

Batiquitos Rare Plant Surveys by California Native Plant Society Rare Plant Survey Committee, Spring 2011

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The Rare Plant Committee of the San Diego chapter of the California Native Plant Society performs annual surveys of rare, sensitive, or endangered plants, as its name suggests. Its mission is to find species and populations that are "falling through the cracks," plants that have not been recently surveyed or that occur in areas where systematic sampling or specimen collection is difficult. In these surveys, we fill a valuable role, checking on rare plants that are not typically monitored.

All work is performed by volunteers, led and supervised by Dr. Frank Landis, a trained botanist and plant ecologist. The survey protocol is basic: volunteers are recruited and trained to identify the plants under field conditions, and populations are either counted or numbers estimated, depending on what is found. The data are recorded on forms from the California Natural Diversity Database (CNDDDB) of the Department of Fish and Game (DFG). Data are shared with the landowner, state CNPS, CNDDDB, CDFG, and other interested parties on request.

In 2011, the Rare Plant Survey Committee chose to survey dune plants, because there was a consensus among informed participants that we had insufficient information on a number of species. In contacting landowners and studying existing records, the committee narrowed down potential survey locations to Silver Strand State Beach, Silver Strand Elementary School Beach, Fiesta Island, Black's Beach, Torrey Pines, San Elijo Lagoon, and Batiquitos Lagoon.

On March 10, 2011, Frank Landis and David Varner, both volunteering for CNPS, worked with Warren Wong, Meredith Osborne, John Ekhoﬀ, and Danny Zaldivar for 3.5 hours, surveying preserved areas at Batiquitos Lagoon, east of the coast Highway (Figure 1 at end).

The areas are roped or fenced oﬀ. In the roped area, set aside as a coast woollyheads (*Nemacaulis denudata* var. *denudata*) refuge, the woollyheads were so prevalent that their number was estimated by counting the number in a square foot and measuring the extent of the population (0310A in Table 1). Other plants were less prolific, and were directly counted at each location where they occurred.

Overall, the surveyors found four sensitive species (Table 1, Figures 1-3):

- Nuttall's lotus (*Lotus nuttallianus* = *Acmispon prostratus* in the next *Jepson Manual* revision), a CDFG list 1B species. An estimated 10,000 were found.
- Coast woollyheads (*Nemacaulis denudata* var. *denudata*), a CDFG list 1B species. Four were found.
- Red sand verbena (*Abronia maritima*), a CDFG list 4 species. One was counted.
- Leopold's rush (*Juncus acutus* ssp. *leopoldii*), a CDFG list 4 species. 63 were found.

The data from this survey are available from Dr. Landis in an Access database, as is a kmz (Google Earth) file of the polygon and points used to generate the image below.

Any requests, questions, or comments should be addressed to Dr. Landis at franklandis03@yahoo.com. It is likely that the rare plant survey committee will focus again on dune plants in the 2011-2012 growing season, and the group would be happy to survey this or other CDFG lands again, if there is a need.

Table 1. Sensitive plants found at Batiquitos lagoon sites.

ScientificName	Map ID	Number Found	Habitat Description
<i>Nemacaulis denudata</i> var. <i>denudata</i>	0310A	~10,000	Found at Batiquitos Lagoon, South of CDFG Enclosure "W1." ~10,000 non-flowering plants in 10 x 30 m carpet, south of area W2, in "Woollyheads refuge" Surrounding fence 2' high. Cover low, aside from carpet of <i>Nemacaulis</i> seedlings. Other plants include <i>Carpobrotus edulis</i> , <i>Heterotheca grandiflora</i> , <i>Frankenia salina</i> , <i>Camissoniopsis cheiranthifolia</i> . Major threats include invasives, especially <i>Carpobrotus</i> , and other weeds such as <i>Bromus diandrus</i> , <i>Oxalis pes-caprae</i> , <i>Hypochoeris glabra</i> . All <i>Nemacaulis</i> are seedlings. Expect major mortality over season through self thinning.
<i>Nemacaulis denudata</i> var. <i>denudata</i>	0310B	1	Found at Batiquitos Lagoon, South of CDFG Enclosure "W1." One non-flowering plant outside fence on east-facing berm on sand, with scattered <i>Camissoniopsis cheiranthifolia</i> , <i>Distichlis spicata</i> , and <i>Heterotheca grandifolia</i> .
<i>Nemacaulis denudata</i> var. <i>denudata</i>	0310C	1	Found at Batiquitos Lagoon, South of CDFG Enclosure "W1." One non-flowering plant outside fence on east-facing berm on sand, with scattered <i>Camissoniopsis cheiranthifolia</i> , <i>Distichlis spicata</i> , and <i>Heterotheca grandifolia</i> .
<i>Nemacaulis denudata</i> var. <i>denudata</i>	0310D	12	Found at Batiquitos Lagoon, South of CDFG Enclosure "W1." 12 non-flowering plants in sand, with <i>Heterotheca grandifolia</i> .
<i>Lotus nuttallianus</i>	0310E	2	Found at Batiquitos Lagoon, CDFG Enclosure "A." In bare sand, in steep eroding sand dune face near water's edge. Very low cover. Nearby plants include <i>Camissoniopsis cheiranthifolia</i> , and <i>Cakile maritima</i> upslope. Plants growing from seeds in sand, where sand is eroding into ocean. Erosion is an issue.
<i>Lotus nuttallianus</i>	0310F	2	Found at Batiquitos Lagoon, CDFG Enclosure "A." 2 plants, 1 plant 6" wide, 1 plant 1" wide about 1 meter south of the first. In bare sand, in steep eroding sand dune face near water's edge. Very low cover. Nearby plants include <i>Camissoniopsis cheiranthifolia</i> , with <i>Cakile maritima</i> upslope. Plants growing from seeds in sand, where sand is eroding into ocean. Erosion is an issue.
<i>Abronia maritima</i>	0310G	1	Found at Batiquitos Lagoon, enclosure "W2." ~1 plant, 30'x15' in size, flowering growing interlaced with <i>Carpobrotus edulis</i> and <i>Isocoma menziesii</i> , <i>Lotus scoparius</i> , and <i>Picris echioides</i> .
<i>Nemacaulis denudata</i> var. <i>denudata</i>	0310H	8	Found at Batiquitos Lagoon, CDFG Enclosure "W2," near edge of <i>Abronia</i> patch. 8 non-flowering plants on bare sand near edge of <i>Abronia maritima</i> patch. Few threats. Overzealous weed control may be problematic.
<i>Nemacaulis denudata</i> var. <i>denudata</i>	0310I	6	Found at Batiquitos Lagoon, CDFG Enclosure "W2," on dead <i>Camissoniopsis</i> . 6 non-flowering plants on dead <i>Camissoniopsis</i> , surrounded by bare sand. Few threats. Overzealous weed control may be problematic.
<i>Juncus acutus</i> ssp. <i>leopoldii</i>	0310J	63	On southern edge of Found at Batiquitos Lagoon, east of highway and west of train tracks. Plants dot southern edge of Batiquitos lagoon, in polygon mapped. None are flowering. Construction and invasives may threaten plants.

Figure 1. Overview of survey points and polygons at Batiqitos Lagoon



Figure 2. Southern survey points and polygons at Batiquitos Lagoon



Figure 3. Northern survey points and polygons at Batiqitos Lagoon

