## **NOTEWORTHY COLLECTION – CALIFORNIA**

# Malacothrix saxatilis (Nuttall) Torrey & A. Gray var. saxatilis (Asteraceae) Discovered in Orange County, Southern California

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Malacothrix saxatilis (Nuttall) Torrey & A. Gray var. saxatilis, cliff malacothrix, is a California Native Plant Society (CNPS) List 4 species, which is restricted to scrub habitats along the immediate coast only from Santa Barbara County and Ventura County in southern California (Davis 1993, Malacothrix, pp. 314-315, in Hickman (ed.), The Jepson Manual: Higher Plants of California, University of California Press Tibor (ed.) 2001, Inventory of Rare and Endangered Plants of California, Sixth Edition, California Native Plant Society, Sacramento). This perennial herb is a well-known component of the coastal bluff flora between Point Conception and Santa Barbara (Munz 1974, A Flora of Southern California, University of California Press; Abrams 1940, Illustrated Flora of the Pacific States, Stanford University Press), but it has not been reported from these floras or in treatments of the Asteraceae from local floras covering coastal Ventura, Los Angeles, Orange, and San Diego counties (Mattoni and Longcore 1997, Crossosoma 23:71-102; Wishner 1997, Flora of the Santa Monica Mountains: synonymized checklist and index, Crossosoma 23:3-63; Wishner 1998, Addendum, Crossosoma 24:111-112; Wishner 2000, Addendum II, Crossosoma 26:13-14; Wishner 2003, Addendum III, Crossosoma 28: 14; Roberts 1998, A Checklist of the Vascular Plants of Orange County, California, Second Edition, F.M. Roberts Publications, Encinitas; Simpson et al. 2002, Checklist of the Vascular Plants of San Diego County, California, San Diego Natural History Museum,

www.sdnhm.org/research/botany/sdplants/index.html

Herein, we report the first known records of this taxon in Orange County, and describe its habitat and associated species.

Orange Co., City of Laguna Beach, west of Pacific Coast Hwy, vicinity of Aliso Creek Park. Rare, growing in disturbed coastal bluff scrub dominated by exotic species of Acacia, Atriplex, Bromus, Cortaderia, Ipomoea, and Myoporum. Native species at the site include Dudleya lanceolata (Nutt.) Britton & Rose, Euphorbia misera Benth., Isomeris arborea Nutt., Encelia californica Nutt., Eriogonum fasciculatum Benth. var. foliolosum (Nutt.) Abrams, Isocoma menziesii (Hook. & Arn.) G. Nesom, and Rhus integrifolia (Nutt.) Brewer & S. Watson. Location at 33.507°N 117.750°W, UTM Zone 11S N3707284 E430681 (NAD 27), elev <50 ft., USGS 7.5-minute quandrangle Dana Point, T8S R8W NW 1/4 of Section 5, 21 August 1999, Riefner 99-360 (RSA);

Orange Co., City of Dana Point, west of Pacific Coast Hwy, vicinity of Salt Creek Park. Locally abundant, growing in coastal bluff scrub dominated by native species including *Atriplex californica* Moq., *A. lentiformis* (Torrey) S. Watson ssp.

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*lentiformis, Camissonia cheiranthifolia* (Sprengel) Raim ssp. *suffruticosa* (S. Watson) Raven, *Dudleya lanceolata, Isomeris arborea, Encelia californica, Eriogonum fasciculatum* var. *foliolosum, Lycium californicum* Nutt., *Rhus integrifolia*, and *Suaeda taxifolia* (Standley) Standley. Non-native species invading the bluff site include species of *Acacia, Atriplex, Bromus, Cortaderia, and Caprobrotus*. Location at 33.481°N 117.724°W, UTM Zone 11S N3703885 E433056 (NAD 27), alt. <50 ft., U.S.G.S 7.5' Quadrangle Dana Point, T8S R8W W 1/2 Section 16, 22 May 1999, *Riefner 99-289* (RSA); same locality, 19 September 2000, *Riefner 00-739* (RSA).

Coastal bluff scrub is a community that is adapted to rocky or poorly developed soils exposed to salty, moisture-laden winds along the immediate coast (Holland 1986, Preliminary Description of the Terrestrial Natural Communities of California, Natural Heritage Program, California Department of Fish and Game, Sacramento). This community is highly vulnerable to extirpation by development and to degradation by exotic plants in the south coast region. For this reason, cliff malacothrix is included in the CNPS inventory of rare and endangered vascular plants with rarity-endangerment-distribution (RED) of 1-2-3, the "watch list." It is also a California Department of Fish and Game "special plant" (California Department of Fish and Game, Natural Diversity Data Base, 2002, Special Vascular Plants, Bryophytes, and Lichens List, Sacramento).

In southern Orange County, coastal bluff scrub is being rapidly replaced by residential development, irrigated ornamental plantings, exotic vegetation, and bluff stabilization projects, which often rely on traditional landscaping techniques that incorporate non-native, often highly invasive plants and concrete or rock rip-rap structures. A brief list of the aggressive exotic plants that are rapidly replacing native coastal bluff scrub species in south coastal Orange County includes acacia (Acacia longifolia (Andrews) Willd., giant reed (Arundo donax L.), black mustard (Brassica nigra [L.] Koch), brome grasses (Bromus spp.), pampas grass (Cortaderia selloana [Schultes] Asch. & Graebner), fennel (Foeniculum vulgare Miller), Perez's sea-lavender (Limonium perezii [Stapf] Hubb.), myop (Myoporum laetum Forster), tree tobacco (Nicotiana glauca Graham), fountain grass (Pennisetum setaceum Forsskal.), Spanish sunflower (Pulicaria paludosa Link), castor bean (Ricinus communis L.), nasturtium (Tropaeolum majus L.), several species of ice plants, Carpobrotus edulis (L.) N.E. Br., Malephora crocea (Jacq.) Schwantes, Mesembryanthemum crystallinum L., Tetragonia tetragonioides (Pallas) Kuntze, and several species of saltbush, most frequently, Australian saltbush (Atriplex semibaccata R. Br.).

Cliff malacothrix grows with other CNPS List 4 plants in southern Orange County. At Laguna Beach, it is associated with *Euphorbia misera*, and in the Salt Creek area, north of Dana Point, it grows with *Suaeda taxifolia* and *Lycium californicum*. Each of these List 4 plants is threatened in south coastal Orange County. If they are to persist in the wild, these plants will require careful monitoring and protection from habitat degradation by exotic species and habitat loss owing to unmitigated development.

There has been little disagreement regarding the circumscription of the majority of species in the genus *Malacothrix*, with the exception of the annual species endemic to the California Islands (Davis 1997, Madroño 44:223-244). Accordingly, the varieties of perennial *Malacothrix* are easily separated. *Malacothrix saxatilis* var. *saxatilis* is easily distinguished from the more common and widespread var. *tenuifolia* (Nutt.) A. Gray by its generally linear to ovate, entire upper leaves, and stems that are leafy to the inflorescence (see the illustration in Abrams 1940, loc. cit.). In Orange County, *M. s.* var. *saxatilis* has a leathery texture, large conspicuous involucres, and generally it flowers later in the season than coastal populations of the var. *tenuifolia*. We found that *M. s.* var.

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saxatilis blooms most frequently in late August and/or in September, but may flower in early spring during wet years. Another plant that is most easily detected during late summer surveys, *Baccharis malibuensis* R. M. Beauch. & Henr. (CNPS List 1B), was recently discovered in Orange County (Boyd 2002, Madroño 49:54); it was previously known only from extreme western Los Angeles County. Therefore, it is not completely surprising to find another late blooming, more northern plant such as cliff malacothrix in Orange County.

Malacothrix saxatilis var. saxatilis should be sought at additional localities in coastal southern California, including the Channel Islands, and on the mainland from cliff and scrub habitats at Point Sherman Park and at the Palos Verdes Peninsula in Los Angeles County, at Abalone Point and San Clemente in Orange County, and on the bluffs at San Onofre in San Diego County. We recommend that in late August and September focused surveys should be conducted as standard protocol, in order to thoroughly document the occurrence of all special-status species that would otherwise not be found during traditional spring to early summer floristic survey programs.



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