Added to California Rare Plant Rank 1B.1 of the CNPS Inventory on December 4, 2013

Rare Plant Status Review: *Eriastrum rosamondense*
Proposed Addition to California Rare Plant Rank 1B.1, G1 / S1

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Changes made to the original document appear in blue text.

Background

Eriastrum rosamondense D. Gowen is an annual herb in the Polemoniaceae that is endemic to a small area between Rosamond and Lancaster in Los Angeles County, and from Rogers Dry Lake in Kern County. It was recently described by Gowen (2013), and is therefore not included in *The Jepson Manual* (Patterson 1993) or *The Jepson Manual, Second Edition* (De Groot et al. 2012); the *Flora of North America* (*FNA*) treatment for Polemoniaceae is not yet available. *Eriastrum rosamondense* was previously identified as *E. hooveri* (Jeps.) H. Mason, which is one of the smallest flowered members of the genus. It is differentiated from *E. hooveri* in having pale blue corollas (versus white) and stamens that are exserted almost half the length of the corolla lobe (versus included). The corollas of *E. rosamondense* can also sometimes appear white, especially on dried herbarium specimens; however, they are opaque, whereas the corollas of *E. hooveri* are frequently translucent (S. DeGroot pers. comm. 2013). All of the collections of *E. hooveri* from near Lancaster, including those mentioned in Boyd and Porter (1999), are actually *E. rosamondense*. Prior to the description of *E. rosamondense*, it was recently suspected that the plants identified as *E. hooveri* from north of Lancaster were something different; a 2010 collection by Silverman et al. (*7993, UCR231914*) noted the plant as being "similar to *E. hooveri*, but appears to be a different taxon" (Consortium of California Herbaria 2013). *Eriastrum rosamondense* is also similar to *E. diffusum*, which is more problematic. It is structurally like a miniature version of *E. diffusum*, but differs in having smaller flowers, leaves that are entire (versus leaves mostly with one pair of lateral lobes) (Gowen 2013), stamens that are usually exserted 1 mm or less past the sinuses (versus being exserted 1 mm or more), and a style that is usually equally to or less than 3 mm long at anthesis (versus usually 4 mm or longer in *E. diffusum*) (S. De Groot pers. comm. 2013). Due to their similarities, Gowen (2013) considered placing *E. rosamondense* as a subspecies of *E. diffusum*. However, he treated *E. rosamondense* as a unique species since *E. diffusum* occurs no less than 100 km to the east, in San Bernardino County, and also because of their differences in leaf morphology (Gowen 2013). *Eriastrum rosamondense* is known to flower mostly from April to May, but has been collected from as late as June and July (Consortium of California Herbaria 2013).

Eriastrum rosamondense occurs on low hummocks in alkali flats and scalds throughout chenopod scrub that is adjacent to vernal pools. It is often on sandy and silty loam soil, but also occurs on clay; with one record noting its occurrence on dark cryptogamic crusts (*Boyd & Hughes 10189*). *Eriastrum rosamondense* is known from an

approximate elevation of 700 to 715 meters. Based on herbarium labels, the following taxa were noted to occur in association with *E. rosamondense* (note: a ^ denotes a taxon's inclusion in the CNPS Inventory; a * denotes non-native taxa): *Allium fimbriatum* var. *mohavense*, *Atriplex confertifolia*, *A. polycarpa*, *A. rosea*, *Bromus rubens**, *Calochortus striatus*^, *Centromadia pungens*, *Erodium cicutarium**, *Hordeum depressum**, *H. murinum* subsp. *leporinum**, *Kochia californica*, *Lasthenia californica*, *Lepidium dictyotum*, *L. fremontii*, *Malacothrix coulteri*, *Mentzelia affinis*, *M. veatchiana*, *Pectocarya penicillata*, *Phacelia fremontii*, *Plagiobothrys leptocladus*, *Schismus barbatus**, *Suaeda nigra*, and *Tetradymia glabrata* (Consortium of California Herbaria 2013).

Eriastrum rosamondense is known only from approximately ~~six~~ seven occurrences, six from the Rosamond Dry Lake area north of Lancaster, Los Angeles County, and one from Rogers Dry Lake, Kern County. Its distribution in the Rosamond Dry Lake area spans only a several mile area between Rosamond and Lancaster, and all ~~of its occurrences~~ are less than 3.5 air miles apart, with two occurrences (number 1 and 2) being less than a single mile in separation. Its entire range fits within a rectangle of 350 square miles, indicating that rarity status is probably appropriate (S. DeGroot pers. comm. 2013). All of its occurrences were mapped from herbarium collections, and due to such short distances between collection records from the Rosamond Dry Lake area, it is possible that some occurrences might actually turn out to be a single occurrence. However, we need to know the size and extent of its populations prior to making this determination, and additional field surveys are necessary. Some collection records indicate *E. rosamondense* as being common to fairly common (*Boyd & Hughes 10189*; *Sanders & Lott 13938, 13979*) (Consortium of California Herbaria 2013); however, such a small area of occupancy for *E. rosamondense* makes it a rare plant deserving of conservation (Gowen 2013).

The most serious threats to *E. rosamondense* are ~~is~~ development, non-native invasive plants, and agriculture (S. DeGroot pers. comm. 2013). It is suspected that there are strong development pressures in the area that *E. rosamondense* occurs, and there are other sensitive plants that occur in the general area, including *Chorizanthe spinosa* (CRPR 4.2), *Goodmania luteola* (CRPR 4.2), *Calochortus striatus* (CRPR 1B.2), and possibly others (D. Gowen pers. comm. 2013). One occurrence of *Calochortus striatus* from the area has recently been extirpated due to development (EO 100), another is considered possibly extirpated (EO 98), and many other occurrences of *C. striatus* from the area are noted to have the following threats: residential development, military activities, non-native grasses, past and current agriculture use, dumping, and off-highway-vehicles (CNDDB 2013). A thorough analysis of immediate, possible, and/or potential threats to *E. rosamondense* is greatly needed.

Based on the available information, CNPS and CNDDB recommend adding *Eriastrum rosamondense* to California Rare Plant Rank 1B.1 of the CNPS Inventory.

Recommended Actions
CNPS: Add *Eriastrum rosamondense* to 1B.1
CNDDB: Add *Eriastrum rosamondense* to G1 / S1

Draft CNPS Inventory Record
Eriastrum rosamondense D. Gowen
Rosamond eriastrum
Polemoniaceae
CRPR 1B.1
Los Angeles, Kern
Lancaster West (161B) 3411862, Rosamond (186C) 3411872, Rogers Lake South (185D) 3411777
Chenopod scrub (openings), vernal pools (edges) / alkaline hummocks, often sandy; elevation 700 – 715 meters.
Annual herb. Blooms April to May (June to July).
Known only from the Rosamond and Rogers Dry Lake areas. Threatened by development, agriculture, and non-native plants. Similar to *E. diffusum* and *E. hooveri*; previously identified as the latter. See *Journal of the Botanical Research Institute of Texas* 7(1):21-24 (2013) for original description.

Literature Cited
Boyd, S. and J. M. Porter. 1999. Noteworthy collections. Madroño 46(4): 215-216.

Consortium of California Herbaria. 2013. Data provided by the participants of the Consortium of California Herbaria. Regents of the University of California, Berkeley. Accessed on 16 October 2013. Available online at: http://ucjeps.berkeley.edu/consortium/.

De Groot, S., D. Gowen, and R. Patterson. 2012. *Eriastrum*. Pp. 1041-1043 in Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.), The Jepson Manual: Vascular Plants of California (2nd ed.). University of California Press, Berkeley and Los Angeles.

Gowen, D. 2013. Two new species of Eriastrum (Polemoniaceae) from California. Journal of the Botanical Research Institute of Texas 7(1): 21-24. (original description)

Patterson, R. 1993. *Eriastrum*. Pp. 826-828 in Hickman, J.C. (ed.), The Jepson Manual: Higher Plants of California. University of California Press, Berkeley.