

Changed to California Rare Plant Rank 1B.1 on January 3, 2012**Rare Plant Status Review: *Calystegia sepium* ssp. *binghamiae*
Rank Change from 1A to 1B.1**

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November 28, 2011

Changes made to the original document appear in blue text.

Calystegia sepium ssp. *binghamiae* has been included in the CNPS Inventory since it was added to the Fifth Edition as a Rank 1B taxon (plants rare, threatened, or endangered in California and elsewhere) in 1994. Since then, it has been moved to rank 1A (plants presumed extinct in California) of the Inventory, since it was presumed extirpated as a result of wetland modification and urbanization. It had been known from four historic occurrences in coastal Southern California, and was **thought to have been** most recently collected in 1932 (*L. Boothe* 1279, POM; CNDDDB EO# 5). **However, this specimen was determined to be *C. sepium* ssp. *limnophila* by Brummitt in 1998 (A. Sanders pers. comm. 2011); therefore, prior to its recent discovery, *C. sepium* ssp. *binghamiae* had actually not been collected since 1917 by I. M. Johnston (M. Provance and A. Sanders pers. comm. 2011).**

On May 17th, 2011, while on an independent botanical survey within the right-of-way for the Tehachapi Renewable Transmission Project (TRTP), A. Sanders collected what appeared to be *Calystegia sepium* ssp. *binghamiae*. The plants were found in an irrigated landscaping area along Edison Avenue in Chino, CA, growing on natal plum (*Carissa* sp.) shrubs (Preston 2011b). The identity of the plants is still in question, as they most closely resemble *C. sepium* ssp. *binghamiae* in all features except that the size, shape, and position of the bractlets do not fit published descriptions, such as *The Jepson Manual* (1993), the original description by E. L. Greene (1887) and *The Illustrated Flora of the Pacific States* (Vol. 3, 1951; Preston 2011b). Taxonomic keys, however, are only as reliable as the plant material they reference; very few specimens of this taxon have ever been collected, so the keys may have not encompassed the full range of variation within *C. sepium* ssp. *binghamiae*. Differences in habitat may appear to be problematic as well. *Calystegia sepium* ssp. *binghamiae* was first collected in freshwater swamps and marshes (Greene 1887), seemingly different habitat than the landscaped area in which the Edison Avenue plants were found. However, the heavily-irrigated landscaped area and poorly-drained soils have created somewhat similar growing conditions to other known locations (SCE 2011a).

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Robert Preston and Richard Brummit, treatment authors for Convolvulaceae and *Calystegia* in *The Jepson Manual, Second Edition*, respectively, were at first very uncertain of the origin and identity of the Edison Avenue plants. After extensive review of the few herbarium specimens available, R. Preston found that the Edison Avenue plants were essentially identical to herbarium vouchers that were collected from Chino Creek in 1917 (*Johnston 1274*, RSA394822, UC277054), at least one mile away from the Edison Avenue collection site (SCE 2011a). R. Brummit and R. Preston currently maintain that the plants growing on Edison Avenue are either *C. sepium* ssp. *binghamiae* or an undescribed taxon (SCE 2011a). If genetic work was to be conducted using the historical vouchers and the newly-discovered plants, it could possibly confirm the identity of the new plants.

Several hypotheses have also arisen regarding the origin of the *C. sepium* ssp. *binghamiae* plants. As they occur in a landscaped area, seeds may have been brought in through the soil of other nursery stock. The nursery of origin has not yet been identified and although this topic is still being researched (SCE 2011a), it is unlikely that this is the source of the newly found occurrence (M. Provance, A. Sanders, and G. Wallace pers. comm. 2011). However, Furthermore, given the historical occurrence of *C. sepium* ssp. *binghamiae* in the Chino Creek area, the plant is expected to be of local origin (Preston 2011a).

The area where *C. sepium* ssp. *binghamiae* has been found growing has been slated for the construction of a subterranean electric transmission line. Southern California Edison, which is in charge of the project, plans to perform a case bore, which will help avoid disturbance of the top 10 feet of soil where the plant is growing. Also, this method will likely eliminate the chance of a frac-out while the drilling takes place (a "frac-out" is a buildup of pressure in the borehole to the point that the ground fractures and fluid escapes to the surface). In the unlikely event of damage to the plant(s) during the construction process, Rancho Santa Ana Botanic Garden has taken cuttings and is successfully growing 25 new individuals. Cuttings were taken from different parts of the plants to capture genetic diversity, if it exists (SCE 2011b). Additionally, a 5-foot tall chain-link fence has been erected around the planting bed to keep trespassers out. The landscaper for the area will be notified to maintain the current irrigation regime, suspend weeding of the bed to reduce the risk of the plant(s) being removed, and reduce herbicide use in the area (SCE 2011b).

Although this plant's identity is still uncertain, the high likelihood that it is either *C. sepium* ssp. *binghamiae* or an undescribed taxon means that it still warrants a high level of protection. CNPS and CNDDDB recommend that the rank of *Calystegia sepium* ssp. *binghamiae* be changed from 1A to 1B.1. If the plants

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identified as *Calystegia sepium* ssp. *binghamiae* are later treated as a newly described taxon, CNPS and CNDDDB will re-evaluate its status at that time.

Recommended Actions

CNPS: Re-rank from California Rare Plant Rank 1A to Rank 1B.1

CNDDDB: Re-rank from G5TH / SH to G5T1 / S1

Revised CNPS Inventory Record:

Calystegia sepium ssp. *binghamiae* (Greene) Brummit

Santa Barbara Morning-Glory

Convolvulaceae

Rank 1B.1

Los Angeles*, ~~Orange*~~, San Bernardino, Santa Barbara*, ~~Ventura*~~

~~Seal Beach (072A)* 33118F1, Hollywood (111D)* 34118A3, Point Mugu (114D)*~~

~~34119A4, Prado Dam (087B) 3311786, Santa Barbara (142B)* 34119D6, Des~~

~~Pueblos Canyon (143B)?* 34119D8~~

Marshes and swamps ([coastal salt and freshwater](#)) (~~coastal~~), [Riparian scrub \(alluvial\) / Historically associated with wetland and marshy places, but possibly in drier situations as well. Possibly silty loam and alkaline.](#)

Elevation 0-220 meters

Perennial rhizomatous herb. Blooms April to May.

Single population rediscovered in Chino in 2011. Previously considered extinct since 1999. Threatened by transmission line development, [housing development, and urbanization](#). Potentially threatened by hydrological alterations, weeding, and herbicide application. Historical occurrences presumed extirpated by wetland modification and urbanization. [Does not key out correctly from ssp. *limnophila* in *The Jepson Manual* \(1993\) and *TJM 2*. See *Bulletin of the California Academy of Sciences* 2:417 \(1887\) for original description.](#)

Literature Cited

Greene, E.L. 1887. Botany of Santa Cruz Island. *Bulletin of the California Academy of Sciences* 2:417-418.

Preston, R. 2011a. Personal communication with CNPS Rare Plant Program regarding status of *Calystegia sepium* subsp. *binghamiae* plants from Chino. August 19, 2011. Senior Botanist, ICF International.

_____. 2011b. Personal communication with S. Riggs regarding identification of *Calystegia sepium* subsp. *binghamiae* plants from Chino. June 2, 2011. Senior Botanist, ICF International.

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Southern California Edison (SCE). 2011a. Management of *Calystegia sepium* subsp. *binghamiae*. Meeting minutes from July 12, 2011. Attendees from USFWS, CDFG, RSABG, ICF, Aspen, SCE.

_____. 2011b. Tehachapi Renewable Energy Project. Proposal for mitigation and management of *Calystegia sepium* subsp. *binghamiae*.

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