Rare Plant Status Review: *Senecio aphanactis*
Proposed Change from California Rare Plant Rank 2B.2 to 1B.2

Ellen A. Dean (CNPS), Adam J. Searcy (CNPS), and Katie Ferguson (CNDDB)
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Changes to the original record are in blue text

This status review is being expedited through an agreement between the California Native Plant Society and the Utom Conservation Fund. Aside from being advanced as part of this agreement, the process, content, and information provided herein is not altered, modified, or developed differently in any way or form compared to other status reviews developed by CNPS.

Background and Taxonomy

Senecio aphanactis Greene is an annual herb in the Asteraceae that has been observed historically from central and southern California (including Santa Catalina, Santa Cruz, and Santa Rosa islands) and Baja California (Calflora 2024, CCH2 2024, CNDDB 2024, iNaturalist 2024). It was added to the CNPS Inventory in 1994 as a CRPR 2B plant (rare in California but more common elsewhere) and is tracked by the CNDDB (CNDDB 2024, CNPS 2024). It is included in *The Jepson Manual* (Barkley 1993), *Jepson eFlora* (Trock 2012) and *Flora of North America* (Barkley 2006). In 2011, this plant was nominated for a change to CRPR 1B (rare in California and elsewhere); the nominator believes the plant is declining in numbers due to competition with *Senecio vulgaris*, a common non-native that differs by having black-tipped phyllaries (vs green tips in *S. aphanactis*) and rayless heads (vs minutely radiate in *S. aphanactis*) (Trock 2012).

Distribution and Abundance

In order to obtain the current California distribution and number of Element Occurrences (EOs) of *S. aphanactis*, we examined several sources of data: records in the CNDDB, unprocessed survey forms submitted to the CNDDB, a recent survey report from a preserve in San Diego County, herbarium specimens available in the CCH2 database, and observation data in the Calflora and iNaturalist databases (Calflora 2024, CCH2 2024, CNDDB 2024, iNaturalist 2024, Roberts 2024). Six records available to us had very vague locations and could not be assessed properly; they are listed in the pink rows at the bottom of the location table. Of the 26 California observations available in iNaturalist, 19 were made available to the CNDDB so that their coordinates were unobscured; the other seven were not available for this analysis.

Based on the records available to us, and matching new records to current CNDDB Element Occurrences (EOs), there are 118 EOs that have been observed in California, including seven from Santa Catalina, Santa Cruz, and Santa Rosa islands. Fifty-eight EOs are historical (not seen in the past 20 years), and 60 are recent. Of the 58 historical EOs, 37 have not been seen since 1974 (50 years), with many of those dating to the early part of the last century.

The species has not been observed/collected on Santa Catalina Island since 1901, on Santa Rosa Island since 1929, or on Santa Cruz Island since 1995 (CCH2 2024, Calflora 2024, Guilliams 2024 pers. comm., Hasenstab-Lehman 2024 pers. comm., iNaturalist 2024, Junak 2024 pers. comm., Schneider 2024 pers. comm). It is possible that those seven historical island EOs are no longer extant. Based on imagery or information provided to CNPS or the CNDDB, 15 mainland historical EOs are likely extirpated (CNDDB 2024, Roberts 2011, Roberts 2024). In addition,

there are no iNaturalist observations north of San Jose (iNaturalist 2024), even though there are eight historical EOs from the Bay Area (based on imagery, four are likely extirpated). According to J. Rebman, who is familiar with this species in western San Diego County, it is barely hanging on at most locations (Rebman 2024 pers. comm.); there are only seven recent observations from that county in our location table. According to Roberts (2024), the species has not been seen in Orange County for 25 years. It has not been collected in Los Angeles County for over 50 years, and there is only one recent record from Riverside or San Bernardino counties (Calflora 2024, CCH2 2024, CNDDB 2024, iNaturalist 2024).

Of the 118 California EOs, 37 locations have estimated population sizes. The majority have 50 or fewer plants. Exceptions include a 1998 survey and collection at Corral Hollow in Alameda County (300-400 plants), a 2008 survey and collection at Otay Mesa in San Diego County (2,000 plants), a 2019 survey near San Clemente in San Diego County (500 plants), and a 2024 survey in Oceanside in San Diego County (259 plants). In addition, the species is doing very well in western Fresno and eastern San Benito counties near or in the Tumey and Panoche Hills and Panoche/Little Panoche Valleys. Thirty-two recent EOs have been documented in this mostly undeveloped region on heavy clay, alkaline soils. Many of these EOs have estimated population sizes between 100 and 500 plants, with four EOs with several thousand plants, one with 10,000, one with 47,000, and one with 76,000. There are several recent EOs from Santa Cruz and San Luis Obispo counties that indicate the species occurs post-fire or post-disturbance (after shrub removal), but the population numbers (when reported) are fewer than 50 plants. According to David Keil, the Santa Cruz County records "…need further examination to better understand their identity" (CNPS Status Review Forum comment 7 January 2025). Some of the EOs without population counts report the population in qualitative terms such as "rare" or "local." Some indicate that the species is growing mixed with *Senecio vulgaris* (Calflora 2024, CCH2 2024, CNDDB 2024).

The majority of the 118 California EOs are located on unprotected private lands or lands of unknown ownership (63 EOs). The others are located on lands owned or managed by: BLM (21); Department of Defense (2); US Bureau of Reclamation (1); National Park Service (2); California State University (3); Caltrans (1); California Dept. of Fish and Wildlife (2); California Dept. of Recreation (3); California State Camp Roberts (1); Caltrans (1); city or county open space (7); or private conservation organizations (11).

Senecio aphanactis was originally ranked as 2B because of its distribution in Baja California, which was assumed to be more robust in terms of locations than the distribution in California. We investigated the current Baja California distribution of *S. aphanactis* by examining herbarium specimen records available in the CCH2 and GBIF databases and observation data in the iNaturalist database (CCH2 2024, GBIF 2024, iNaturalist 2024). We obtained 95 usable location records that were grouped into EOs using the methods of Green and Sims (2018); the two unusable records are in the pink rows at the bottom of the location table. Based on our data and analysis, *S. aphanactis* has 52 EOs in Baja California, of which 43 are historical. Based on imagery, nine of the historical occurrences are likely extirpated. Those familiar with this species in Baja California indicate that moderate numbers of plants have sometimes been observed, depending on rainfall; in particular, Baja EO 35 south of Rosario has good numbers of plants (Mulligan 2024 pers. comm., Rebman 2024 pers. comm.). No population information or land ownership data are available for the other occurrences.

Status and Threats
Senecio aphanactis is rated G3 (Vulnerable) by NatureServe (2024) and S2 (Imperiled) by the CNDDB (CNPS 2024). Of the 118 California EOs of *S. aphanactis*, only 20 have Occurrence Ranks in the CNDDB: 12 have a rank of Excellent (A), six are ranked Good (B) and two are ranked Fair (C). Threats listed for EOs in the CNDDB include cattle grazing, development (roads and housing), inappropriate fire regimes, off road vehicles, competition with non-native plants, erosion, feral pigs, military training activities, grading, trampling by hikers, and mountain bikers. While cattle grazing is listed as a threat, BLM botanist Ryan O'Dell notes that Senecio aphanactis and other native forbs on BLM lands in Fresno and San Benito counties benefit from cattle grazing: "Eastern San Benito County and western Fresno County are within the arid climate (Koppen BSk to BWk) San Joaquin Desert and this is also where most/all of the *Senecio aphanactis* populations occur. These were formerly desert annual forblands and San Joaquin Desert scrub which has, since European settlement, become highly invaded by non-native annual grasses (esp. *Bromus rubens*) and non-native annual forbs. These non-native annuals grow so densely that they outcompete most of the San Joaquin Desert native annuals. In most areas of the San Joaquin Desert, it is primarily livestock grazing that reduces the height/density of these non-native annuals enough to allow the native annuals to persist. Since the San Joaquin Desert is already more or less maximally invaded by non-native annuals, livestock grazing (cattle, sheep) is net positive for the native annuals. Where Giant Kangaroo Rat (Dipodomys ingens) populations are intact (e.g. Carrizo Plain), clipping by the rodents has the same effect of livestock grazing in reducing the height/density of the non-native annuals" (CNPS Status Review Forum comment 7 January 2025).

Summary
Of the 118 *S. aphanactis* EOs recorded in California over the past 150 years, 60 are considered recent, and only 29 of those are outside of western Fresno County. The majority of the EOs are located on unprotected private lands or lands of unknown ownership (63 EOs), and only 18 have Occurrence Ranks of Excellent or Good. With the exception of the new EOs in western Fresno and eastern San Benito counties, botanists familiar with this species report small populations at most locations where it is still extant. A majority of the historical EOs have not been seen for over 50 years, and many of those date back to the early 20th century. Based on aerial imagery and information reported to CNPS and the CNDDB, 15 mainland EOs are likely extirpated. In addition, the seven island EOs may no longer be extant, and no iNaturalist observations have been recorded in the Bay Area (where there are eight historical EOs). Due to reported decreases in population numbers from non-native plant competition, we cannot assume its presence in undeveloped areas. In addition, our analysis of the occurrences in Baja does not indicate that it is abundant in that region; therefore, the rank of 2B is not appropriate for this species. Based on the available information, CNPS and the CNDDB propose changing the California Rare Plant Rank of *S. aphanactis* from 2B.2 to 1B.2 in the CNPS Inventory. If knowledge on the distribution, threats, or rarity status of *S. aphanactis* changes in the future, it may be re-evaluated at that time.

Recommended Actions
CNPS: Change *Senecio aphanactis* from CRPR 2B.2 to CRPR 1B.2
CNDDB: Change *Senecio aphanactis* to G2 and retain as S2

Changes that Need to be Made to CNPS Inventory Record

CRPR 1B.2
California Island: Santa Catalina, Santa Cruz, Santa Rosa
Habitat: valley and foothill grassland, chaparral, cismontane woodland, coastal scrub
Microhabitat: clay (often); alkaline (sometimes); serpentine (sometimes); rocky (sometimes); sandy (sometimes)
Microhabitat notes: Often found on heavy clay soils.
Elevation: elevation 15–1020 meters (50–3340 ft)
Notes: May benefit from some types of disturbance, such as fire, that results in open ground or decreased competition from non-native plants.
Threats: Threatened by competition from non-native plants, development, urbanization, inappropriate fire regime, inappropriate grazing regimes, off-road vehicles, military training activities, and trampling by hikers and mountain bikers.
Selected References:
- CNPS Status Review: Proposed change from CRPR 2B.2 to CRPR 1B.2 (2024)
- Original Description: *Pittonia* 1:220 (1888)
- Taxonomic Treatment: *North American Flora* II 10:50-139 (1978)

Current CNPS Inventory Record
Senecio aphanactis Greene
common name: chaparral ragwort
Family: Asteraceae
USDA Plants Symbol: SEAP2
Rank: CRPR 2B.2
Counties: Alameda (ALA), Contra Costa (CCA), Fresno (FRE), Los Angeles (LAX), Merced (MER), Monterey (MNT), Orange (ORA), Riverside (RIV), San Benito (SBT), San Bernardino (SBD), San Diego (SDG), San Francisco (SFO), San Luis Obispo (SLO), San Mateo (SMT), Santa Barbara (SBA), Santa Clara (SCL), Santa Cruz (SCR), Solano (SOL), Tulare (TUL), Ventura (VEN)
States: California; other: Baja California
Quad name (code): Antioch South (3712187), Arroyo Grande NE (3512025), Benicia (3812212), Bickmore Canyon (3612152), Burnett Peak (3512172), Byron Hot Springs (3712176), Camarillo (3411921), Camatta Ranch (3512043), Cambria (3512151), Cerro Colorado (3612068), Chounet Ranch (3612066), Ciervo Mtn. (3612045), Clayton (3712188), Cypress Mountain (3512058), Dana Point (3311746), Davenport (3712212), Del Mar (3211782), El Toro (3311766), Felton (3712211), Fontana (3411714), Glendora (3411727), Imperial Beach (3211751), Jacumba (3211662), Jamul Mountains (3211668), Jolon (3512182), Kreyenhagen Hills (3612013), La Jolla (3211772), La Mesa (3211771), Laguna Seca Ranch (3612077), Las Pulgas Canyon (3311734), Lillis Ranch (3612044), Lompoc (3412064), Lompoc Hills (3412054), Lopez Mtn. (3512035), Mare Island (3812213), Mercey Hot Springs (3612067), Midway (3712165), Mindego Hill (3712232), Monocline Ridge (3612055), Morro Bay North (3512047), Morro Bay South (3512037), National City (3211761), Newark (3712251), Newbury Park (3411828), Newhall (3411845), North Chalone Peak (3612142), Oceanside (3311724), Ortigalita Peak NW (3612088), Otay Mesa (3211658), Panoche (3612057), Panorama Hills (3511926), Pechanga (3311741), Pismo Beach (3512026), Point Conception (3412044), Point Loma (3211762), Port San Luis (3512027), Poway (3211781), Riverside East (3311783), Sacate (3412043), San Bernardino South (3411713), San Clemente (3311745), San Dimas (3411717), San Francisco South (3712264), San Jose East (3712137), San Luis Obispo (3512036), San Mateo (3712253),

Santa Catalina East (3311833), Santa Cruz Island A (3311987), Santa Cruz Island B (3311986), Santa Rosa Island North (3312081), Santa Ynez (3412051), Shedd Canyon (3512054), Success Dam (3611818), Thousand Oaks (3411827), Topo Valley (3612141), Tranquillon Mtn. (3412055), Triunfo Pass (3411818), Tumey Hills (3612056), Tustin (3311767), Wilson Corner (3512044), Woodside (3712243)
General Habitat: chaparral, cismontane woodland, coastal scrub
Microhabitat Details: none
Microhabitat: Alkaline (sometimes)
Elevation: elevation 15–800 meters (50–2625 ft)
Life form: annual herb
Blooms Jan-Apr (May)
Notes: Threatened by development. Rare in LAX, ORA, and RIV counties. Need quads for RIV Co. and SCT Isl. Not seen on SCZ Isl. between 1934 and 1991. See *Pittonia* 1:220 (1888) for original description, and *North American Flora* II 10:50-139 (1978) for taxonomic treatment.

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