Added to California Rare Plant Rank 1B.1 of the CNPS Inventory on September 30, 2019

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

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Background and Taxonomy

Lasthenia chrysantha (A. Gray) Greene is an annual herb in the Asteraceae endemic to the Central Valley of California. It is included in the *Jepson eFlora* (Chan and Ornduff 2012), *The Jepson Manual* (Ornduff 1993), and *Flora of North America* (Chan and Ornduff 2006). *Lasthenia chrysantha* was originally described as *Crockeria chrysantha* in 1884 (Greene and Gray) and was moved to *Lasthenia* in 1894 (Greene). It is most similar to *L. glabrata* and can be identified by a strongly flattened fruit with a fringed margin that has blunt hairs (vs. fruit that not strongly flattened and glabrous or papillate in *L. glabrata*) (Chan and Ornduff 2019). The specific epithet *chrysantha* means 'with golden flowers' (Charters 2019).

Ecology

Lasthenia chrysantha occurs in vernal pools often with alkaline soils at an approximate elevation of 0 to 200 meters, and blooms from February to April. Potential associated plants are *Layia pentachaeta* subsp. *albida*, *Lepidium dictyotum*, *Plagiobothrys humistratus*, *Spergularia marina*, and *Centromadia pungens* (CCH 2019: CAS-BOT-BC354166, UCD77796).

Distribution and Abundance

Lasthenia chrysantha is currently known from approximately 59 occurrences in the Central Valley ranging from Stanislaus County, south to Kern County. Of the 59 occurrences, 47 (80%) are considered historical (occurrences not seen in over 20 years are considered historical by CNDDB). Of the 47 historical occurrences, two have not been seen in more than 100 years (records 1 and 2), and 29 have not been seen in more than 50 years. One occurrence is located in the Alkali Sink Ecological Reserve, one is located in the Grasslands Wildlife Management Area, one is located on the Jepson Prairie Preserve, five are located on Kerman Ecological Reserve, one is on Calhoun Cut Ecological Reserve, one is located in the Little Panoche Reservoir Wildlife Area, two are located in the Pixley National Wildlife Refuge, two are in the San Joaquin National Wildlife Area, one is in the Stone Corral Ecological Reserve, and the remaining 45 occurrences are on lands of unknown ownership, many of which are found on farmland. Of the 45 occurrences on lands of unknown ownership, 34 are on or surrounded by agricultural fields, eight of which are presumed extirpated, and three are possibly extirpated due to urban development and/or habitat conversion to agriculture. Additional occurrences surrounded by agriculture may be possibly extirpated as well and surveys are needed.

Two of the most recent occurrences (records 50 and 51) have populations counts of 100 to 1,000 plants. Although it was last documented at Jepson Prairie in 1990, it is expected to be currently present and locally common there. According to C. Witham (pers. comm. 2019) "it can be fairly common along the old Lindsey Slough bed, Calhoun Cut and adjacent areas" with "lots on the CDFW Calhoun Cut Ecological Reserve to the west of Jepson", and "a smattering of plants here and there on private property surrounding Jepson".

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There is one disjunct record that is found well outside of the expected range of *L. chrysantha*, on Oak Creek Road in the Mojave Desert, at 910 meters in elevation (over 700 meters higher in elevation than all other known occurrences). The specimen tied to this record (SEINET7073354) is expected to be a different taxon; it may be *L. gracilis* based on a collection of *L. gracilis* in the vicinity of Oak Creek Rd. (UCR123538) (CCH 2019).

Status and Threats
Lasthenia chrysantha is threatened by habitat loss, agriculture, urbanization, and development, with well over 18% of its occurrences presumed or possibly extirpated from one or more of these threats. With only 12 occurrences that have been seen in the past 20 years, 31 occurrences not seen in over 50 years, and 11 of its occurrences being presumed or possibly extirpated, *Lasthenia chrysantha* appears to clearly merit California Rare Plant Rank 1B status, and we recommend a threat rank of 0.1 based on the currently known threats and status of its occurrences. Field surveys are needed to determine if one or more of its historical occurrences found within or adjacent to agricultural lands are still extant.

Summary
Based on the available information, CNPS and CNDDB recommend adding *Lasthenia chrysantha* to California Rare Plant Rank 1B.1 of the CNPS Inventory. If knowledge on the distribution, threats, and rarity status of *L. chrysantha* changes in the future, we will re-evaluate its status at that time.

Recommended Actions
CNPS: Add *Lasthenia chrysantha* to CRPR 1B.1
CNDDB: Add *Lasthenia chrysantha* to G1 / S1

Draft CNPS Inventory Record
Lasthenia chrysantha (A. Gray) Greene
alkali-sink goldfields
Asteraceae
CRPR 1B.1
Fresno, Kern, Kings, Madera, Merced, Solano, Stanislaus, Tulare
Lost Hills NW (265B) 3511966, Sausalito School (287B) 3511982, Delano East (287C) 3511972, Pixley (288A) 3511983, Alpaugh (288B) 3511984, Allensworth (288C) 3511974, Delano West (288D) 3511973, Cairns Corner (310B) 3611922, Woodville (310C) 3611912, Tulare (311A)* 3611923, El Rico Ranch (312C)(?) 3611916, Monson (334A) 3611943, Traver (334B) 3611944, Goshen (334C)* 3611934, Laton (335B) 3611946, Remnoy (335D) 3611935, Kerman (359A)* 3612061, Jamesan (359B) 3612062, Helm (359D) 3612051, Tranquility (360A) 3612063, Gravelly Ford (380C) 3612072, Laguna Seca Ranch (383D) 3612077, El Nido (401B) 3712024, Chowchilla (401D)* 3712013, Arena (422C) 3712036, Hatch (423B)* 3712048, Gustine (423C) 3712038, Crows Landing (424A) 3712141, Ripon (443B) 3712162, Westley (443C) 3712152, Dozier (498D) 3812137
Vernal pools / alkaline; elevation 0-200 meters.
Annual herb. Blooms February to April.
Threatened by habitat loss, agriculture, urbanization, and development. See *Synoptical Flora of North America* 1(2):445 (1884) for original description, and *Manual of the Botany of the Region of San Francisco Bay*, p. 204 (1894) by E.L. Greene for revised nomenclature.

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Literature Cited

Chan, R. and R. Ornduff. 2006. *Lasthenia*. Pp. 336-347 *in* Flora of North America Editorial Committee (eds.), *Flora of North America North of Mexico*, Vol. 5. New York and Oxford.

____. 2012. *Lasthenia*. *In*: Jepson Flora Project (eds.), *Jepson eFlora*. Website http://ucjeps.berkeley.edu/IJM.html [accessed 11 June 2019].

Charters, M. 2019. Botanical Names. Website http://www.calflora.net/botanicalnames/index2.html [accessed 13 June 2019].

[CCH] Consortium of California Herbaria. 2019. Data provided by the participants of the Consortium of California Herbaria. Regents of the University of California, Berkeley. Website http://ucjeps.berkeley.edu/consortium/ [accessed 11 June 2019].

Greene, E. L., A. Gray. 1884. *Synoptical Flora of North America* 1(2): 445. (Original description.)

Greene, E. L. 1894. *Manual of the Botany of the Region of San Francisco Bay* 204.

Ornduff, R. 1993. *Lasthenia*. Pp. 298-300 in *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley.