

Plant Species Evaluation Form

Collomia larsenii (Gray) Payson

TALUS COLLOMIA

Family: Polemoniaceae
(CNPS 2017)

PLANTS Symbol: COLA8
(USDA 2017)

Calif. Endemic: No
(CNPS 2017)

Synonyms/Other Names: *Collomia larsenii* (A. Gray) Payson was originally described as *Gilia larsenii* A. Gray in 1876. It was later changed to *Collomia debilis* var. *larsenii* (A. Gray) Brand in 1907. It was then given its current name, *Collomia larsenii* (A. Gray) Payson, in 1924, returning it to full species level status (Tropicos 2017).

Identification Issues: Specific identification issues regarding *Collomia larsenii* are unknown. It is a caespitose and perennial member of a largely annual group of plants. Its caespitose stature and perennial life form set this taxon apart from other members of its group (Johnson and Wilken 2017).

Taxonomy:

Unless otherwise cited, the following description is used with permission from the Jepson Herbarium. Jepson Flora Project (eds.) 2017. *Jepson eFlora*, <http://ucjeps.berkeley.edu/eflora/>, accessed May 2017. Copyright © Regents of the University of California.

Species In Genus: 15 species: North America, southern South America. Etymology: (Greek: glue, from wet seed surface) Note: Annual species self-pollinated; perennial herb species generally cross-pollinated.

Genus Description Stem: hairy or glandular. Leaf: alternate, simple, entire to generally pinnate-lobed, linear to ovate [fan-shaped]; basal short-petioled; cauline sessile. Inflorescence: heads or clusters, terminal, or flowers 1--3 in axils. Flower: calyx lobes connected by narrow membrane forming a pitcher-like projection at sinus, enlarging, not rupturing in fruit; corolla salverform to funnel-shaped. Fruit: ovate to elliptic, explosively dehiscent, valves reflexed on dehiscence. Seed: 1(2--3) per chamber, oblong, generally gelatinous when wet, brown. Chromosomes: $2n=16$.

Species Description Habit: Perennial herb, generally caespitose, from slender rhizomes. Stem: generally branched, < 5 cm; internodes congested, glandular-hairy. Leaf: blade < 2 cm, 1--2-pinnate- or -palmate-lobed from elongate, clasping petiole; lobes linear-oblong, narrowed at base, glandular-hairy. Inflorescence: clusters, terminal; flowers 6--9. Flower: calyx 5--9 mm; corolla 10--15 mm, light to deep purple; filaments attached at 1 level, > 3 mm, pollen blue. Seed: 1 per chamber. Ecology: Volcanic talus; Elevation: 2225--3500 m. Bioregional Distribution: CaRH (Lassen, Magee peaks, Little Mount Hoffman); Distribution Outside California: to Washington. Flowering Time: Jun--Sep Synonyms: *Collomia debilis* (S. Watson) Greene var. *larsenii* (A. Gray) Brand Unabridged Note: Distinct from *Collomia debilis* of northern Washington, Rocky Mountains. eFlora Treatment Author: Leigh A. Johnson & Dieter H. Wilken.

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Status:

Note: Federally recognized Endangered, Threatened, Proposed, or Candidate species under the Endangered Species Act are omitted as they do not meet the definition of a Species of Conservation Concern (FSH 1909.12 § 12.52).

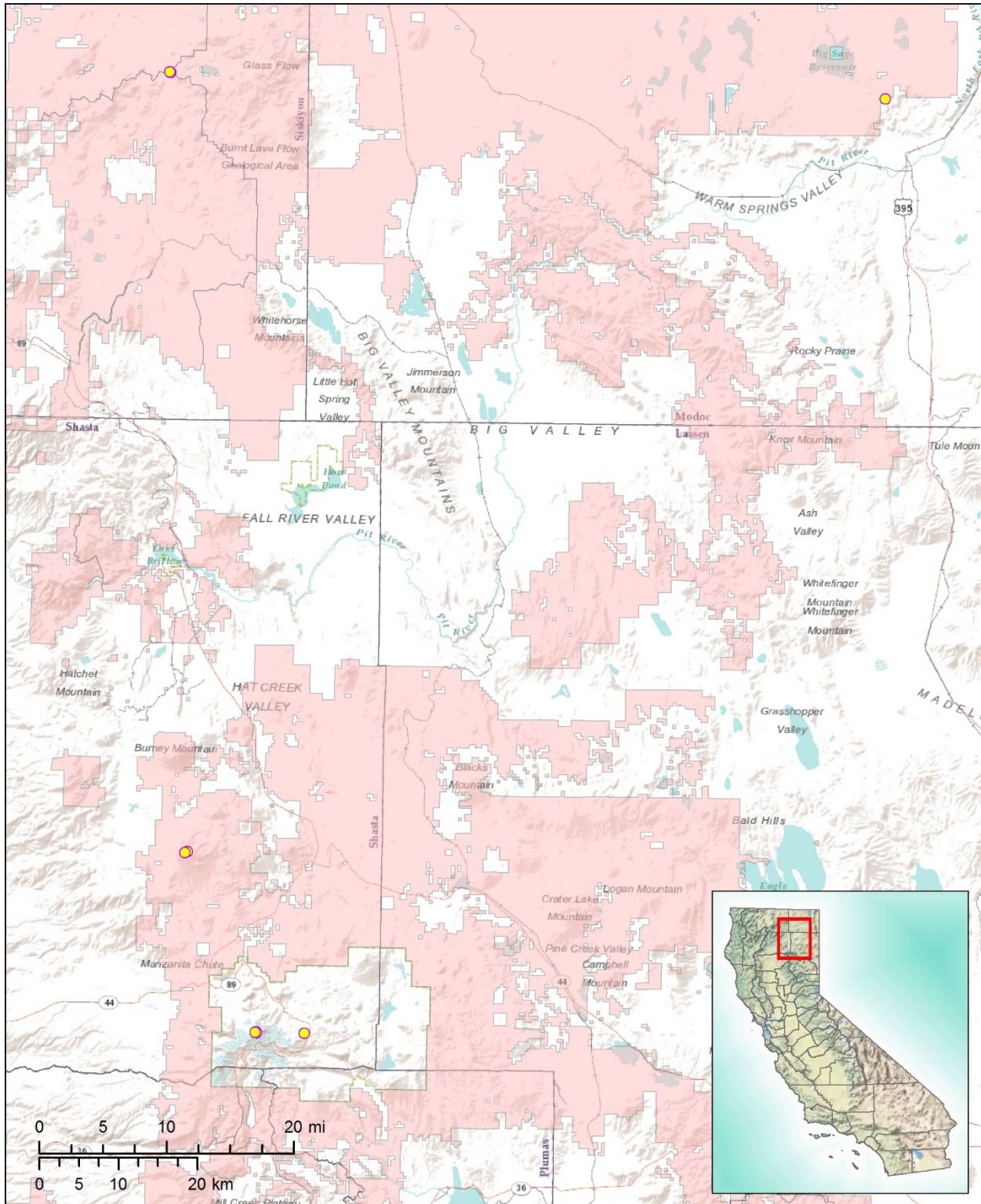
State Listing	G-rank	S-rank	CRPR	R5 FSS	NFP SM	CA BLM
CA: Not listed NV: Not listed OR: Not listed	G4	CA: S2 NV: Not listed OR: S4	2B.2	Sensitive	Not listed	Not listed

SWAP: Not listed	NNHP: Not listed	NNPS: Not listed	ORBIC: 4: Watch	OCS: Not listed	IUCN: Not listed
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Expanded abbreviations and citations: State Listing=California Endangered Species Act Listing (CDFW 2017b), Nevada Division of Forestry Fully Protected Plant Species (NAC 527) (NDF 2012), Oregon Department of Agriculture Listed Plants (ODA 2014); G-rank=Global Conservation Status (CDFW 2017a; NatureServe 2017); S-rank=Subnational (state or province-level) Conservation Status (CDFW 2017a; NatureServe 2017; NNHP 2017; ORBIC 2016); CRPR=California Rare Plant Rank (CNPS 2017); R5 FSS=USDA Forest Service Region 5 Regional Forester Sensitive Plant Species List (USDA 2013); NFP SM=Forest Service and Bureau of Land Management Northwest Forest Plan Survey and Manage Species (USDA 2001); CA BLM=California Bureau of Land Management Designated Sensitive Species (BLM 2010); SWAP=California State Wildlife Action Plan Status (CDFW 2015); NNHP=Nevada Natural Heritage Program Status (NNHP 2017); NNPS=Nevada Native Plant Society Status (NNHP 2017); ORBIC=Oregon Biological Information Center Status (ORBIC 2016); OCS=Oregon Conservation Strategy Species (ODFW 2016); IUCN=International Union for Conservation of Nature Red List Status (IUCN 2017).

Distribution: *Collomia larsenii* occurs in Washington, Oregon, and California (CNPS 2017). Plants found in California are restricted to Shasta, Siskiyou, and Modoc counties. One of the five (20%) California element occurrences (EO) are found within Lassen National Forest. Two occurrences (40%) are found within Lassen Volcanic National Park, one of which is within five miles of the Lassen NF. One of five (20%) EO's is within five miles of the Shasta-Trinity NF and is within five miles of the Modoc NF. An additional occurrence (20%) is within five miles of the Modoc NF. In total, two EO's (40%) are outside Forest Service lands and are within five miles of FS boundaries (CNDDDB 2017; Calflora 2017).

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Basemap Sources: Main map: Esri, DeLorme, USGS, NOAA, NPS. California inset map: © 2013 National Geographic Society, i-cubed.

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Locations within California:

(Note: Record numbers indicate sites that contain an individual, population, or groups of populations located within ¼ mile of each other (per the California Natural Diversity Database (CNDDDB) definition of Element Occurrences in California). Official Element Occurrence (EO) numbers for plants in California are determined solely by the CNDDDB and are included within the Reference (Source) column for CNDDDB data. Duplicate records from the same site are given the same record number and included in red. The Population Info column includes total number of individuals and total number and size of populations/sub-populations when provided. Elevations in meters from source were converted to feet. If not provided in original source, Land Manager information was obtained using the California Protected Areas Database (CPAD 2016) and Quad information was obtained using 24K Quads, SDE Feature Class (CDFG 2013). All other information is directly from the Reference (Source) column unless additional citation is given.)

Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
1	LASSEN PEAK, SW OF SUMMIT, LASSEN VOLCANIC NATIONAL PARK.	Shasta	Lassen Peak (4012145)	CNDDDB, May 2017 (EO 1)	12-Jul-1987	TYPE LOCALITY. 50 PLANTS SEEN IN 1987. RARE ASSOCIATES: SMELOWSKIA OVALIS VAR. CONGESTA AND DRABA AUREOLA.	TRAMPLING BY HIKERS THREATENS.	Lassen Volcanic NP	10000
1	Summit area of Lassen Peak	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (RSA115247)	30-Aug-1952			Lassen Volcanic NP	10302
1	S slope of peak Lassen Volcanic National Park, Lassen Peak	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (JEPS3307)	30-Aug-1952			Lassen Volcanic NP	10098
1	Lassen Peak, near summit along trail	Shasta	Lassen Peak (4012145)	Calflora, May 2017 (gr12401)	10-Aug-1990	1+ individuals		Lassen Volcanic NP	10269
1	Summit area of Lassen Peak	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (GH385083)	6-Aug-1953			Lassen Volcanic NP	

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Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
1	Summit area of Lassen Peak	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (GH385084)	30-Aug-1952			Lassen Volcanic NP	
1	Lassen Volcanic National Park. Summit area of Lassen Peak	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (CAS402881)	6-Aug-1953			Lassen Volcanic NP	9400
1	Lassen Volcanic National Park, along the trail near the summit of Lassen Peak	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (CHSC45345)	14-Aug-1988			Lassen Volcanic NP	10322
1	Lassen Volcanic National Park. Summit area of Lassen Peak	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (DS383516)	6-Aug-1953			Lassen Volcanic NP	9400
1	trail to Lassen Peak; Lassen National Park	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (JEPS76158)	26-Jul-1977			Lassen Volcanic NP	10000
1	Mt. Lassen	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (JEPS8927)	17-Jul-1900			Lassen Volcanic NP	
1	S face of peak Lassen Volcanic National Park, Lassen Peak	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (JEPS8313)	6-Aug-1953			Lassen Volcanic NP	9400

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Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
1	summit area Lassen Volcanic National Park, Lassen Peak (S slope)	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (UC1061694)	30-Aug-1952			Lassen Volcanic NP	10299
1	summit, Sierra v<a?>l. La<?>sen's Peak; Lapen's(?) Peak, Sierra Co.	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (UC333667)	30-Sep-1874			Lassen Volcanic NP	10443
1	Lassen Peak -- Lassen Volcanic NP	Shasta	Lassen Peak (4012145)	Calflora, May 2017 (wb1194-918)	31-Aug-2013	1+ individuals		Lassen Volcanic NP	10341
1	near summit along trail Cascade Mountains, Lassen Peak 7 1/2' USGS Quadrangle	Shasta	Reading Peak (4012144)	CCH, Jan 2017 (JEPS87034)	10-Aug-1990			Lassen Volcanic NP	10299
1	Lassen Volcanic National Park; summit area of Lassen Peak, S of trail	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (RSA113843)	6-Aug-1953			Lassen Volcanic NP	9403
1	summit area Lassen Volcanic National Park, Lassen Peak (S of trail)	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (UC1036150)	6-Aug-1953			Lassen Volcanic NP	9400
1	summit area Lassen Volcanic National Park, Lassen Peak (S slope)	Shasta	Lassen Peak (4012145)	CCH, Jan 2017 (UC1036235)	27-Aug-1953			Lassen Volcanic NP	9400

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Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
1	S face of Mount Lassen	Tehama	Lassen Peak (4012145)	CCH, Jan 2017 (RSA304660)	14-Jul-1976			Lassen Volcanic NP	9501
2	W SLOPE OF LITTLE MT. HOFFMAN, ABOUT 1.5 MILES NE OF LITTLE GLASS MOUNTAIN SUMMIT, SHASTA NATIONAL FOREST.	Siskiyou	Little Glass Mtn. (4112156)	CNDDDB, May 2017 (EO 2)	20-Jul-1993	50-100 PLANTS OBSERVED IN 1980 AND 1981. ABOUT 30 PLANTS OBSERVED IN 1993.	ROAD MAINTENANCE AND PEDESTRIAN TRAFFIC. PLANTS ONLY FOUND IN UNDISTURBED AREAS.	Shasta-Trinity NF	7250
2	W SLOPE OF LITTLE MT. HOFFMAN, APPROX 100 M W OF LOOKOUT, between rd and lookout.	Siskiyou	Little Glass Mtn. (4112156)	NRIS, Apr 2017 (0514_CO LA8_61_001)	20-Jul-1993	individuals		Shasta-Trinity NF	
2	Between loop road of lookout and the road to the lookout, SW side of mtn.; 0	Shasta	Little Glass Mtn. (4112156)	CCH, Jan 2017 (SEINET3860940)	27-Jul-2005			Shasta-Trinity NF	7208
2	Shasta-Trinity NF	Siskiyou	Little Glass Mtn. (4112156)	NRIS, Dec 2016 (050900E_CO LA8_K NF2)	20-Jul-1993	30 individuals		Shasta-Trinity NF	

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Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
2	Shasta-Trinity NF	Siskiyou	Little Glass Mtn. (4112156)	NRIS, Dec 2016 (050900E_COLA8_K_NF1)	10-Aug-1980	30 individuals		Shasta-Trinity NF	
2	Little Mount Hoffman, 2 miles W from Medicine Lake	Siskiyou	Little Glass Mtn. (4112156)	CCH, Jan 2017 (CAS781531)	26-Jun-1987			Shasta-Trinity NF	7251
2	W side of Little Mt. Hoffman, between road and lookout	Siskiyou	Little Glass Mtn. (4112156)	CCH, Jan 2017 (CHSC30234)	18-Aug-1980			Shasta-Trinity NF	7300
2	Little Mount Hoffman, 2 miles W from Medicine Lake	Siskiyou	Little Glass Mtn. (4112156)	CCH, Jan 2017 (JEPS100721)	26-Jun-1987			Shasta-Trinity NF	7251
2	Little Mount Hoffman, 2 miles W from Medicine Lake	Siskiyou	Little Glass Mtn. (4112156)	Calflora, May 2017 (gr13626)	26-Jun-1987	1+ individuals		Shasta-Trinity NF	5735

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Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
3	NE SLOPE OF MAGEE PEAK, ABOUT 1 MILE SW OF MAGEE LAKE, THOUSAND LAKES WILDERNESS, LASSEN NATIONAL FOREST.	Shasta	Thousand Lakes Valley (4012165)	CNDDDB, May 2017 (EO 3)	14-Sep-1993	WESTERN COLONY: ABOUT 100 PLANTS OBSERVED IN 1974. EASTERN COLONY: ABOUT 100 PLANTS OBSERVED IN 1991 AND 1993. AREA IS IN WILDERNESS AREA AND NOT NEAR TRAIL.		Lassen NF	8200
3	Lassen NF	Shasta	Thousand Lakes Valley (4012165)	NRIS, Feb 2017 (050653-COLA8-001)	4-Sep-1993	individuals		Lassen NF	
3	Lassen NF	Shasta	Thousand Lakes Valley (4012165)	NRIS, Feb 2017 (050653-COLA8-001)	7-Oct-1991	individuals		Lassen NF	
3	vicinity Magee Peak (N slope of ridge); Lassen National Forest, Thousand Lakes Wilderness; NE1/4	Shasta	Thousand Lakes Valley (4012165)	CCH, Jan 2017 (UC1540118)	31-Jul-1974			Lassen NF	8241

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Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
3	Lassen National Forest, Thousand Lakes Wilderness, McGee Peak and vicinity	Shasta	Miller Mtn. (4012167)	CCH, Jan 2017 (UC173667 6)	26-Jun-1975			Lassen NF	8241
3	Lassen National Forest, Thousand Lakes Wilderness, McGee Peak and vicinity	Shasta	Miller Mtn. (4012167)	Calflora, May 2017 (xr168930)	26-Jun-1974	1+ individuals		Lassen NF	4692
4	Lassen National Park	Shasta	Reading Peak (4012144)	Calflora, May 2017 (ce340)	1-Jan-1996	1+ individuals		Lassen Volcanic NP	6969
5	Modoc NF from 2007 MDF	Modoc	Mahogany Ridge (4112055)	Calflora, May 2017 (ce913)	17-Mar-2014	1+ individuals		Modoc NF	4662

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Distribution on National Forest System (NFS) lands:

(Please see Reference column of Locations table above for references pertaining to Record Numbers indicated on NFS lands.)

National Forest System (NFS) lands	Record #s (from Locations table above)	CNDDDB EOs	Non-CNDDDB Records	Recent (seen in past 20 yrs.)	Historic (not seen in past 20 yrs.)	Most Recent Obs.	EOs/ Recs. (5 mile buffer)	Total Records on NFS lands
Angeles:	-	-	-	-	-	-	-	0
Cleveland:	-	-	-	-	-	-	-	0
Eldorado:	-	-	-	-	-	-	-	0
Inyo:	-	-	-	-	-	-	-	0
Klamath:	-	-	-	-	-	-	-	0
Lake Tahoe Basin MU:	-	-	-	-	-	-	-	0
Lassen:	3	1	-	-	1	14-Sep-93	1	1
Los Padres:	-	-	-	-	-	-	-	0
Mendocino:	-	-	-	-	-	-	-	0
Modoc:	5	-	1	1	-	17-Mar-14	1	1
Plumas:	-	-	-	-	-	-	-	0
San Bernardino:	-	-	-	-	-	-	-	0
Sequoia:	-	-	-	-	-	-	-	0
Shasta-Trinity:	2	1	-	1	-	27-Jul-05	-	1
Sierra:	-	-	-	-	-	-	-	0
Six Rivers:	-	-	-	-	-	-	-	0
Stanislaus:	-	-	-	-	-	-	-	0
Tahoe:	-	-	-	-	-	-	-	0
Totals:	N/A	2	1	2	1	N/A	2	3

Demographic and Population Trends: Roughly 380 plants have been observed among all five element occurrences since 1974, amounting to an average of 76 plants per occurrence. Reports indicate that 50 plants were observed at the type locality (EO 1) in 1987. Around 50-100 plants were observed at occurrence two (EO 2) on Little Mount Hoffman in 1980 and 1981. Only 30 plants were observed here in 1993. In July 2016 this population was damaged by a vehicle driving down the talus slope from the lookout, through the collomia occurrence. It's not known how many collomia plants were killed, because walking across the loose talus to census the

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population would likely have caused more damage to the plants (J. Kierstead pers. comm. 2021). Element occurrence three (EO #3) had 100 plants in 1974, and also 100 plants in 1991 and 1993. Element occurrences four and five (EO 4 and EO 5) had 1+ individuals at the time the elements were documented. (CNDDDB 2017; Calflora 2017).

Life History: *Collomia larsenii* is an annual flowering plant that usually blooms from July through September, and has been reported to bloom as late as October (CNPS 2017). Information on the specific aspects of *Collomia larsenii* and its pollination biology, reproduction, interactions, and general ecology is limited. Biosystematic work on the group has yielded insights on *Collomia* relatives and their unique pollen ultrastructure and seed characteristics (mucilaginous seeds). Interestingly, *Collomia grandiflora*, produces both cleistogamous and chasmogamous flowers (Sanders et al. 1990; Johnson and Wilken 2017). It is unknown if this particular trait occurs in *C. larsenii*. Insights on the ecology and interactions exhibited by *Collomia* taxa are limited; a potentially fruitful line of inquiry given the considerable degree of floral variation and apparent specialization in the Polemoniaceae (Sanders et al. 1990; Goodwillie 1999; Wright 1943; Patterson and Rosatti 2017).

Diversity: The genus *Collomia* is a group of 15 species, 14 of which have a North American distribution. A single disjunct taxon is endemic to southwestern South America and is considered a product of long-distance dispersal (Green 2010). *Collomia* is a member of the Polemoniaceae, a family that has long been the focus of biosystematic inquiry. This diverse family has many examples of suspected reticulation events, homoplasy, and polyploid speciation (allopolyploids) (Porter 1997, Green 2010). *Collomia* is monophyletic and represents a clade that is sister to the monophyletic genus *Navarretia*. There are annual and perennial members of *Collomia*. The perennial taxa, defined by section *Collomiastrum*, are a monophyletic group that is nested within the genus. Most species of *Collomia* develop seeds that produce a mucilage. Members of the perennial section *Collomiastrum* have a diminished or absent ability to produce mucilaginous seeds. *Collomia larsenii* is a member of the section *Collomiastrum* and entirely lacks the capacity to produce mucilaginous seeds (Green 2010).

Habitat: *Collomia larsenii* grows in volcanic talus substrate among alpine boulder and rock fields. It is also found in the same substrate among closed cone, subalpine, and upper montane coniferous forests (CNPS 2017). Records indicate that within California, *C. larsenii* grows alongside *Draba aureola*, *Senecio fremontii*, *Smelowskia ovalis*, *Ipomopsis congesta*, *Penstemon davidsonii*, *Phacelia frigida*, *Monardella odoratissima*, *Streptanthus tortuosus*, *Penstemon deustus*, *Holodiscus microphyllus*, *Elymus elymoides*, *Saxifraga tolmiei*, *Ivesia gordonii*, *Oxyria digyna*, *Chaenactis nevadensis*, and *Hulsea nana* (CCH 2017; CNDDDB 2017). Outside of California, records indicate that *C. larsenii* grows with *Phacelia hastata*, *Carex breweri*, *Eriogonum pyrolifolium*, *Eriogonum umbellatum*, *Anemone drummondii*, *Lupinus lyallii*, *Hydrophyllum capitatum*, *Sitanion hystrix*, and *Festuca ovina* (CPNWH 2017).

Habitat Status or Trend: *Collomia larsenii* is represented by five element occurrences within California. Two of the five occurrences indicate disturbance activity, both of which indicate that pedestrian traffic or trampling is a threat at their respective locations (CNDDDB 2017). The Little Mount Hoffman occurrence was damaged by off road vehicle traffic, as described above. The

Shasta-Trinity NF, which had been using a temporary fence each year to deter foot and vehicle traffic at the site, has completed the necessary environmental analysis in 2018 to construct a permanent fence to protect the site, and is seeking funding in 2021 for the project via grant funds from the State of California Off-Highway Motor Vehicle Recreation Division (<https://www.fs.usda.gov/detail/stnf/news-events/?cid=FSEPRD885578>) (J. Kierstead pers. comm. 2021).

Capacity for the Species to Disperse: Most *Collomia* taxa have seeds that produce a mucilage upon exposure to moisture. This mucilage may inhibit dispersal by adhering seeds to soil particles, bolstering a more localized distribution. Mucilage production may also explain the disjunct patterns of certain species within *Collomia*, as long distance dispersal is often mediated by epizoochory and the ability for propagules to adhere to animal dispersers (Hsiao and Chuang 1981). *Collomia larsenii* is one such member of *Collomia* that does not produce a mucilage; a possible advantage given its association with talus deposits. Adherence to larger rocks could prevent seedlings from establishing in finer substrate (Green 2010).

Threats: California populations of *C. larsenii* are threatened by foot traffic (CNDDDB 2017; CNPS 2017) and by off road vehicle traffic at the Little Mount Hoffman site (J. Kierstead pers. comm. 2021). Climate change may impact this species if there is a reduction in suitable habitat at subalpine and alpine locations (Sanger et al. pers. comm. 2017).

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Persons Contacted:

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Author(s) and Date:

Steven Serkanic, Assistant Rare Plant Botanist, California Native Plant Society, (916) 447-2677 x218, sserkanic@cnps.org.

Collomia larsenii (Gray) Payson

Aaron E. Sims, Rare Plant Botanist, California Native Plant Society, (916) 324-3816, asims@cnps.org. November 28, 2017; revised November 17, 2021.

Reviewer(s) and Date:

David Magney, Rare Plant Program Manager, California Native Plant Society, (916) 447-2677 ext. 205, dmagney@cnps.org; November 28, 2017.

Julie Ann Kierstead, USDA Forest Service, Region 5 Ecosystem Planning, October 20, 2021.

Formatting: Form is set up as 508 compliant. Please use the “styles” if further formatting is necessary.

Purpose: This is to maintain the best available science on a species that could be used by the Forest Service in a variety of functions. Specifically, there would be additional steps and evaluations to determine whether or not this species would be considered a Species of Conservation Concern under the 2012 Planning Rule or a Sensitive Species under the 1982 Planning Rule.

Additional Considerations at the Forest Level: Habitat amount and juxtaposition of both the species and habitat locations.