Rare Plant Status Review: *Gilia leptantha* subsp. *transversa*
Proposed Addition to California Rare Plant Rank 4.2, G4T2T3 / S2S3
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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
Gilia leptantha Parish subsp. *transversa* A.D. Grant & V.E. Grant is an annual herb in the Polemoniaceae known from the southwestern Mojave Desert region, including the adjacent slopes of the Tehachapi and Transverse Ranges in Los Angeles and San Bernardino counties (Calflora 2024, CCH2 2024, iNaturalist 2024). It is included in *The Jepson Manual* (Patterson 1993) and the *Jepson eFlora* (Porter 2023); the treatment of *Gilia* for *Flora of North America* is not yet published. The species *Gilia leptantha* was first described in 1900 from the San Bernardino Mountains (Parish 1900), and subspecies *transversa* was described later in 1956 (Grant and Grant 1956). The subspecific epithet "transversa" presumably refers to its distribution along the "north slope of the Transverse Ranges" (Grant and Grant 1956).

Gilia leptantha is distinguished from other *Gilia* species by a suite of characters that includes cauline leaves not clasping/expanded at the base, calyx usually glandular hairy or cobwebby, corolla 9–32 mm long, the tube, throat, and lobes of different colors, the tube purple or yellow, the throat usually yellow or white (usually without purple or lavender but sometimes tinged with violet), the lobes pink or lavender, and a style exceeding the fused part of the corolla (the throat) (Grant and Grant 1956, Porter 2023). The species' distribution encompasses the southern Sierra Nevada, Southern Coast Ranges, and Transverse Ranges (Porter 2023, Calflora 2024). As currently circumscribed, *G. leptantha* includes four subspecies: *leptantha*, *pinetorum*, *purpusii*, and *transversa* (Porter 2023). Subspecies *transversa* is distinguished from the other three subspecies by having a corolla tube that is 1–1.5 times the length of the calyx, a cup-shaped corolla throat, and the longest stamen exserted from the throat but having the exserted portion exceeded in length by both the style and the corolla lobes (Porter 2023). In addition, subsp. *transversa* usually has one dominant, erect stem emerging from the basal rosette (Grant and Grant 1956). *Gilia leptantha* subsp. *leptantha* differs from subsp. *transversa* in having a corolla tube that is 2–4 times the length of the calyx and a narrow throat; in addition, it may occur at somewhat higher elevations than subsp. *transversa* (Porter 2023, CCH2 2024). Specimens at elevations intermediate between these two subspecies may sometimes have intermediate corolla tube lengths (Andre 2024 pers. comm.).

Another species that occurs in the Transverse Ranges that is sometimes misidentified as *G. leptantha* subsp. *transversa* is *G. ochroleuca*, specifically subsp. *bizonata* and subsp. *vivida*. The confusion stems from the fact that *Gilia ochroleuca* and subsp. *transversa* both have corollas with very short tubes, long stamens, and a style that exceeds the stamens; the corolla tube in *G. ochroleuca* does not exceed the calyx (Grant and Grant 1956, Porter 2023). *Gilia ochroleuca* differs from *G. leptantha* in having a throat that is yellow proximally and purple distally (Porter 2023). In the *Jepson eFlora* key to *Gilia* taxa (Porter 2023), key break #22 (regarding

pubescence and glands on the calyx) can be a source of confusion for observers, sometimes leading them to *G. leptantha* rather than *G. ochroleuca*. Unlike *G. leptantha* subsp. *transversa*, *G. ochroleuca* subsp. *bizonata* usually has a non-glandular, glabrous or slightly woolly calyx (vs a calyx that is usually glandular in *G. leptantha*). However, in *G. ochroleuca* subsp. *vivida* (which was first described as a subspecies of *G. leptantha*) the calyx can be finely glandular (thus leading people to *G. transversa* at key break #22). Along with differing in throat coloration, the low habit of *G. ochroleuca* subsp. *vivida* which has many branches or stems from the base of the plant differs from the single dominant stem that is usually seen in *G. leptantha* subsp. *transversa* (Grant and Grant 1956).

"*Gilia* can be challenging to identify…. It is important to note pattern and distribution of flower color at the time of collection" (Porter 2023).

Ecology

Gilia leptantha subsp. *transversa* occurs in a number of different vegetation types within and bordering the southwestern end of the Mojave Desert. It is most often found in Joshua tree woodland, pinyon and juniper woodland, and Mojavean desert scrub, and less often in chaparral, and riparian scrub; it rarely occurs in upper montane coniferous forest, a habitat not mentioned in the original protologue nor in subsequent floristic treatments (Grant and Grant 1956, Munz and Keck 1968, Porter 2023, Calflora 2024, CCH2 2024, CNPS 2024, iNaturalist 2024). It is usually found in rocky washes/canyons and on adjacent slopes and ridgelines in topography that can range from flat to steep. The substrate is described as sandy or gravelly, and the plants are most often found on granitic soils, sometimes alluvial, but two observations (record #s 12 and 55) mention limestone, and one mentions metamorphic rock (record #67). In addition, this species was observed post-fire at five locations (record #s 10, 17, 23, 41, 44) (Calflora 2024, CCH2 2024, iNaturalist 2024). Associated species in its most common vegetation types include: *Juniperus californica*, *Yucca brevifolia*, *Pinus monophylla*, *Quercus* spp., *Larrea tridentata*, *Purshia glandulosa*, *Ephedra viridis*, *Ericameria nauseosa*, *Cercocarpus betuloides, Ceanothus* spp., *Eriogonum fasciculatum*, *Salvia* spp., *Mentzelia* spp., *Gilia* spp., *Phacelia* spp., *Eriastrum* spp., *Cryptantha muricata*, *Stipa* spp., *Bromus tectorum*, and *Schismus barbatus* (CCH2 2024). It blooms from April to June (July) (Calflora 2024, CCH2 2024, iNaturalist 2024). Records range in elevation from 2,720–7,480 ft (830–2,280 m) (Calflora 2024, CCH2 2024, iNaturalist 2024).

Distribution and Abundance

Gilia leptantha subsp. *transversa* is a California endemic known from 70 estimated occurrences (EOs) in Los Angeles and San Bernardino counties in the southwestern Mojave Desert region, including the adjacent slopes of the Transverse Ranges (Calflora 2024, CCH2 2024, iNaturalist 2024). Of the 70 EOs, over half (38) are historical (not observed in the past 20 years). None of the EOs have population counts, however 22 provide statements about abundance: four state that the plant is common, one uses the term locally common, nine state that the plant is occasional or scattered, and eight state that the plant is uncommon or scarce. The locations of the 70 EOs are managed/owned by Angeles National Forest (24 EOs), San Bernardino National Forest (8), Bureau of Land Management (3), Joshua Tree National Park (1), California State Lands Commission (3), Los Angeles County Acton Wash Wildlife Sanctuary (1), unknown/Angeles NF shared ownership (1), unknown/San Bernardino NF shared ownership (1), and manager/ownership unknown (28).

In addition to analyzing records determined to *G. leptantha* subsp. *transversa* we also examined 45 CCH2 records that were only identified to *G. leptantha* (no subspecies). These records ranged from Inyo County to San Bernardino County. Based on images or locations, none of those records fit the range or morphology of subsp. *transversa*.

At the bottom of the location spreadsheet are 19 records highlighted in pink that were not included in the distribution analysis. One record (*Pringle* s.n.) has such vague location information that even the county is not known, and so this record could not be georeferenced. Three records from San Bernardino County and one from Los Angeles County did not have enough information to georeference the location. Records from Inyo, Kern, and Ventura counties are out of range for subsp. *transversa* and/or the images indicate that they are misidentified; one of the Kern County specimens from the Tehachapi Mountains was reexamined by its collector and then excluded from the location analysis. Based on images and specimens, three records from pine forest along Hwy 38 in San Bernardino County and another at the top of Granite Mountain in Los Angeles County at elevations above what is cited for subsp. *transversa* are likely subsp. *leptantha* or intermediate with that subspecies. The final six records, all from pine forest in Los Angeles and San Bernardino counties at elevations above what is cited for subsp. *transversa* have duplicate specimens that have been redetermined to *Gilia ochroleuca*.

Status and Threats
Gilia leptantha subsp. *transversa* is endemic to California and has no conservation status. It was last reviewed by NatureServe in 2001 and is currently rated G4T2T3 (rounded to T2). In looking at aerial imagery, the main threat to this plant is habitat displacement due to mining and development, including housing, road construction, agriculture, and energy (power plants, power lines, and solar panels). Eleven of the EOs are possibly or likely extirpated at this time (record #s 2, 6, 18, 46, 47, 54, 59, 61, 65, 67, 69); all but two of these are historical locations.

Summary
Based on the available information, CNPS and CNDDB propose adding *Gilia leptantha* subsp. *transversa* to California Rare Plant Rank 4.2 of the CNPS Inventory. If knowledge on the distribution, threats, or rarity status of *G. leptantha* subsp. *transversa* changes in the future, it may be re-evaluated at that time.

Recommended Actions
CNPS: Add *Gilia leptantha* subsp. *transversa* to CRPR 4.2
CNDDB: Add *Gilia leptantha* subsp. *transversa* to G4T2T3 / S2S3

Draft CNPS Inventory Record
Gilia leptantha Parish subsp. *transversa* A.D. Grant & V.E. Grant
Common name: fine-flower gilia
Family: Polemoniaceae
USDA Plants Symbol: GILET
Synonym(s)/Other Name(s): None
CRPR 4.2
Counties: Los Angeles, San Bernardino
States: California

Quad name (code): ACTON (3411842), APPLE VALLEY SOUTH (3411742), BIG BEAR CITY (3411637), CAJON (3411734), CHILAO FLAT (3411831), FIFTEENMILE VALLEY (3411741), HELENDALE (3411763), HESPERIA (3411743), JOSHUA TREE SOUTH (3411613), JUNIPER HILLS (3411748), LAKE ARROWHEAD (3411732), LITTLEROCK (3411758), LUCERNE VALLEY (3411648), MESCAL CREEK (3411746), MOUNT SAN ANTONIO (3411736), OLD WOMAN SPRINGS (3411646), ONYX PEAK (3411626), PACIFICO MOUNTAIN (3411841), RATTLESNAKE CANYON (3411636), RED BUTTES (3411775), RITTER RIDGE (3411852), SILVERWOOD LAKE (3411733), VALYERMO (3411747), WATERMAN MTN (3411738), YUCCA VALLEY NORTH (3411624)
General Habitat: Joshua tree woodland, pinyon and juniper woodland, Mojavean desert scrub, chaparral, riparian scrub, upper montane coniferous forest (rarely)
Microhabitat Details: Usually found in rocky washes/canyons and on adjacent slopes and ridgelines.
Microhabitat: Sandy, gravelly, rocky, granitic, alluvial (sometimes), carbonate (rarely), metamorphic (rarely)
Elevation: 830–2,280 meters (2,720–7,480 ft)
Life form: annual herb
Blooms: April to June (July)
Threats: Threatened by development, urbanization, agriculture, road construction, and energy development (solar fields, power lines, power plants)
Taxonomy: Distinguished from the other three subspecies of *G. leptantha* by having a corolla tube that is 1–1.5 times the length of the calyx, a cup-shaped corolla throat, and the longest stamen exserted from the throat but having the exserted portion exceeded in length by both the style and the corolla lobes. Sometimes confused with *G. ochroleuca*, which has a short corolla tube and a throat that is yellow proximally and purple distally.
Selected References:
- CNPS Status Review: Proposed addition to CRPR 4.2, G4T2T3 / S2S3 (2024)
- Original Description: *Aliso*: 3: 203–287 (1956)
- Taxonomic Treatment: *Aliso*: 3: 203–287 (1956)

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[CCH2] Consortium of California Herbaria Portal 2. 2024. Data provided by the participants of the Consortium of California Herbaria and the California Phenology Thematic Collections Network (CAP-TCN). Regents of the University of California, Berkeley and Cal Poly, San Luis Obispo. Website http//:www.cch2.org/portal/index.php [accessed September 2024].

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Personal Communications

Andre, James. 2024. Director, Granite Mountains Desert Research Center/Sacramento Mountains Reserve, UC Riverside. Emails regarding specimens of *Gilia leptantha* var. *transversa* and review of draft. Personal communications 2 and 9 October 2024.