1. **Species:** ***Potentilla cristae*** Ferlatte & Strother, **crested cinquefoil**

Photo source: CalPhotos
Photo credits: Julie Kierstead Nelson—left, Steve Matson—right

2. **Status:** Table 1 summarizes the current status of this species or subspecies/variety by various ranking entities and defines the meaning of the status.

Table 1. Current status of crested cinquefoil

Entity	Status	Status Definition
NatureServe CA[a]	G2 S2	G2: Imperiled — At high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors. S2: Imperiled — At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
California Rare Plant Rank[b]	1B.3	1B: Plants rare, threatened, or endangered in California and elsewhere. 0.3: Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known).
California State Listing[c]	Not listed	
USDA Forest Service[d]	Not listed	
USDI FWS[e]	Not listed	
USDI BLM[f]	Not listed	
NatureServe OR[g]	Not present	
Oregon State Listing[h]	Not present	

NatureServe NV[i]	Not present	
Nevada State Listing[j]	Not present	

[a] California Natural Diversity Database, California Dept. of Fish & Wildlife [CNDDB 2020]
[b] California Native Plant Society [CNPS 2020]
[c] California Department of Fish and Wildlife [CDFW 2020]
[d] US Forest Service Region 5 Forester's List [USDA] and Pacific NW Survey and Manage [USDA & BLM 2014]
[e] US Department of Interior Fish and Wildlife Service [USFWS 2020]
[f] US Department of Interior Bureau of Land Management [BLM 2015]
[g] Oregon Biological Information Center [ORBIC 2019]
[h] Oregon Department of Agriculture [ODA 2018]
[i] Nevada Natural Heritage Program [NNHP 2020]
[j] Nevada Division of Forestry [NDF 2012]
Note: Individual State Heritage Programs (CNDDB, ORBIC, NNHP) represent NatureServe and contain more up-to-date ranks for their state than NatureServe Explorer.

Crested potentilla was first added to the CNPS *Inventory of Rare and Endangered Plants* in the fifth edition, published in 1994.

3. **Taxonomy:** Table 2 summarizes this species or subspecies/variety's name status in key literature.

Table 2. Name status of crested cinquefoil

Entity	Name Status
CNDDB and CNPS	*Potentilla cristae* Ferlatte & Strother
Jepson eFlora	*Potentilla cristae* Ferlatte & Strother
Jepson Manual (1993)	*Potentilla cristae* W. Ferlatte & Strother
Flora of North America	*Potentilla cristae* Ferlatte & Strother
USDA NRCS[a] PLANTS	*Potentilla cristae Ferlatte & Strother*

[a] Natural Resources Conservation Service [NRCS]

Synonymy: There are no known synonyms for *Potentilla cristae* Ferlatte & Strother.

Jepson eFlora link: https://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=39701

Type locality: "On divide between Scott River and Trinity River drainages, ca. 13 mi SW of Weed, narrow depression on ridge east of Cory Peak, in rocky swale just E of small pond, ca. 2300 m (7500 ft), ultrabasic substrate, 10 Aug 1988" (*W. J Ferlatte 2116) Madroño* 37: 190, fig. 1 (1990).

4. Distribution, abundance, and population trend on the planning unit [12.53.2,3,4]:
Table 3 summarizes the distribution and frequency of this species or subspecies/variety within National Forest System Lands in California. Table 4 lists all known occurrences of this species or subspecies/variety within California. Individual occurrences are defined as sites that contain an individual, population, or groups of populations of the plant that are located more than 0.25 miles apart from each other as defined by the CNDDB.

Table 3. Known Occurrence Frequency of crested cinquefoil within the Planning Area (NRIS, CNDDB, Calflora/CCH databases)

National Forest System (NFS) lands	Record #s (from Locations table below)	CNDDB EOs	Non-CNDDB Records	Recent (seen in past 20 years)	Historic (not seen in past 20 years)	Most Recent Obs. Date	Total Records on NFS lands
Klamath:	4, 5, 6, 7, 9	4	1	2	3	7-Aug-2018	5
Shasta-Trinity:	1, 2, 3, (5), 8, 10	4 (1)	1	2	3 (1)	16-Aug-2018	5 (1)
Totals:	N/A	8	2	4	6	N/A	10

Table 4. Known Occurrences of crested cinquefoil within California (NRIS, CNDDB, Calflora/CCH databases).

Rec. #	Locality	County	Quad	Ref. (Source)	Date Last Obs'd	Population Info	Threats	Land Mgr.	Elev. (ft.)
1	Above Upper Gray Rock Lake, Shasta-Trinity National Forest.	Siskiyou	Seven Lakes Basin (4112224)	CNDDB, May 2017 (EO 1)	8/9/1992	20 plants observed over 0.25 acre in 1992.		Shasta-Trinity NF	6800
1	Shasta-Trinity Nf	Siskiyou	Seven Lakes Basin (4112224)	NRIS, Apr 2017 (POCR605 140004)	8/9/1992	Individuals		Shasta-Trinity NF	
2	Summit Of Mount Eddy, North Slope Of Mount Eddy, And On Ridges Above Deadfall Lakes.	Siskiyou | Trinity	Mount Eddy (4112234)	CNDDB, May 2017 (EO 2)	6/28/2013	Site Is Based On Several Collections, Observations, And Photos From 1888 Through 2013. Map Detail Is Needed For This Area.		Shasta-Trinity NF	8400
2	Near Mt. Eddy; Near Mt. Eddy	Siskiyou	Mount Eddy (4112234)	CCH, Jan 2017 (UC329971)	9/7/1888			Shasta-Trinity NF	
2	Mt. Eddy	Trinity	Mount Eddy (4112234)	Calflora, May 2017 (jgr17762)	7/13/1996	1+ Individuals		Shasta-Trinity NF	7854
2	Summit Region Of Mount Eddy	Siskiyou	Mount Eddy (4112234)	CCH, Jan 2017 (JEPS5717 3)	8/13/1967			Shasta-Trinity NF	8999
2	Mt. Eddy, Above Deadfall Lakes Near Siskiyou Co. Line	Trinity	Mount Eddy (4112234)	CCH, Jan 2017 (UC156074 1)	9/1/1987			Shasta-Trinity NF	7881
2	Trinity And Siskiyou Counties, Summit Region Of Mt. Eddy	Trinity	Mount Eddy (4112234)	CCH, Jan 2017 (HSC9059 0)	6/24/1976			Shasta-Trinity NF	9003

Table 4. Known Occurrences of crested cinquefoil within California (NRIS, CNDDB, Calflora/CCH databases).

Rec. #	Locality	County	Quad	Ref. (Source)	Date Last Obs'd	Population Info	Threats	Land Mgr.	Elev. (ft.)
2	N Slopes Of Mt. Eddy	Siskiyou	South China Mtn. (4112235)	CCH, Jan 2017 (HSC90530)	7/20/1977			Shasta-Trinity NF	8301
3	Dobkins Lake, Mount Eddy.	Siskiyou	Mount Eddy (4112234)	CNDDB, May 2017 (EO 3)	6/11/1934	Only Source Of Information For This Site Is A 1934 Collection By Johnson. Needs Fieldwork.		Shasta-Trinity NF	6000
3	Dobkins Lake , Dobkins Lake (Mt. Eddy)	Siskiyou	Mount Eddy (4112234)	CCH, Jan 2017 (UC538030)	6/11/1934			Shasta-Trinity NF	6001
4	About 0.2 Mile Ese Of The Summit Of South China Mountain, Just West Of County Line.	Siskiyou	South China Mtn. (4112235)	CNDDB, May 2017 (EO 4)	7/29/2002	30-40 Plants Observed In 1990. 2002 Taylor Collection Is Also Attributed To This Site.		Klamath NF	7950
4	Cirque As Easterly Base Of Summit Ridge, South China Mounain	Siskiyou	South China Mtn. (4112235)	Calflora, May 2017 (gr13589)	7/29/2002	1+ Individuals		Klamath NF	7949
4	Cirque As Easterly Base Of Summit Ridge, South China Mounain	Siskiyou	South China Mtn. (4112235)	CCH, Jan 2017 (JEPS109787)	7/29/2002			Klamath NF	7949
5	Cory Peak, East Of Summit Near Small Pond On The Eastern Slope.	Siskiyou | Trinity	South China Mtn. (4112235)	CNDDB, May 2017 (EO 5)	9/2/1992	Type Locality. 1000-2000 Plants Observed In Two Colonies In 1992.		Klamath NF/Shasta-Trinity NF	7300
5	Klamath Nf	Siskiyou	South China Mtn. (4112235)	NRIS, Apr 2017 (POCR605050000)	9/2/1992	Individuals		Shasta-Trinity NF	

Table 4. Known Occurrences of crested cinquefoil within California (NRIS, CNDDB, Calflora/CCH databases).

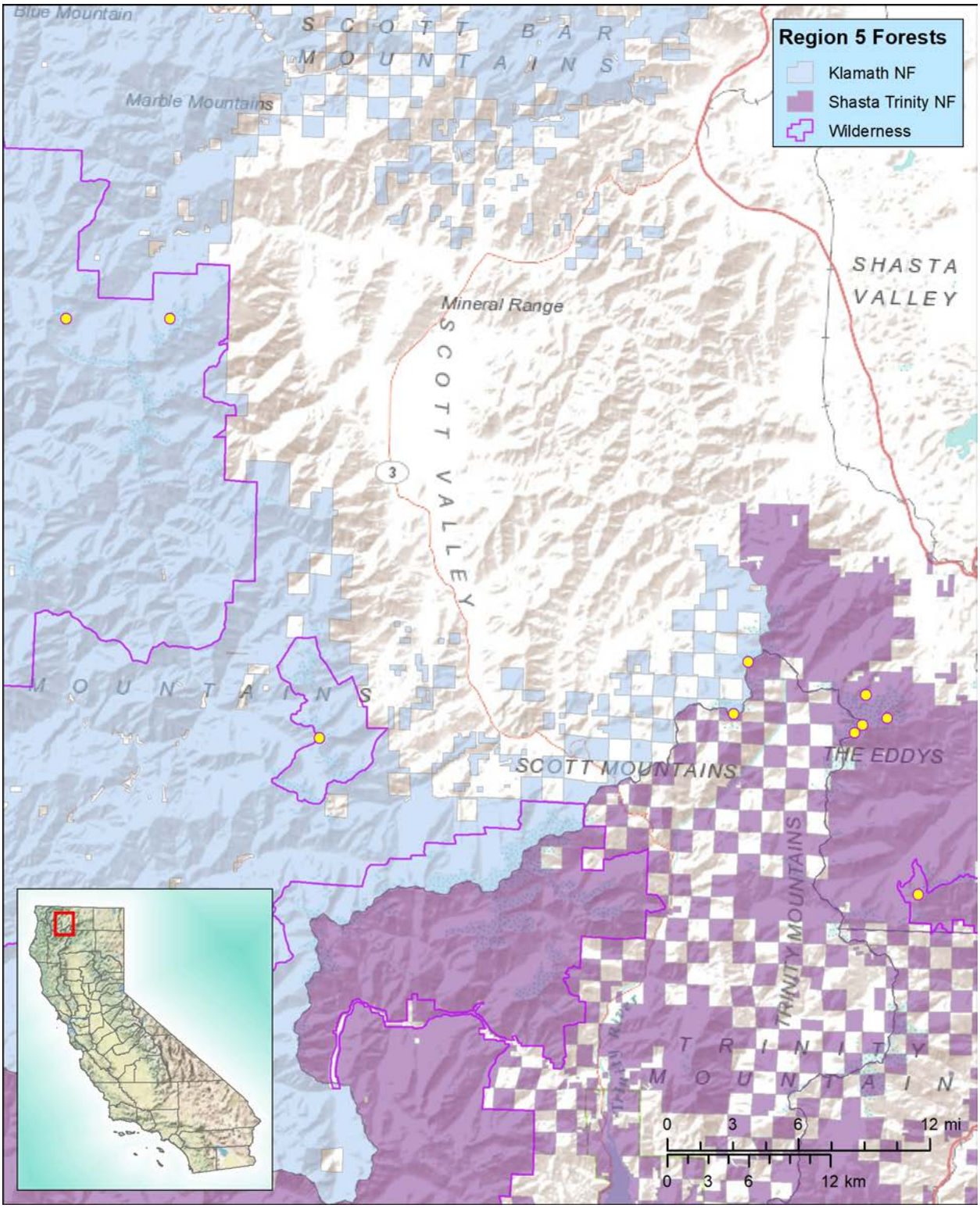
Rec. #	Locality	County	Quad	Ref. (Source)	Date Last Obs'd	Population Info	Threats	Land Mgr.	Elev. (ft.)
5	Ridge E Cory Peak; China Mt. Se Quad., Ridge E Of Cory Peak	Siskiyou	South China Mtn. (4112235)	CCH, Jan 2017 (UC1560740)	8/10/1988			Klamath NF	7500
5	N-Facing Slope E Cory Peak (Above Headwaters Of Cabin Meadow Creek); China Mt. Se Quad., Abv Headwaters Cabin Meadow Creek	Siskiyou	South China Mtn. (4112235)	CCH, Jan 2017 (UC1560739)	8/10/1988			Klamath NF	7201
5	China Mtn. Se, 7.5Í Quad. North-Facing Slope E Of Cory Peak, Above Headwaters Of Cabin Meadow Creek.	Siskiyou	South China Mtn. (4112235)	CCH, Jan 2017 (RSA507664)	8/10/1988				7201
5	Ridge E Cory Peak (Rocky Swale Just E Of Small Pond); China Mt.; China Mt., Ridge E Of Cory Peak, Siskiyou Co.	Siskiyou	South China Mtn. (4112235)	CCH, Jan 2017 (UC1560738)	8/10/1988			Klamath NF	7500
5	Ridge E Cory Peak; China Mt. Se Quad., Ridge E Of Cory Peak	Siskiyou	South China Mtn. (4112235)	CCH, Jan 2017 (UC1560737)	8/5/1989			Klamath NF	7500

Table 4. Known Occurrences of crested cinquefoil within California (NRIS, CNDDB, Calflora/CCH databases).

Rec. #	Locality	County	Quad	Ref. (Source)	Date Last Obs'd	Population Info	Threats	Land Mgr.	Elev. (ft.)
5	E Cory Peak (Above Headwaters Of Cabin Meadow Creek); China Mt. Se Quad., E Of Cory Peak, Cabin Meadow Creek	Siskiyou	South China Mtn. (4112235)	CCH, Jan 2017 (UC1560736)	8/5/1989			Klamath NF	7201
5	Near Summit Cory Peak; China Mt. Quad., Near Summit Cory Peak	Siskiyou	South China Mtn. (4112235)	CCH, Jan 2017 (UC1538958)	8/3/1987			Klamath NF	7001
5	Ridge W. Of Boulder Peak	Siskiyou	Boulder Peak (4112351)	CCH, Jan 2017 (CAS692445)	8/10/1969			Klamath NF	7598
6	Ridge West Of Boulder Peak, Marble Mountain Wilderness, Klamath National Forest.	Siskiyou	Boulder Peak (4112351)	CNDDB, May 2017 (EO 6)	8/10/1969	Only Source Of Information For This Site Is A 1969 Collection By Muth. Needs Fieldwork.		Klamath NF	7600
7	Northeast Face Of Marble Mountain, Marble Mountain Wilderness, Klamath National Forest.	Siskiyou	Marble Mountain (4112352)	CNDDB, May 2017 (EO 7)	9/4/1966	Only Source Of Information For This Site Is A 1966 Collection By Major. Needs Fieldwork.		Klamath NF	7000
7	Siskiyou County: Northeast Face Of Marble Mountain, Marble Mountains	Siskiyou	Marble Mountain (4112352)	CCH, Jan 2017 (UCD113723)	9/4/1966			Klamath NF	7001
8	Eastern Slope Of Mount Eddy, Headwaters Of Wagon Creek.	Siskiyou	Mount Eddy (4112234)	CNDDB, May 2017 (EO 8)	8/7/1997	1000+ Plants Observed In Southern Polygon In 1997. Northern Polygon Is Based On A 1976 Whipple Collection.	ORV TRACKS.	Shasta-Trinity NF	8000

Table 4. Known Occurrences of crested cinquefoil within California (NRIS, CNDDB, Calflora/CCH databases).

Rec. #	Locality	County	Quad	Ref. (Source)	Date Last Obs'd	Population Info	Threats	Land Mgr.	Elev. (ft.)
8	Wagon Creek Drainage Near Wagon Creek	Siskiyou	Mount Eddy (4112234)	CCH, Jan 2017 (HSC90588)	7/1/1976			Shasta-Trinity NF	7904
8	Shasta-Trinity Nf	Siskiyou	Mount Eddy (4112234)	NRIS, Apr 2017 (POCR605140002)	8/7/1997	Individuals		Shasta-Trinity NF	
9	Near High Lake, Russian Wilderness	Siskiyou		Calflora, Jun 2020	8/7/2018	11-50 Plants		Klamath NF	8020
10	Mt. Eddy, Ridgeline Se Of Upper Deadfall Lake, South Of Intersection Of Summit Trail And Sisson-Callahan Trail.,	Siskiyou		Calflora, Nov 2020	6/28/2013	11-50 Plants		Shasta-Trinity NF	7370



Sources: *Distribution*: Calflora 2020, CCH 2020, CNDDB 2020, NRIS 2019. *Baselayers*: 2013 National Geographic Society, i-cubed, Esri, Garmin, NOAA, NPS, USGS.

Potentilla cristae is limited to the Klamath Range (KR) of northern California, with all known occurrences appearing in the mountain ranges surrounding Scott Valley. A large quantity of occurrences come from historical records, having been documented over 20 years ago. Of the ten occurrences shown in the distribution map above, four are in Wilderness Area. The remaining six occurrences form the core cluster of occurrences for the taxon, located at the meeting point of the Trinity, Scott, and Eddy mountains.

5. Brief description of natural history and key ecological functions [basis for other 12.53 components]:

Potentilla cristae is a perennial, clump-forming plant in the rose family. Plants cluster near seasonally-wet swales, seeps, and drainages in gravelly, and often serpentine, soils. Crested potentilla is limited to alpine boulder/rock fields, and subalpine coniferous forests between 1,825 and 2,560 meters in elevation (CNPS 2020). Late snow melt appears to be an important factor for crested potentilla, with plants usually found in sites that are snow-covered well into spring (Ferlatte, 1990), and typically on north-facing slopes. Plants bloom between June and September, and pollinators for this specific taxon are not well characterized. In the genus *Potentilla*, broadly, known pollinators include bees in the genera *Bombus*, *Ceratina*, *Nomada*, *Apis*, *Hylaeus*, *Andrena, Calliopsis, Lasioglossum,* and *Halictus* (CPC 2020). Based on typical proximity to areas of overland water flow, it is likely that seed dispersal is mediated by bulk water flow, and this is seemingly common within the Ivesioid group of *Potentilla* more broadly (Witham 2000). However, *Potentilla cristae* possesses a distinctive, nearly-winged achene unlike other members of the Ivesioid group, and more studies are needed to fully describe the reproductive biology and population dynamics of this taxon.

Plant associates include: *Pinus albicaulis, Juncus mertensianus, Carex microptera, C. scabriuscula, Calyptridium umbellatum, Poa pringlei, Agrostis* sp.*, Ivesia gordonii, Phlox douglasii, Eriogonum siskiyouense, Veronica copelandii, Achillea* sp.*, Arenaria nuttallii, Lewisia leeana, Hazardia whitneyi* var. *whitneyi, Anemone drummondii, Crepis* sp.*, Oxyria digyna, Trisetum spicatum, Galium grayanum, Castilleja arachnoidea,* and *Draba pterosperma*.

6. Overview of ecological conditions for recovery, conservation, and viability [12.53 7, 9?, 10, 11, 12] including Threats and Risk Factors:

While this taxon is exposed to relatively few threats, expansion is limited by seasonal moisture requirements, serpentine soils requirements, as well as limited habitat availability within the correct ecotype and elevation. Among known populations of *Potentilla cristae*, there is some small risk of disturbance due to limited foot traffic by “peak baggers”, but no evidence of OHV or animal disturbances (J. Kierstead pers. comm. 2020). Dana York (pers. comm. 2020) similarly commented that he is not aware of any threats to populations that he has visited, but these populations are comprised of relatively small clusters of individuals, with most occurrences being comprised of fewer than 20 plants on average.

Potential threats to crested potentilla, as well as its broader community, include reduced snow pack, drought, and reduction in total available habitat. Due to the alpine/subalpine association of the taxon, and its dependence on early-season snowmelt, there may be reason to expect upward elevation shift of optimal habitat elevation due to climate change, and potential reduction of suitable habitat as this phenomenon does occur (Lenoir et al. 2008). These climatic trends

coupled with the plant's apparent tendency toward small population sizes at clustered sites may cause reason for concern for the conservation of the species in the future. If populations make a marked decline, it may be beneficial to protect the bulk of *P. cristae* populations at the junction of the Scott and Eddy mountains, where the highest density of individuals specimens appear to grow.

7. Key literature:

Ferlatte, W. J. and J. L. Strother. 1990. *Potentilla cristae* (Rosaceae), a new species from northwestern California. *Madroño* 37(3): 190-194.

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Persons Contacted:

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Julie A. Kierstead, USDA Forest Service Region 5, 14 September 2020.