

# Plant Species Evaluation Form

## *Nemophila breviflora* Gray

### GREAT BASIN NEMOPHILA

**Family:** Hydrophyllaceae  
(CNPS 2018)

**PLANTS Symbol:** NEBR  
(USDA 2018)

**Calif. Endemic:** No  
(CNPS 2018)

**Synonyms/Other Names:** *Viticella breviflora* (A. Gray) J.F. Macbr. (Tropicos 2018).

**Identification Issues:** Discrete characters are used to distinguish *N. breviflora* from sister taxa (Patterson and Halse 2018). May be confused with *N. parviflora* because of short corolla lobes (Constance 1941).

### Taxonomy:

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Species In Genus: 11 species: southeastern United States, western North America. Etymology: (Greek: woodland-loving).

Genus Description Habit: Annual. Stem: simple to branched, prostrate to erect, fleshy, brittle, angled or winged, glabrous to generally bristly (prickly). Leaf: cauline, lower generally opposite, upper opposite or alternate, generally reduced; petiole generally bristly-ciliate; blade pinnate-toothed or -lobed, generally bristly. Inflorescence: flowers 1 in leaf axils or opposite leaves; pedicels longer in fruit, recurved. Flower: calyx bell-shaped to rotate, sinuses generally with spreading or reflexed appendages; corolla bell-shaped to rotate, white, blue, or purple, spotted or marked or not; stamens included; ovary chamber 1, style 1, generally 1/3--1/2 forked. Fruit: generally 2--7 mm wide, spheric to ovoid, hairy, generally enclosed by calyx. Seed: ovoid, smooth, wrinkled or pitted, with a conic, colorless appendage at 1 end.

Species Description Stem: prickles minute, reflexed. Leaf: lower alternate, blade 7--30 mm, 15--40 mm wide, lobes 3--6, acute, generally entire. Inflorescence: pedicels < 5 mm, < 15 mm in fruit. Flower: calyx lobes 3--5 mm, stiff-ciliate, appendages 1--2 mm in fruit; corolla 2 mm, 1--4 mm wide, bell-shaped, white or +- purple, tube > filaments; anthers << 1 mm; style < 1 mm, tip lobed. Seed: generally 1, +- red, smooth but regularly deep-pitted in rows. Chromosomes: n=9. eFlora Treatment Author: Robert Patterson & Richard R. Halse.

### 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	G5	CA: S3 NV: Not listed OR: Not listed	2B.3	Not listed	Not listed	Not listed

SWAP: Not listed	NNHP: Not listed	NNPS: Not listed	ORBIC: Not listed	OCS: Not listed	IUCN: Not listed
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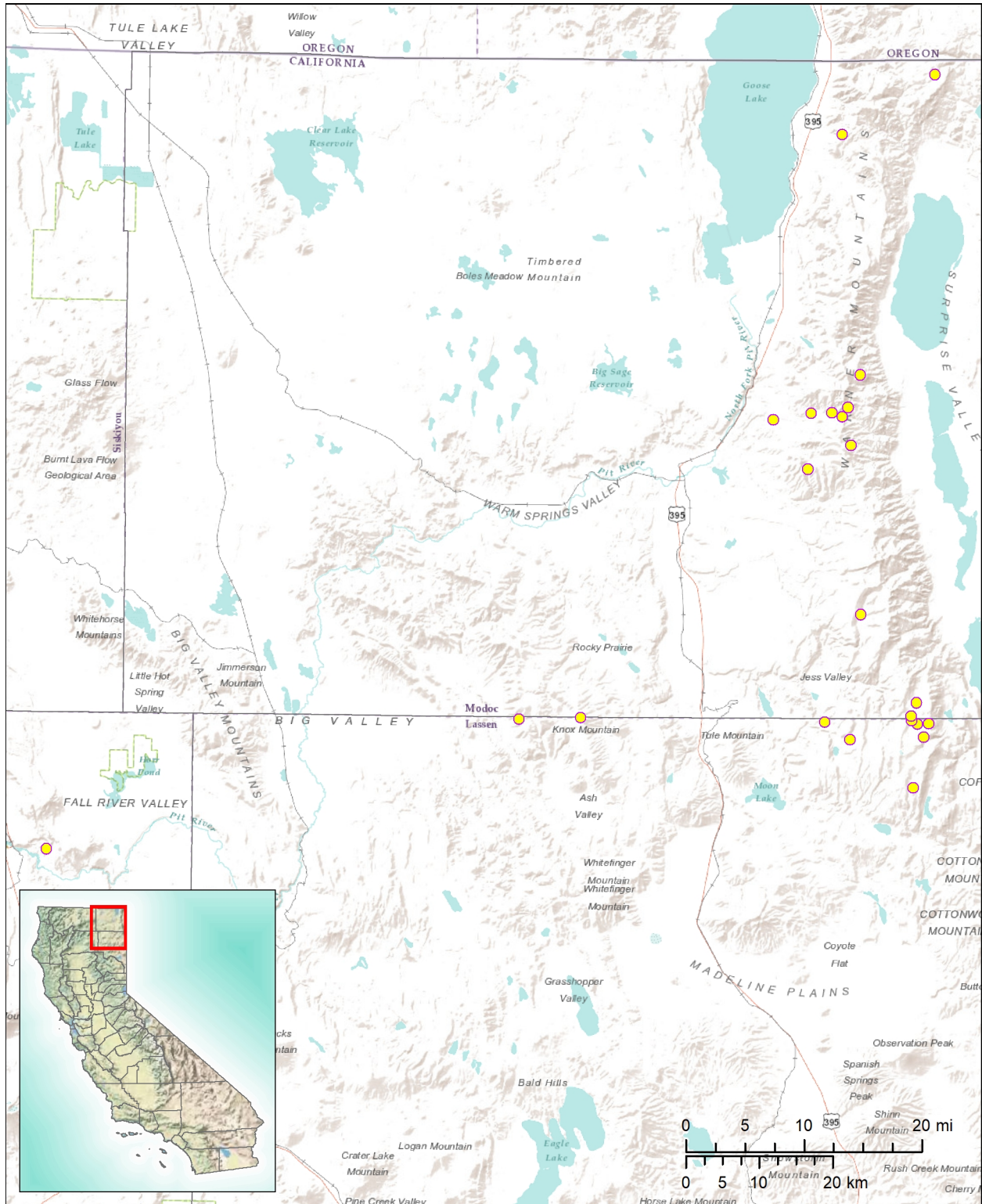
Expanded abbreviations and citations: State Listing=California Endangered Species Act Listing (CDFW 2018b), Nevada Division of Forestry Fully Protected Plant Species (NAC 527) (NDF 2012), Oregon Department of Agriculture Listed Plants (ODA 2014); G-rank=Global Conservation Status (CDFW 2018a; NatureServe 2018); S-rank=Subnational (state or province-level) Conservation Status (CDFW 2018a; NatureServe 2018; NNHP 2017; ORBIC 2016); CRPR=California Rare Plant Rank (CNPS 2018); 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

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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:** Western North America, from California to Colorado, Wyoming, Montana, Alberta, and British Columbia (NatureServe 2018; Patterson and Halse 2018). California occurrences are restricted to the northeast in Lassen, Modoc, and Shasta counties within the Modoc Plateau (MP) bioregion. Most (18/23; ~78%) California occurrences are on NFS lands within Modoc NF (17/18; ~94%) and Lassen NF (1/18; ~6%) (CNDDB 2017; NRIS 2017; Patterson and Halse 2018).

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**Sources:** *Distribution:* CNDDDB 2017, NRIS 2017. *Layers:* USDA Forest Service, Pacific Southwest National Forests: CPAD 2016. California counties: CDF 2009. *Basemaps:* California inset map: © 2013 National Geographic Society, i-cubed (Esri 2017a). Main map: Esri, DeLorme, USGS, NPS (Esri 2012) and Esri, USGS, NOAA (Esri 2017b).

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**Locations within California:**

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 2017) definition of Element Occurrences (EOs) in California. Official 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 provided in meters from source have been 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) unless additional citation is given.

Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
1	1.2 MILES NORTH OF LAKE BRITTON.	Shasta	Dana (4112115)	CNDDDB, May 2017 (EO 8)	12-Jun-1991	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1991 TAYLOR COLLECTION. NEEDS FIELDWORK.		Lassen NF	2900
2	1.5 MILES NORTHWEST OF BOOT LAKE.	Lassen	Boot Lake (4112012)	CNDDDB, May 2017 (EO 1)	7-Jul-1994	UNKNOWN NUMBER OF PLANTS OBSERVED IN 1994. NEEDS FIELDWORK.		BLM	7900
3	PARSNIP SPRINGS.	Lassen	Jess Valley (4112023)	CNDDDB, May 2017 (EO 2)	1998	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1998 NOTE FROM CLIFTON. NEEDS FIELDWORK.		Modoc NF	
4	APPROXIMATELY 0.4 AIR MILE NNW OF LOST LAKE, MODOC NATIONAL FOREST.	Lassen	Emerson Peak (4112022)	CNDDDB, May 2017 (EO 11)	19-Jul-2010	500+ PLANTS OBSERVED IN 2010.	LOGGING, GRAZING. POPULATION LIKELY SAFE FROM LOGGING DUE TO OPEN HABITAT.	Modoc NF	7738
4	APPROXIMATELY 0.1 AIR MILE NW OF CAMP ONE SPRING, APPROXIMATELY 0.7 AIR MILE NNW OF LOST LAKE, MODOC NF.	Lassen	Emerson Peak (4112022)	CNDDDB, May 2017 (EO 12)	19-Jul-2010	THOUSANDS OF PLANTS OBSERVED IN 2010.	GRAZING.	Modoc NF	7970

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Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
4	MDF-NEBR-005; Emerson Peak, CA	Lassen	Emerson Peak (4112022)	NRIS, Dec 2016 (050900E_ NEBR005_ 53)	19-Jul-2010	1000 individuals	Evidence of grazing pressure.	Modoc NF	
4	MDF-NEBR-006; Emerson Peak, CA T 38 N, R 16 E, Sec. 15, SE of NW. Head S. on 395 towards Likely. Proceed on Forest Rd. 54 toward Patterson G.S. Continue on 64 and take a right on rd. 38N18A. Park at Camp One Spring and walk 0.25 mi. on bearing 187	Lassen	Emerson Peak (4112022)	NRIS, Dec 2016 (050900E_ NEBR006_ 53)	19-Jul-2010	100 individuals	No sign of cattle.	Modoc NF	
5	AT THE SOUTH END OF FOREST SERVICE ROAD 38N25B, ABOUT 0.8 AIR MILE SOUTH OF MIDDLE FORK SPRING, MODOC NATIONAL FOREST.	Lassen	Emerson Peak (4112022)	CNDDB, May 2017 (EO 14)	23-Jul-2010	THOUSANDS OF PLANTS OBSERVED IN 2010.		Modoc NF	7680
5	MDF-NEBR-009; Emerson Peak, CA T 38 N, R 16 E, Sec. 9, NE Take Forest Rd. 64 E to Homestead Flat. Site is just S of Homestead Flat.	Lassen	Emerson Peak (4112022)	NRIS, Dec 2016 (050900E_ NEBR009_ 53)	22-Jul-2010	1000 individuals	Some cattle trampling is observed, but is limited in effect.	Modoc NF	

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Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
6	AT THE SOUTH END OF FOREST SERVICE ROAD 39N01B, EAST SIDE OF BLACK CONE, MODOC NATIONAL FOREST.	Lassen	Emerson Peak (4112022)	CNDDB, May 2017 (EO 13)	29-Jul-2010	"LOTS" OF PLANTS OBSERVED IN 2010; POPULATION THRIVING IN UNDERGROWTH, DISTRIBUTED THROUGHOUT SITE.		Modoc NF	7715
6	MDF-NEBR-007; Emerson Peak, CA T 36 N, R 16 E, Sec. 10, SE of NE. From Patterson G.S., drive 3.7 mi. (+/-) to rd. 39N01B and turn right. Continue on rd. to end, about 0.6 mi., and walk E ~100 ft. Plants are distributed in aspen/corn lily understory.	Lassen	Emerson Peak (4112022)	NRIS, Dec 2016 (050900E_NEBR007_53)	29-Jul-2010	individuals	Logging, grazing, recreation	Modoc NF	
7	HARVEY CREEK.	Lassen   Modoc	Jess Valley (4112023)	CNDDB, May 2017 (EO 3)	1998	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1998 NOTE FROM CLIFTON. NEEDS FIELDWORK.		Modoc NF	
8	SOUTH FORK EAST CREEK ALONG FOREST SERVICE ROAD 38N25, JUST SOUTH OF HOMESTEAD FLAT.	Lassen   Modoc	Emerson Peak (4112022)	CNDDB, May 2017 (EO 15)	28-Jul-2010	THOUSANDS OF PLANTS OBSERVED IN 2010.	GRAZING, RECREATION. WEEDS MAY BE A THREAT IN THE LONG TERM.	Modoc NF	7350

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Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
9	SOUTH SIDE OF AMBROSE CANYON, ABOUT 0.9 AIR MILE WNW OF COTTONWOOD SPRING, MODOC NATIONAL FOREST.	Lassen	Ambrose Valley (4112027)	CNDDDB, May 2017 (EO 18)	20-Jul-2007	UNKNOWN NUMBER OF PLANTS OBSERVED IN 2007.	AREA HAS BEEN SELECTIVELY LOGGED; MORE LOGGING PLANNED.	Modoc NF	5620
10	NW END OF THE SUMMIT OF KNOX MOUNTAIN, MODOC NATIONAL FOREST.	Lassen	Knox Mountain (4112026)	CNDDDB, May 2017 (EO 17)	29-Jun-2010	ABOUT 50 PLANTS OBSERVED IN 2010.	FUTURE LOGGING ALTHOUGH SITE MAY BE SAFE DUE TO INACCESSIBILITY.	Modoc NF	7020
10	MDF-NEBR-008; Knox Mountain quad; T 39 N, R 11 E, Sec. 34, NW of NW. Head South on Hwy. 139 towards Adin from Alturas S.O. Take a left on Forest Rd. 22 and proceed to Sweagert Flat. Take a left on rd. 39N50 for approx. 4.0 mi. and park. Walk directly	Lassen	Knox Mountain (4112026)	NRIS, Dec 2016 (050900E_NEBR008_54)	29-Jun-2010	1 individuals	Some cow sign in area (old pats).	Modoc NF	
11	MDF-NEBR-004; Emerson Peak, CA T 38 N, R 16 E, Sec. 4 and 9. 38N25; South Fork East Creek.	Modoc	Emerson Peak (4112022)	NRIS, Dec 2016 (050900E_NEBR004_53)	19-Jul-2010	2000 individuals	Less disturbance evident in shaded areas where <i>N. breviflora</i> tends to occur.	Modoc NF	

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Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
12	TRIBUTARY OF EAST CREEK, NE END OF HOMESTEAD FLAT, MODOC NATIONAL FOREST.	Modoc	Emerson Peak (4112022)	CNDDDB, May 2017 (EO 16)	15-Jul-2010	ONLY 1 PLANT VERIFIED AS NEMOPHILA BREVIFOLIA BUT ANGLIN IS FAIRLY CERTAIN THERE ARE MORE INDIVIDUALS HERE INTERMIXED WITH A MORE COMMON SPECIES OF NEMOPHILA. ADDITIONAL FIELDWORK NEEDED TO DETERMINE FULL EXTENT OF POPULATION.	GRAZING.	Modoc NF	7345
12	MDF-NEBR-003; Emerson Peak, CA T 39 N, R 16 E, Sec. 33, SE of NE Take 395S to Likely; 64E to junction with 39N11; N on 39N11 less than 0.25 mi. to fork; make right at fork and follow rd. until it meets creek. Then follow creek E ~0.33 mi.	Modoc	Emerson Peak (4112022)	NRIS, Dec 2016 (050900E_NEBR003_53)	15-Jul-2010	1 individuals	Some grazing disturbance but not too bad. Evident overgrazing 0.5 mi. downstream.	Modoc NF	
13	VICINITY OF MILL CREEK, NORTH OF SLIDE CREEK, MODOC NATIONAL FOREST.	Modoc	Eagle Peak (4112032)	CNDDDB, May 2017 (EO 19)	30-Jun-1979	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1979 RIEGEL COLLECTION. NEEDS FIELDWORK.		Modoc NF	6890
14	DRY CREEK TRIBUTARY OF PARKER CREEK, WARNER MOUNTAINS.	Modoc	Shields Creek (4112043)	CNDDDB, May 2017 (EO 20)	22-Jun-1931	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1931 PAYNE COLLECTION. NEEDS FIELDWORK.		Unknown	



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Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
15	DEEP CREEK.	Modoc	Payne Peak (4112053)	CNDDDB, May 2017 (EO 4)	15-Jun-1946	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1946 ALEXANDER & KELLOGG COLLECTION. NEEDS FIELDWORK.		Modoc NF	7000
16	ABOUT 3.3 MILES NNE OF PORTER RESERVOIR, AND 1.5 MILES WSW OF JUNCTION OF HIGHWAY 299 AND 58.	Modoc	Surprise (4112054)	CNDDDB, May 2017 (EO 10)	30-May-2002	25+ PLANTS SEEN IN 2002.	MEADOWS HAVE BEEN GRAZED, AND PERCHED GROUNDWATER IN EPHEMERAL BASINS MAY BE ALTERED BY FUTURE MINING ACTIVITIES.	PVT	5000
17	SOUTH OF CEDAR PASS, NORTH SLOPES OF PEAK 7298, WARNER MOUNTAINS.	Modoc	Payne Peak (4112053)	CNDDDB, May 2017 (EO 5)	25-Jun-1990	SITE BASED ON A 1990 TAYLOR & CLIFTON COLLECTION. A 1941 BEETLE COLLECTION FROM "NEAR SUMMIT OF CEDARVILLE PASS, 6950 FEET" IS ALSO ATTRIBUTED TO THIS SITE BASED ON HIGHER ELEVATION. NEEDS FIELDWORK.		Modoc NF	7050
18	EDGE OF THOMBS (THOMS) CREEK, FOOT OF BONNER GRADE, 13.4 MILES NORTHEAST OF ALTURAS ALONG CEDAR PASS ROAD.	Modoc	Payne Peak (4112053)	CNDDDB, May 2017 (EO 7)	27-May-1940	SITE BASED ON A 1938 CONSTANCE COLLECTION. A 1940 HITCHCOCK COLLECTION FROM "12 MILES NE OF ALTURAS, 5300 FEET" IS ALSO ATTRIBUTED TO THIS SITE. NEEDS FIELDWORK.		Unknown	5400

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Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
19	CEDAR PASS CAMPGROUND, WEST OF CEDARVILLE.	Modoc	Payne Peak (4112053)	CNDDDB, May 2017 (EO 6)	22-Jun-1955	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1955 BERG COLLECTION. NEEDS FIELDWORK.		Modoc NF	
20	SUMMIT CANYON JUST NORTH OF CEDAR PASS, MODOC NATIONAL FOREST.	Modoc	Payne Peak (4112053)	CNDDDB, May 2017 (EO 23)	20-Jun-1994	UNKNOWN NUMBER OF PLANTS OBSERVED IN 1994. NEEDS FIELDWORK.		Modoc NF	6400
20	Modoc NF	Modoc	Payne Peak (4112053)	NRIS, Dec 2016 (050900E_NEBR001_53)	20-Jun-1994	0 individuals		Modoc NF	
21	EAST OF BALD MOUNTAIN, EAST SIDE OF THE WARNER MOUNTAINS.	Modoc	Cedarville (4112052)	CNDDDB, May 2017 (EO 21)	2-Jul-1994	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1994 BARTHOLOMEW COLLECTION. NEEDS FIELDWORK.		Modoc NF	7315
22	UPPER END OF PLEASANTS CANYON, WEST SIDE OF WARNER MOUNTAINS.	Modoc	Willow Ranch (4112083)	CNDDDB, May 2017 (EO 22)	15-May-1992	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1992 BARTHOLOMEW COLLECTION. NEEDS FIELDWORK.		Modoc NF	6330
23	TWELVEMILE CREEK.	Modoc	Mt. Bidwell (4112082)	CNDDDB, May 2017 (EO 9)	1907	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1907 MANNING COLLECTION. NEEDS FIELDWORK.		Unknown	

**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:	1	1	0	0	1	12-Jun-1991	0	1
Los Padres:	-	-	-	-	-	-	-	0
Mendocino:	-	-	-	-	-	-	-	0
Modoc:	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 17, 19, 20, 21, 22	16	1	10	7	29-Jul-2010	5	17
Plumas:	-	-	-	-	-	-	-	0
San Bernardino:	-	-	-	-	-	-	-	0
Sequoia:	-	-	-	-	-	-	-	0
Shasta-Trinity:	-	-	-	-	-	-	-	0
Sierra:	-	-	-	-	-	-	-	0
Six Rivers:	-	-	-	-	-	-	-	0
Stanislaus:	-	-	-	-	-	-	-	0
Tahoe:	-	-	-	-	-	-	-	0
<b>Totals:</b>	N/A	17	1	10	8	N/A	5	18

**Demographic and Population Trends:** Total number of occurrences for this taxon were estimated using GIS tools and methods described by Green and Sims (2018). Population count and size estimate information is known for nearly one-third (7/23; ~30%) of all California occurrences. These occurrences range in maximum observed size between 1 and 3,000 plants, with an average of roughly 1,225 and a median value of 500 observed plants. Most (4/7; ~57%) of these occurrences were observed to have 500 plants or more (CNDDDB 2017; NRIS 2017). Several (5/23; ~22%) element occurrences are ranked in Excellent (A) condition, some (3/23; ~13%) are listed in Good (B) condition. One element occurrence (EO 17) is reported in Fair (C) condition, and the remainder (14/23; ~61%) are Unknown (U). Over half (12/23; ~52%) of all occurrences are historic and have not been documented in over twenty years (CNDDDB 2018).

**Life History:** Herbaceous annual that blooms from May through July (CNPS 2018). Plants in the genus *Nemophila* have flowers that are insect pollinated (documented visitations from honey bees, leaf-cutting bees, mining bees, and march flies) (CPC 2018).

**Diversity:** *Nemophila* is one of 12 genera in Hydrophyllaceae (incl. *Draperia*, *Emmenanthe*, *Hydrophyllum*, *Phacelia*, *Pholistoma*, and others), encompassing 11 of the 250 species within the family (Patterson and Halse 2018; Stevens 2001). The genus *Nemophila* is paraphyletic, with the three species of *Pholistoma* nested within its respective clade (combined ITS and cpDNA sequence data). The topology of the entire group is defined by a “California *Nemophila* clade” (incl. *N. heterophylla*, *N. maculata*, *N. menziesii*, *N. parviflora* and others) and a “*Nemophila breviflora* clade” (incl. *N. aphylla*, *N. breviflora*, *N. kirtleyi*, and *N. phacelioides*), which is sister to the genus *Pholistoma* (Helfgott 2000).

**Habitat:** Mesic conditions associated with meadows, seeps, Great Basin scrub, and upper montane coniferous forests (CNPS 2018). Plants from many occurrences are found growing beneath canopies of perennial herbs (*Veratrum californicum*), shrubs (*Cercocarpus ledifolius* or *Prunus emarginata*) or thickets (aspen-cottonwood, willow, etc.) that are often near water sources. *Nemophila breviflora* may be found growing alongside *Abies* sp., *Agastache urticifolia*, *Amelanchier utahensis*, *Artemisia cana*, *Aster foliaceus*, *Calocedrus decurrens*, *Cercocarpus ledifolius*, *Galium bifolium*, *Erythranthe breviflora*, *Juncus balticus*, *Nemophila pedunculata*, *Pinus contorta*, *P. jeffreyi*, *Populus tremuloides*, *Potentilla gracilis*, *Prunus virginiana*, *Salix* sp., *Symphoricarpos albus*, and *Veratrum californicum* (CNDDDB 2018).

**Habitat Status or Trend:** The Warner Mountains are historically overgrazed, and open shrubland habitat has been encroached upon as a result of these practices (Vale 1977). In addition, aspen habitat within the Warner Mountains has become measurably more fragmented during the last 75 years, resulting in a diminished capacity to support biodiversity and wildlife (Di Orio et al. 2005).

**Capacity for the Species to Disperse:** Unknown.

**Threats:** Nearly one-third of all California occurrences (7/23; ~30%) are threatened or impacted by grazing (5/7; ~71%), mining (1/7; ~14%), or recreation activity (1/7; ~14%). Vehicles may also threaten some occurrences (CNDDDB 2018; CNPS 2018; NRIS 2017).

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**Author(s) and Date:**

Steven Serkanic, Assistant Rare Plant Botanist, California Native Plant Society

Aaron Sims, Rare Plant Botanist, California Native Plant Society, (916) 738-7610, asims@cnps.org. September 6, 2019.

**Reviewer(s) and Date:**

David Magney, Rare Plant Program Manager, California Native Plant Society, (916) 447-2677 ext. 205, dmagney@cnps.org. September 6, 2019.

**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.