished by its branching stolons, with lateral vegetative branches that arise from the basal rosette (Moran 1977). D. stolonifera occurs on steep cliffs in canyons near Laguna Beach. This species is known from only six populations, comprising a total of 8,000 to 10,000 individuals (Fred Roberts, Service botanist, pers. comm. 1994).

*Hemizonia conjugens* (Otay tarweed) was first described by David D. Keck (1958) based on a specimen collected by L.R. Abrams from river bottom land in the Otay area of San Diego. *H. conjugens*, a glandular, aromatic annual of the sunflower family (Asteraceae), has a branching stem from 5 to 25 centimeters (2 to 9.8 inches) in height, and deep green or gray-green leaves with soft, shaggy hairs. The yellow flower heads are composed of 8 to 10 ray flowers and 13 to 21 disk flowers with hairless or sparingly downy corollas. The phyllaries are keeled with short-stalked glands and large, unstalked, flat glands near the margins. *H. conjugens* occurs within the range of H. fasciculata and H. paniculata. Certain morphological characteristics of *H. conjugens* are intermediate between those of the closely related species, H. fasciculata and H. paniculata (Tanowitz 1982). H. conjugens can be distinguished from other members of the genus by its keeled phyllaries, black anthers, and its number of disk and ray flowers.

Hemizonia conjugens has a very limited distribution, consisting of 15 populations near Spring Valley in southern San Diego County and one population in Baja California, Mexico (Rieser 1994; Sandy Morey, Endangered Plants Program Coordinator, California Department of Fish and Game, in litt. 1994). Three of the 18 historic localities of *H. conjugens* in the United States are considered to be extirpated (Hogan 1990, S. Morey in litt. 1994). This taxon is restricted to clay soils in coastal sage scrub and grassland habitats. H. conjugens appears to tolerate mild levels of disturbance such as light grazing (Dr. Barry Tanowitz, University of California, Santa Barbara, in litt. 1977; Hogan 1990). Such mild disturbances may create sites necessary for germination (Tanowitz 1977), but the species is threatened by activities such as development and intensive agriculture. Until its rediscovery in Baja California in 1977, this species was considered to be extinct as a result of extensive development within its range (Tanowitz 1978).

Monardella linoides.ssp. viminea was first described in 1902 by Edward L. Greene, who named it Monardella viminea, from a type specimen collected by Vassey in 1880 (Greene 1902). Greene (1906) subsequently renamed the plant Madronella viminea. Munz (1935) reduced the rank of Monardella viminea to a subspecies of Monardella linoides. Monardella linoides ssp. *viminea* is a perennial herb of the mint family (Lamiaceae) with a woody base and aromatic foliage. The leaves of this species are linear to lanceolate. Its pale white to rose-colored flowers are borne in dense terminal heads subtended by greenish-white, often rose-tipped bracts. This taxon can be distinguished from other members of the genus by its glaucous-green, hairy stem and its conspicuously gland-dotted bracts. Monardella linoides ssp. viminea often grows in sandy washes and floodplains, and is frequently associated with