

In 1993, the Jaw Gulch population was estimated to comprise up to 1,000 individuals covering an area of less than 2 hectares (5 acres) (C. Rutherford and T. Thomas, USFWS, pers. obs. 1993). During Ingram's field studies in 1990, the Carrington Point population consisted of only 20 individuals (Ingram 1990); more favorable climatic conditions in the past few years may have resulted in higher numbers of plants, perhaps as many as several hundred. The Jaw Gulch population was also used as a bedding area for deer during the fall of 1993 (Dan Richards, CINP, pers. comm. 1994). Threats to *Castilleja mollis* are soil loss, habitat alteration and predation caused by cattle grazing, deer and elk browsing, deer bedding, and competition with alien plant taxa. Because of the small numbers of isolated populations and individuals, the taxon is also vulnerable to stochastic extinction by such events as storms, drought, or fire. Small numbers of populations and individuals also make the taxon vulnerable to reduced reproductive vigor.

Santa Rosa Island dudleya (*Dudleya blochmaniae* ssp. *insularis*) was first described as *Hasseanthus blochmaniae* ssp. *insularis* by Reid Moran (1950a) based on a collection made at "Old Ranch Point" on Santa Rosa Island in 1950. Moran (1953) combined the genus *Hasseanthus* as a subgenus of *Dudleya*; *Hasseanthus* had previously been segregated from *Dudleya* on the basis of stem characteristics and the presence of vernal (withering) leaves. In so doing, he published the new combination *Dudleya blochmaniae* ssp. *insularis* (Moran 1953). A recent attempt was made by Thompson (1993) to resegment *Hasseanthus* from *Dudleya*; however, because rules of nomenclature were not followed and the morphological differences between these two groups do not appear to merit recognition at the genus level, the taxon will be recognized in this proposed rule under the name *Dudleya blochmaniae* ssp. *insularis*.

*Dudleya blochmaniae* ssp. *insularis* is a small succulent perennial in the stonecrop family (Crassulaceae). The plant has a corm-like root structure, and 15 to 30 oblanceolate leaves in a basal rosette, from which several flowering stems 3 to 7 cm (1.2 to 2.8 in) long arise. The white, five-petaled flowers and the resulting fruits are fused at the base and wide-spreading distally. This subspecies is distinguished from two other mainland subspecies of *Dudleya blochmaniae* on the basis of the more numerous rosette leaves, shorter floral stems, more pronounced glaucousness of young floral stems and their leaves,

and the size and shape of the lower bracts (Moran 1950a, Bartel 1993).

*Dudleya blochmaniae* ssp. *insularis* is only known from the type locality near Old Ranch Point, also known as Marsh Point, on the east end of the island. The taxon occupies an area of less than 1 hectare (2 acres) of an ancient marine terrace with a cobbly surface, and associated with owl's clover (*Castilleja exserta*), goldfields (*Lasthenia californica*), and alien annual grasses. The number of individuals is estimated to be 2,000 (Rutherford and Thomas, pers. obs. 1993). Threats to *Dudleya blochmaniae* ssp. *insularis* are soil loss; habitat alteration caused by cattle, elk, and deer trampling; vehicle access; and collecting. Because this taxon is restricted to one population, the plant is also vulnerable to stochastic extinction by such events as storms, drought, or fire. The single population and restricted number of individuals also make the taxon vulnerable to reduced reproductive vigor.

Munchkin dudleya (*Dudleya* sp. nov. "East Point" (S. McCabe, pers. comm. 1994)) was first collected by Reid Moran in 1950. In his dissertation on the genus *Dudleya*, he included it in the description of *Dudleya greenei*, but remarked upon how it differed, and described it as "forma nana." Subsequent floras treated the form in synonymy with *Dudleya greenei* (Munz and Keck 1973, Smith 1976). In 1993, Paul H. Thomson illegitimately published the name *Dudleya nana*, based on the description of forma nana in Moran's dissertation. Stephen McCabe has submitted an article describing a new species of *Dudleya* to the journal *Madroño* (S. McCabe, pers. comm. 1994).

Like *Dudleya blochmaniae* ssp. *insularis* described above, this plant is a small succulent perennial in the stonecrop family (Crassulaceae). The plant has a short caudex-like stem, and small, gray, ovate to oblanceolate leaves in a cluster of up to 20 basal rosettes, from which several flowering stems 2.5 to 7 cm (1 to 2.75 in) long arise. The pale yellow, five-petaled flowers are fused at the base and spread only at the tips.

*Dudleya* sp. nov. "East Point" is known only from one population comprising three colonies near East Point on Santa Rosa Island. The total number of individuals in the three colonies has been estimated to be 3,200 (S. McCabe, pers. comm. 1994). The colonies occur on a low windswept ridge with a cobbly soil surface, which is bereft of any other vegetation save scattered alien annual grasses. Several hundred plants were observed uprooted

with roots exposed during the spring of 1993, most likely a result of cattle grazing and trampling (S. Chaney, CINP, pers. comm. 1993). Threats to *Dudleya* sp. nov. "East Point" are soil loss, habitat alteration, and predation caused by cattle and deer trampling and grazing. Because it is restricted to one population, the taxon is vulnerable to stochastic extinction by such events as storms, drought, or fire. The single population and limited number of individuals also make the taxon vulnerable to reduced reproductive vigor.

Santa Cruz Island dudleya (*Dudleya nesiotica*) was first described by Reid Moran (1950b) as *Hasseanthus nesioticus* based on a specimen collected from "flat area near edge of sea bluff, Fraser Point," on the west end of Santa Cruz Island in 1950. Three years later, Moran (1953) transferred the species to the genus *Dudleya*, thereby forming the new combination *Dudleya nesiotica*.

Like the two previously described dudleyas, *Dudleya nesiotica* is a succulent perennial in the stonecrop family (Crassulaceae). The plant has a corm-like stem with 8 to 16 oblanceolate leaves in a basal rosette from which several flowering stems 3 to 10 cm (1.2 to 4.0 in) tall arise. The five white-petaled flowers and resulting fruits are erect to ascending.

*Dudleya nesiotica* is known only from one population comprising two colonies within 1.6 km (1 mi) of the type locality at Fraser Point on the west end of Santa Cruz Island. Approximately 1,000 plants occupy less than 10 acres of habitat. The colonies are situated on the lowest marine terrace in association with iceplant (*Mesembryanthemum crystallinum* and *M. nodiflorum*), alkali heath (*Frankenia salina*), goldfields, and pickleweed (*Salicornia virginica*). Threats to *Dudleya nesiotica* are soil loss, habitat alteration, and predation caused by pig rooting. Like many dudleyas, *Dudleya nesiotica* is also threatened by collecting for botanical or horticultural use (Moran 1979). Because the taxon is restricted to only one population, it is also vulnerable to stochastic extinction by such events as storms, drought, or fire. The single population and limited number of individuals also make the taxon vulnerable to reduced reproductive vigor.

Island bedstraw (*Galium buxifolium*) was first described by E.L. Greene as *Galium buxifolium* in 1886 based on specimens collected on Santa Cruz Island (Ferris 1960). In 1958, Lauramay Dempster (1958) described the taxon as a variety of *Galium catalinense*. Ferris