

## Plant Species Evaluation Form

### *Erigeron nivalis* Nuttall

#### SNOW FLEABANE DAISY

**Family:** Asteraceae  
(CNPS 2018)

**PLANTS Symbol:** ERACD2  
(USDA 2018)

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

**Synonyms/Other Names:** Names applied to this entity include *E. acris* subsp. *debilis* (A. Gray) Piper, *E. acris* var. *debilis* A. Gray, *E. debilis* (A. Gray) Rydb., *E. elatus* var. *bakeri* Greene, *E. jucundus* Greene, *E. scotteri* B. Bolvin, *T. acris* var. *debilis* (A. Gray) G. L. Nesom (Tropicos 2018).

**Identification Issues:** As a member of the tribe Astereae, plants in this group have florets with a pappus of bristles and heads subtended by several series of imbricate phyllaries (Funk et al. 2009). Pistillate florets of *Erigeron nivalis* are dimorphic, with heads containing both ray and non-rayed female florets. Ray florets are generally in two series. There are generally 40-70 outer ray florets that are white to pink and remain uncoiled when dry. The corolla of the inner series of ray florets are elaminate and tubular. Plants have persistent basal leaves and cauline leaves that gradually reduce in size distally. Stems are erect to basally ascending and develop from a caudex that is simple to branched (sometimes short-rhizomatous) (Nesom 2006; Keil and Nesom 2018).

#### **Taxonomy:**

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Species In Genus: +- 375 species: worldwide. Etymology: (Greek: early old age). Note: *Erigeron concinnus* (Hook. & Arn.) Torr. & A. Gray var. *condensatus* D.C. Eaton, *Erigeron disparipilus* Cronquist, and *Erigeron lobata* A. Nelson apparently not in California.

Genus Description – Habit: Annual to perennial herb (subshrub). Stem: generally erect. Leaf: alternate, generally sessile, generally entire (toothed or lobed to ternately dissected).

Inflorescence: heads generally radiate (discoid, disciform), 1--few (many), peduncled; inflorescence generally +- flat-topped (raceme- to panicle-like); involucre urn- to bell-shaped or generally hemispheric; phyllaries linear to narrowly lanceolate, in 2--several series, +- equal to strongly graduated, generally ascending or erect in flower, generally green, spreading when pressed, reflexed when dry; receptacle flat to steeply conic, smooth to shallowly pitted, epaleate. Ray Or Pistillate Flower: (0)10--generally many; ray generally narrow, generally white or pink to lavender or blue-purple (yellow), generally spreading when fresh, often coiled or reflexed when dry. Pistillate Flower: (0)10--generally many; ray generally narrow, generally white or pink to lavender or blue-purple (yellow), generally spreading when fresh, often coiled or reflexed when dry. Disk Flower: generally many; corolla generally narrowly funnel-shaped, yellow; anther tip +- lanceolate; style tips 0.1--0.8 mm, +- triangular. Fruit: generally 0.5--3 mm, generally +- oblong, compressed to +- cylindric, generally 2-ribbed, generally sparsely hairy; pappus (0)

generally double, outer of short bristles, narrow scales, or a short crown, inner of 6--50 long bristles.

Species Description – Habit: Biennial, perennial herb, 10--35 cm, taprooted or fibrous-rooted. Stem: sparsely hairy, stalked-glandular. Leaf: basal 3--8 cm, cauline gradually reduced distally on stem, sparsely rough-hairy or strigose. Inflorescence: heads 1--8, inconspicuously radiate, in +- flat-topped cluster; involucre 5--6 mm, 8--11 mm diam; phyllaries +- equal, sparsely soft-hairy or not, minutely stalked-glandular, +- green. Ray Flower: in +- 2 series, outer flowers with erect rays 3--4.5 mm, white to +- pink, rays not coiled when dry, inner flowers rayless. Fruit: 2--2.4 mm. eFlora Treatment Author: David J. Keil & Guy L. Nesom.

**Status:**

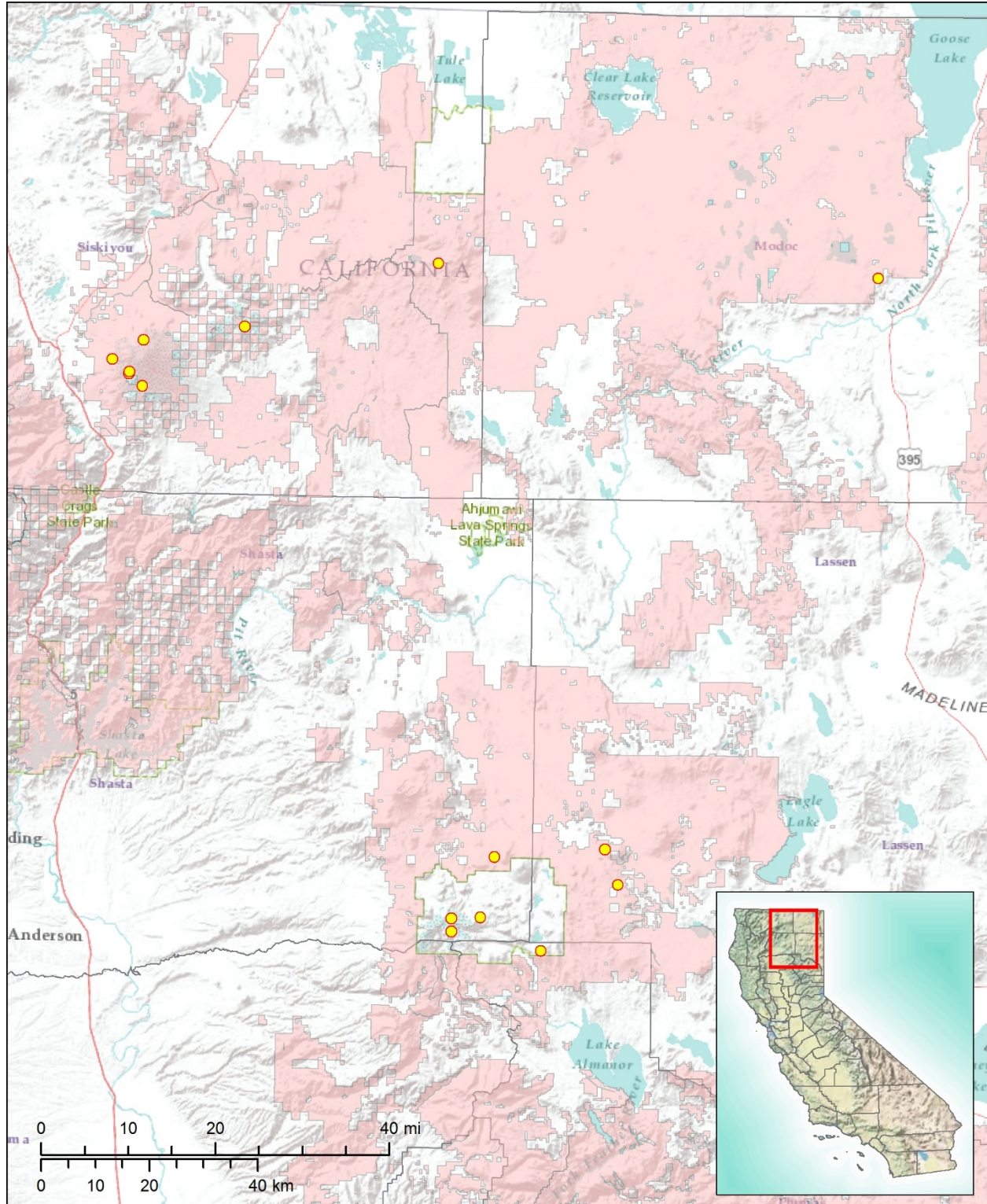
Note: Federally recognized Endangered, Threatened, Proposed, or Candidate species under the Endangered Species Act are omitted as they do not meet the definition of a Species of Conservation Concern (FSH 1909.12 § 12.52).

State Listing	G-rank	S-rank	CRPR	R5 FSS	NFP SM	CA BLM
CA: Not listed NV: Not listed OR: Not listed	G4G5	CA: S3 NV: Not listed OR: Not listed	2B.3	Not listed (formerly R5 sensitive)	Not listed	Not listed
SWAP: Not listed	NNHP: Not listed	NNPS: Not listed	ORBIC: Not listed	OCS: Not listed	IUCN: Not listed	

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 2001b); 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).

The inclusion of *E. nivalis* as a U.S. Forest Service, Region 5, Species of Conservation Concern is recommended by botanists that work where this plant occurs (Nelson, J. pers. comm. 2017).

**Distribution:** California occurrences represent the southwestern tip of the distribution of *E. nivalis*. Plants are distributed across western North America from northern California, east to Wyoming and Montana, and north into British Columbia and Yukon Territory (CPNWH 2018). The fourteen California occurrences are found in Plumas, Shasta, Lassen, Modoc, and Siskiyou counties (CNDDDB 2017; NRIS 2017; Calflora 2017). A total of nine occurrences are found on NFS lands, five (5/9; ~56%) of which are on Shasta-Trinity NF. An additional three records (3/9; ~33%) are on Lassen NF, and a single occurrence is located on Modoc NF (1/9; ~11%) (CNDDDB 2017; NRIS 2017; Calflora 2017). Two historic records were recovered from locations a considerable distance from the core distribution within Stanislaus and Inyo national forests (CCH 2017) These records were flagged as questionable and included within the final locations table.



**Sources:** *Distribution:* Calflora 2017, 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).

**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.

<b>Rec. #</b>	<b>Locality</b>	<b>County</b>	<b>Quad</b>	<b>Reference (Source)</b>	<b>Date Last Observed</b>	<b>Population Info</b>	<b>Threats</b>	<b>Land Manager</b>	<b>Elev. (ft.)</b>
1	MOUNT HARKNESS, LASSEN VOLCANIC NATIONAL PARK.	Plumas	Mt. Harkness (4012143)	CNDDDB, May 2017 (EO 1)	26-May-1905	OBSERVED HERE BY DAKEN IN 1973. ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS SITE NAME NOTED IN "A FLORA OF LASSEN VOLCANIC NATIONAL PARK."		Lassen Volcanic NP	8000
2	NORTH AND NORTHWEST SLOPES OF BUMPASS MOUNTAIN, MOUNT LASSEN VOLCANIC NATIONAL PARK.	Shasta	Reading Peak (4012144)	CNDDDB, May 2017 (EO 3)	17-Aug-1980	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1980 COLLECTION BY SHOWERS.		Lassen Volcanic NP	8700

Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
3	SOUTHEAST SLOPE OF LASSEN PEAK AT ORIGIN OF WEST FORK HAT CREEK, MOUNT LASSEN VOLCANIC NATIONAL PARK.	Shasta	Reading Peak (4012144)	CNDDB, May 2017 (EO 2)	18-Aug-1980	SITE IS BASED ON A 1980 SHOWERS COLLECTION AND AN UNDATED SHOWERS COLLECTION FROM "SE SLOPES OF LASSEN PEAK AT ORIGIN OF W FORK OF HAT CREEK." AN 1882 AUSTIN COLLECTION FROM LASSEN PEAK IS ALSO ATTRIBUTED HERE. INCLUDES FORMER OCC #4.		Lassen Volcanic NP	8700
4	Lassen National Park	Shasta	Reading Peak (4012144)	Calflora, May 2017 (ce340)	1-Jan-1996	1+ individuals		Lassen Volcanic NP	6969
5	SOUTHEAST SIDE OF PINE CREEK, NORTH END OF UPPER STEPHENS MEADOWS, LASSEN NATIONAL FOREST.	Lassen	Bogard Buttes (4012152)	CNDDB, May 2017 (EO 8)	6-Aug-2010	157 PLANTS OBSERVED IN NORTHERN POLYGON IN 2004. 55 PLANTS OBSERVED IN 6 SOUTHERN POLYGONS IN 2010.	TIMBER HARVEST PLANNED; E. NIVALIS SITES ARE KNOWN AND MARKED, SO THEY WILL BE AVOIDED.	Lassen NF	6200

Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
6	RAIL CANYON, FROM ABOUT 1.2 MILES WEST TO 1.5 MILES SOUTHWEST OF WEST PROSPECT PEAK.	Shasta	West Prospect Peak (4012154)	CNDDDB, May 2017 (EO 7)	4-Sep-2002	ABOUT 100 PLANTS SEEN AT TWO SOUTHERN POLYGONS IN 1998, AND 150+ PLANTS SEEN AT NORTHERN POLYGON IN 2002. RARE PLANT PENSTEMON CINICOLA ALSO OCCURS NEARBY.		Lassen NF	5850
7	NORTHWEST SLOPE OF BOGART BUTTES ABOUT 1 MILE NORTHWEST OF SUMMIT, LASSEN NATIONAL FOREST.	Lassen	Bogard Buttes (4012152)	CNDDDB, May 2017 (EO 5)	1-Aug-1996	ABOUT 700 PLANTS OBSERVED IN 1995 AND IN 1996.	OLD LOGGING ROAD JUST BELOW OCCURRENCE & LOGGING SLASH NEARBY.	Lassen NF	6460
8	ON THE EAST RED RIDGE WEST OF AND ABOVE PANTHER CREEK MEADOWS, MOUNT SHASTA.	Siskiyou	McCloud (4112232)	CNDDDB, May 2017 (EO 10)	24-Aug-1939	ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1939 COLLECTION BY COOKE. NEEDS FIELDWORK.		Shasta Trinity NF	0

Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
9	ON RIDGES NORTH OF HORSE CAMP, MOUNT SHASTA.	Siskiyou	Mt. Shasta (4112242)	CNDDDB, May 2017 (EO 11)	14-Aug-1941	ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1941 COLLECTION BY COOKE. NEEDS FIELDWORK.		Shasta Trinity NF	9000
9	Shasta-Trinity NF	Siskiyou	Mt. Shasta (4112242)	NRIS, Apr 2017 (0514_TR ACD_59_001)	1-Jan-1977	individuals		Shasta Trinity NF	0
10	SOUTH SIDE OF DILLER CANYON, MOUNT SHASTA.	Siskiyou	Hotlum (4112243)	CNDDDB, May 2017 (EO 13)	26-Aug-2010	SITE IS BASED ON A 2010 PHOTO BY NELSON. NEEDS MAP DETAIL.		Shasta Trinity NF	0
11	MOUNT SHASTA, NORTH RIDGES, HUDSONIAN MOUNT SHASTA (NEAR TIMBERLINE).	Siskiyou	Mt. Shasta (4112242)	CNDDDB, May 2017 (EO 12)	28-Jul-1938	ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1938 COLLECTION BY COOKE. NEEDS FIELDWORK.		Shasta Trinity NF	9500

Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
12	NORTH FACE OF DRY CREEK PEAK, AT HEADWATERS OF ANTELOPE CREEK, RIDGE ABOUT 12 AIR MILES NE OF MT SHASTA SUMMIT.	Siskiyou	Rainbow Mtn. (4112148)	CNDDDB, May 2017 (EO 9)	8-Aug-2006	SITE IS BASED ON A 2006 TAYLOR COLLECTION.		Shasta Trinity NF	7200
13	Modoc NF From 2007 MDF	Modoc	Mahogany Ridge (4112055)	Calflora, May 2017 (ce913)	17-Mar-2014	1+ individuals		BLM	4662
14	SOUTH RIM OF ALCOHOL CRATER, EAST OF MEDICINE LAKE, MODOC NATIONAL FOREST.	Siskiyou	Medicine Lake (4112155)	CNDDDB, May 2017 (EO 6)	30-Jul-2009	ABOUT 250 PLANTS OBSERVED IN 1987. FEWER THAN 50 PLANTS OBSERVED IN 1995. A 2009 GAUNA PHOTO FROM "MODOC NF, DOUBLEHEAD RD, MEDICINE LAKE HIGHLANDS" IS ALSO ATTRIBUTED TO THIS SITE.		Modoc NF	6900
14	Modoc NF	Siskiyou	Medicine Lake (4112155)	NRIS, Dec 2016 (050900E_TRACD001_56)	22-Aug-1995	50 individuals		Modoc NF	0



<b>Rec. #</b>	<b>Locality</b>	<b>County</b>	<b>Quad</b>	<b>Reference (Source)</b>	<b>Date Last Observed</b>	<b>Population Info</b>	<b>Threats</b>	<b>Land Manager</b>	<b>Elev. (ft.)</b>
14	Modoc NF	Siskiyou	Medicine Lake (4112155)	NRIS, Dec 2016 (050900E_TRACD001_56)	9-Aug-1987	50 individuals		Modoc NF	0

**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:	5,6,7	3	-	2	1	6-Aug-2010	4	3
Los Padres:	-	-	-	-	-	-	-	0
Mendocino:	-	-	-	-	-	-	-	0
Modoc:	14	1	-	1	-	30-Jul-2009	-	1
Plumas:	-	-	-	-	-	-	-	0
San Bernardino:	-	-	-	-	-	-	-	0
Sequoia:	-	-	-	-	-	-	-	0
Shasta-Trinity:	8,9,10,11,12	5	-	2	3	26-Aug-2010	-	5
Sierra:	-	-	-	-	-	-	-	0
Six Rivers:	-	-	-	-	-	-	-	0
Stanislaus:	-	-	-	-	-	-	-	0
Tahoe:	-	-	-	-	-	-	-	0
<b>Totals:</b>	N/A	9	0	5	4	N/A	4	9

**Demographic and Population Trends:** Total number of occurrences for this taxon were estimated using GIS tools and methods described by Green and Sims (2018). The four (4/14; ~29%) occurrences with population count and size estimate information range in observed size from roughly one to 700 plants. Roughly 250 plants were seen at the site associated with Rec. #14 in 1987, with a reduction to 50 observed plants in 1995. Roughly 157 plants were counted at the site associated with Rec. #5 in 2004. Fieldwork including repeat and ongoing visits to California *E. nivalis* occurrences are needed (CNDDDB 2017; NRIS 2017; CCH 2017; Calflora 2017).

**Life History:** An herbaceous biennial to short-lived perennial that blooms from July through August (Nesom 2006; CNPS 2018). Plants are fibrous-rooted, have simple to branched caudices, and occasionally develop stems from a taproot (Nesom 2006). Alongside additional plants in Astereae, aphids in the genus *Uroleucon* rely upon members of *Erigeron* as host plants (Moran 1983; Funk et al. 2009). Flowers of *E. nivalis* are gynomonecious, with two series of outer pistillate ray florets surrounding the innermost hermaphroditic disc florets (Nesom 2006). Greater rates of outcrossing has been observed on pistillate florets of gynomonecious composites. In addition, superior seed quality has been documented on pistillate flowers of plants with similar breeding systems (Mamut et al. 2014). Members of *Erigeron* are visited by anthophorine bees, bumble bees, cellophane bees, centris bees, cuckoo bees, honey bees, leaf-cutting bees, sweat bees, mining bees, masked bees, diving beetles, flower beetles, leaf beetles, scarab beetles, soldier beetles, butterflies (brush-footed, copper, blues, hairstreak, metalmark, skipper, sulphurs, whites, and swallowtails), bee flies, blow flies, flesh flies, freeloader flies, house flies, root-maggot flies, saw flies, syrphid flies, tachinid flies, thick-headed flies, metalmark and noctuid moths, plant bugs (*Arhysus*, *Calocoris*, and *Lygus*), paper wasps, parasitoid wasps, potter wasps, square-headed wasps, thread-wasited wasps, and weevil wasps (CPC 2018).

**Diversity:** The genus *Erigeron* is a paraphyletic member of the tribe Astereae (incl. *Baccharis*, *Bellis*, *Chrysothamnus*, *Ericameria*, *Grindelia*, *Hazardia*, *Heterotheca*, *Isocoma*, *Oreostemma*, *Solidago*, *Symphyotrichum*, *Xylorhiza* and others) within subtribe Conyzinae (500 species) with the New World *Conyza*, North American *Aphanostephus*, and the South American genera *Apopyros*, *Darwiniothamnus*, *Hysterionica*, *Leptostelma*, and *Neja* nested within the clade defined by *Erigeron* s.l. (Noyes 2000; Nesom 2008; Funk et al. 2009). *Erigeron* assumes a position that is nested, and also sister, to the rest of the clade represented by subtribe Conyzinae, with the aforementioned genera scattered within (Noyes 2000). Subtribe Conyzinae is essentially one large *Erigeron*, if adhering to tenets of monophyletic nomenclature (Funk et al. 2009).

Polyploidy, hybridization, and agamospermy are common phenomena among species of *Erigeron* (Noyes 2000). A history is known of treating *E. nivalis* as an infraspecific taxon of *E. acris*. Both taxa occur in sympatry throughout parts of northwest United States and Canada. Intergradation between these entities is not known (Nesom 2006).

**Habitat:** Plants in California grow in volcanic crevices and rocky substrates in alpine boulder and rock fields, meadows, seeps, and openings in subalpine coniferous forests (CNDDDB 2018; CNPS 2018). General descriptions indicate that plants are known to also occur along gravel bars and banks, roadsides, and open woods (Nesom 2006). Plants associated with California occurrences are known to grow alongside *Ageratina occidentalis*, *Angelica breweri*, *Brickellia grandiflora*, *Cardamine bellidifolia*, *Chamaebatiaria millefolium*, *Elymus elymoides*, *Ericameria nauseosa*, *Draba breweri*, *Drymocallis glandulosa*, *Hieracium gracile*, *Juniperus communis*, *Micranthes tolmiei*, *Monardella odoratissima*, *Penstemon deustus*, *Phyllodoce empetriformis*, *Pinus contorta*, *Polystichum kruckebergii*, *P. lonchitis*, *Populus tremuloides*, *Ribes cereum*, *Senecio fremontii*, *Silene bernardina*, *Tsuga mertensiana*, and *Woodsia scopulina* (CNDDDB 2018).

Plants outside California are documented growing alongside *Abies lasiocarpa*, *Apocynum androsaemifolium*, *Arctostaphylos uva-ursi*, *Arnica cordifolia*, *A. latifolia*, *Betula nana*, *Calochortus lyallii*, *Cassiope mertensiana*, *Ceanothus velutinus*, *Cystopteris fragilis*, *Erigeron acris*, *E. speciosus*, *Eriogonum umbellatum* var. *majus*, *Linnaea borealis*, *Oxyria digyna*, *Pinus albicaulis*, *P. ponderosa*, *Pseudotsuga menziesii*, *Ribes lacustre*, *Rubus idaeus* var. *strigosus*, and *Taraxacum ceratophorum* (CPNWH 2018).

**Habitat Status or Trend:** *Erigeron nivalis* exhibits considerable niche breadth as indicated by the number of associated habitat types and co-occurring taxa (CNDDDB 2018; CNPS 2018; CPNWH 2018). This broadly distributed taxon does not exhibit a strict allegiance to narrow or specific growing conditions (Nesom 2006). Substantial trends and noteworthy events directly impacting the preferred habitat of *E. nivalis* remain unknown. Certain occurrences are documented in forest gaps and subalpine habitat. The impact of vegetation encroachment and altered fire regimes should be considered for plants that are found in such habitats (USDA 2001a; Imper 2016)

**Capacity for the Species to Disperse:** The capacity for *E. nivalis* to disperse is unknown. Achenes associated with disk florets have a pappus. The pappus is a feature that is known to increase dispersal distance of taxa that have this character. Albeit, dispersal efficiency is variable among taxa that retain pappus bristles atop fruit (Sheldon and Burrows 1973).

**Threats:** Logging activities threaten plants associated with two of twelve (2/12; ~17%) CNDDDB element occurrences. One of these occurrences (EO 8) had been marked to be avoided by timber crews. A slash pile and an old logging road are in the vicinity of element occurrence five (EO 5) (CNDDDB 2018).

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Julie A. Kierstead, USDA Forest Service Region 5 Ecosystem Planning, 3 February 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.