Plant Species Evaluation Form

Erigeron maniopotamicus G.L. Nesom & T.W. Nelson

MAD RIVER FLEABANE DAISY

Family: Asteraceae (CNPS 2018) | **PLANTS Symbol:** ERMA19 (USDA 2018) | **Calif. Endemic:** Yes (CNPS 2018)

Synonyms/Other Names: Originally described in 2004 (Nesom and Nelson 2004). No synonyms or other names have been used to refer to this taxon (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). *Erigeron maniopotamicus* occurs within the distribution of *E. robustior*. Original collections of *E. maniopotamicus* were labeled as material with an affinity to the latter and more common entity. Morphological distinctions encouraged the recognition of this taxon. Both taxa do not occur in immediate sympatry. *Erigeron robustior* prefers loamy soils in openings and along edges of fir-oak forests, whereas *E. maniopotamicus* is often found on rocky or gravelly exposed barrens. The leaves of *E. maniopotamicus* are larger and unreduced distally near heads, whereas leaves are smaller or absent distally in *E. robustior*. In addition, taproots of *E. maniopotamicus* are thicker (5-8 mm) in contrast the the thinner taproots of *E. robustior* (2-3 mm). Basal leaves of *E. maniopotamicus* are oblanceolate to spatulate-oblanceolate as opposed to the linear to narrowly oblanceolate basal leaves of *E. robustior* (Nesom and Nelson 2004).

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: Perennial herb 10--22(27) cm; taproot +- thick. Stem: branched at base, strigose, glandless. Leaf: basal and cauline, 3--10 cm, oblanceolate to +- narrowly spoon-shaped, 3-nerved, entire; cauline gradually reduced distally on stem or not, spreading-hairy. Inflorescence: heads 1(4); involucre (5)6--7 mm, 9--12(14) mm diam; phyllaries +- equal, elliptic-oblanceolate to oblong-oblanceolate, abruptly acuminate, bristly-strigose to +- stiffly long-straight-hairy, densely long-shaggy-hairy at base, glandless. Ray Flower: (16)21--33; ray 10--12 mm, white to pink or +- purple, not or weakly coiled when dry. Fruit: pappus bristles 16--20. eFlora Treatment Author: David J. Keil & Guy L. Nesom.

Status:

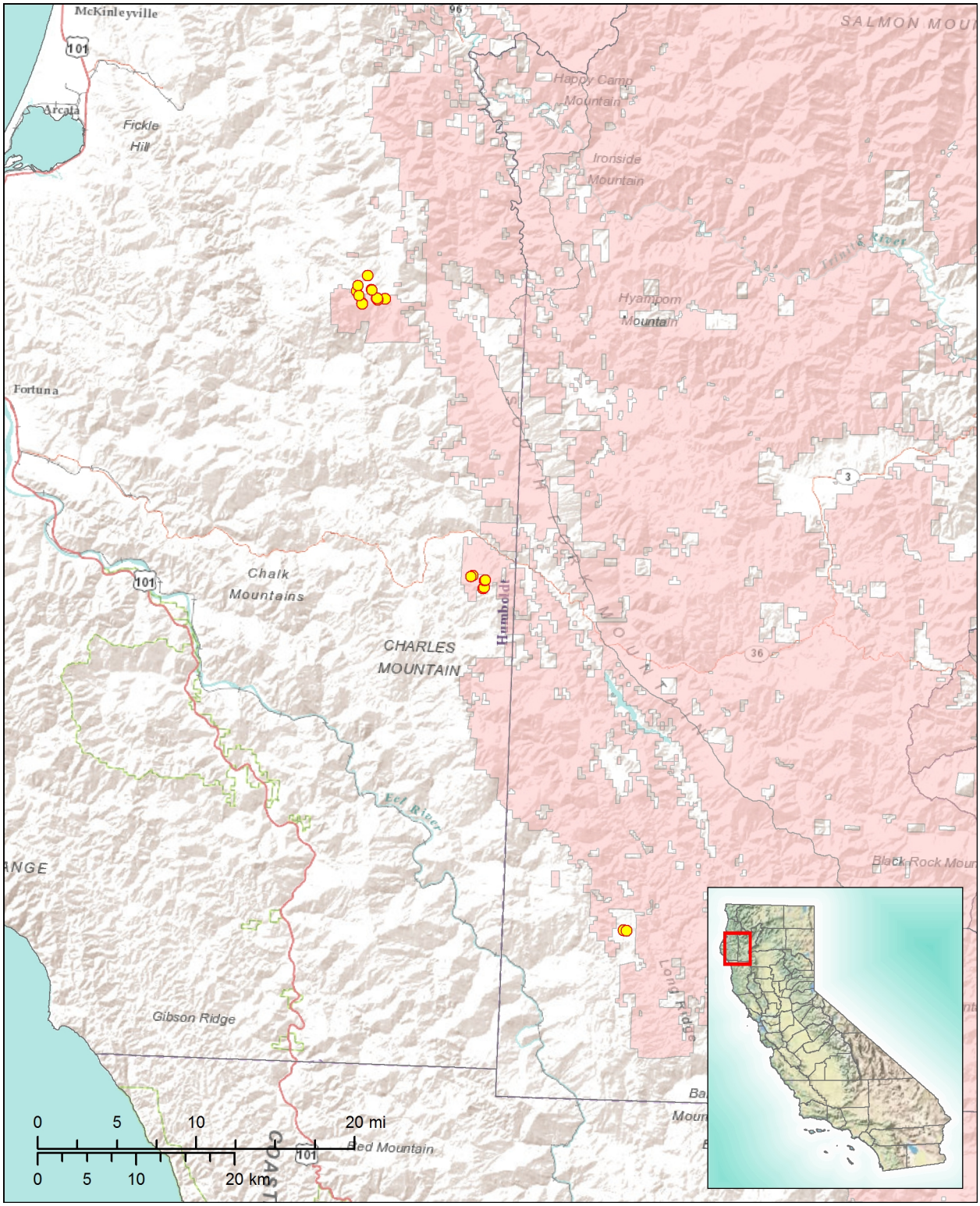
Note: Federally recognized Endangered, Threatened, Proposed, or Candidate species under the Endangered Species Act are omitted as they do not meet the definition of a Species of Conservation Concern (FSH 1909.12 § 12.52).

State Listing	G-rank	S-rank	CRPR	R5 FSS	NFP SM	CA BLM
CA: Not listed NV: Not listed OR: Not listed	G2?	CA: S2? NV: Not listed OR: Not listed	1B.2	Sensitive		

SWAP:	NNHP:	NNPS:	ORBIC:	OCS:	IUCN:
Not listed	Not listed	Not listed	Not listed	Not listed	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 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: Endemic to northwest California in the Klamath Ranges, where plants are found in east-central Humboldt County and nearby Trinity County (Nesom and Nelson 2004; Keil and Nesom 2018). Just under half (5/11; ~45%) of all occurrences are found on Six Rivers National Forest (NF). The remaining six records (6/11; 55%) are found within 5 miles of Six Rivers NF (CNDDB 2017; NRIS 2017; CCH 2017). Two historic records were mapped to improbable sites in Humboldt County. Questionable records from CCH (2017) are noted within the locations table that is included with this report.



Sources: *Distribution*: CCH 2017, CNDDB 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 (CNDDB 2017) definition of Element Occurrences (EOs) in California. Official EO numbers for plants in California are determined solely by the CNDDB and are included within the Reference (Source) column for CNDDB 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	KETTONPOM VALLEY.	Trinity	Zenia (4012324)	CNDDB, May 2017 (EO 1)	26-Jun-1893	1893 BLANKENSHIP COLLECTION IS THE ONLY SOURCE FOR THIS SITE. NEEDS FIELDWORK.	AREA USED FOR RANCHING, INCLUDING CATTLE GRAZING AND TIMBER EXTRACTION.	PVT; Six Rivers NF	
1	Ketten-Pum Valley	Trinity	Zenia (4012324)	CCH, Jan 2017 (UC87678)	26-Jun-1893				
1	Ketten-Pum Valley	Trinity	Zenia (4012324)	CCH, Jan 2017 (UC87679)	26-Jun-1893				
2	JACK RABBIT VALLEY, ALONG SWAYBACK RIDGE 4-WHEEL DRIVE ROAD 1 MI S OF JUNCTION WITH FOREST SERVICE ROAD.	Humboldt	Dinsmore (4012345)	CNDDB, May 2017 (EO 2)	10-Jun-1980	SITE BASED ON A 1980 NELSON COLLECTION. NEEDS FIELDWORK.	ROADSIDE SITE, POTENTIAL TRAIL MAINTEN-ANCE THREAT.	PVT	4900

Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
2	Jack Rabbit Valley, along Swayback Ridge 4-wheel drive road, 1 mi. S of junction with Forest Service road	Humboldt	Dinsmore (4012345)	CCH, Jan 2017 (HSC81688)	10-Jun-1980				4902
2	Jack Rabbit Valley, along Swayback Ridge 4-wheel drive road, 1 mi. S of junction with Forest Service road	Humboldt	Dinsmore (4012345)	CCH, Jan 2017 (HSC97707)	10-Jun-1980				4902
3	ALONG SWAYBACK RIDGE ROAD, ABOUT 0.75 MILE N OF JACK RABBIT VALLEY.	Humboldt	Dinsmore (4012345)	CNDDB, May 2017 (EO 3)	18-Jun-2004	APPROX 200 INDIVIDUALS OBSERVED IN 2004.	ROADSIDE SITE, POTENTIAL TRAIL MAINTEN-ANCE THREAT.	PVT; Six Rivers NF	4450
3	Along Swayback Ridge Rd., which branches off Forest Service Rd. 1N08, 1/4 mi. past gate	Humboldt	Dinsmore (4012345)	CCH, Jan 2017 (HSC95767)	18-Jun-2004			Six Rivers NF	4452

Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
4	AROUND 0.3-0.6 AIR MILE E OF TWIN LAKES, AND ABOUT 2 AIR MILES NW OF BOARD CAMP MOUNTAIN.	Humboldt	Board Camp Mtn. (4012366)	CNDDB, May 2017 (EO 4)	11-Jun-2013	20 PLANTS IN W POLYGON AND 350 PLANTS IN E POLYGON IN 2013. 1951 TRACY COLLECTION ATTRIBUTED HERE, FROM "TWIN LAKES VICINITY".	TIMBER HARVEST, GRAZING. ALTERNATE ROUTE FOR ROAD WILL BE USED TO AVOID PLANTS.	PVT-Green Diamond Resource Co.	4200
5	ABOUT 1 MILE S OF TWIN LAKES AND 1.5 AIR MILES WNW OF BOARD CAMP MOUNTAIN.	Humboldt	Board Camp Mtn. (4012366)	CNDDB, May 2017 (EO 5)	28-May-2013	N POLYGON: 30 PLANTS SEEN IN 2007, 125+ PLANTS IN 2013. S POLYGON: 10,071+ PLANTS IN 2013. INCLUDES FORMER OCCURENCE #7.	TIMBER HARVEST ACTIVITIES, POTENTIAL FUTURE ROAD AND TRAIL CONSTRUCT-ION.	PVT-Sierra Pacific; Six Rivers NF	4750
5	Near Mad River Buttes	Humboldt	Board Camp Mtn. (4012366)	CCH, Jan 2017 (HSC66280)	28-Jun-1980				4741
5	Near Mad River Buttes	Humboldt	Board Camp Mtn. (4012366)	CCH, Jan 2017 (HSC66281)	28-Jun-1980				4741

Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
6	NW SIDE OF BOARD CAMP MOUNTAIN OFF OF USFS ROAD 04N38.	Humboldt	Board Camp Mtn. (4012366)	CNDDB, May 2017 (EO 6)	22-Jun-2007	TYPE LOCALITY. ABOUT 200 INDIVIDUALS OBSERVED IN 2004. 2007 WITTE COLLECTION ATTRIBUTED HERE FROM "ROAD TO TRI BOARD CAMP, 1/5 MILE AFTER INTERSECTION WITH 4N38."		Six Rivers NF	4860
6	Board Camp Mountain Road off Forest Service Road 49N38, 1 mile from junction with Forest Service Road 1.	Humboldt	Board Camp Mtn. (4012366)	CCH, Jan 2017 (HSC95874)	18-Jun-2004			Six Rivers NF	4862
6	Board Camp Mountain. Road to Tri Board Camp. 1/5 mile after intersection with 4N38.	Humboldt	Board Camp Mtn. (4012366)	CCH, Jan 2017 (HSC97812)	22-Jun-2007			Six Rivers NF	4875
6	Board Camp Mountain Road, off Forest Service Road 49N38, 1 mile from junction with Forest Service Road 1.	Humboldt	Board Camp Mtn. (4012366)	CCH, Jan 2017 (NY688658)	18-Jun-2004			Six Rivers NF	4859

Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
6	Six Rivers NF	Humboldt	Board Camp Mtn. (4012366)	NRIS, Feb 2017 (0510_ERIMAN_51_CW)	9-Sep-2009	1000 individuals		Six Rivers NF	
7	ABOUT 0.8 AIR MILE NW OF N END BUCK MOUNTAIN, ALONG FOREST ROAD 1N08.	Humboldt	Dinsmore (4012345)	CNDDB, May 2017 (EO 8)	20-Jul-2011	AN ESTIMATED 100 PLANTS SEEN IN 2009, AND 1300 PLANTS IN 2011.	ROAD USAGE.	Six Rivers NF	4400
7	Six Rivers NF	Humboldt	Dinsmore (4012345)	NRIS, Feb 2017 (0510_54_ERMA19_BUK09_INC_JDM01)	25-Jun-2009	100 individuals		Six Rivers NF	
8	1.2 AIR MILES W OF SUMMIT BOARD CAMP MTN, AND 0.7 AIR MILE E OF BUG CREEK BUTTE.	Humboldt	Board Camp Mtn. (4012366)	CNDDB, May 2017 (EO 9)	7-Sep-2010	300 PLANTS ESTIMATED IN 2010.	ATVS, GOPHERS.	Six Rivers NF	4940
8	Board Camp Mtn. Trail;	Humboldt	Board Camp Mtn. (4012366)	NRIS, Feb 2017 (0510_53_ERMA19_INC10_INCJDM507)	7-Sep-2010	300 individuals		Six Rivers NF	

Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
9	ABOUT 1.1 AIR MILES NNW OF BOARD CAMP MOUNTAIN, JUST E OF FOREST ROAD 4N38.	Humboldt	Board Camp Mtn. (4012366)	CNDDB, May 2017 (EO 10)	29-May-2013	215 PLANTS SEEN IN 2013. 2007 TAYLOR COLLECTION AND PHOTOS FROM "1.1 AIR MI NW OF BOARD CAMP MOUNTAIN, ALONG FOREST ROAD 4N38, GROWING ON FILL ON THE EDGE OF THE ROAD" ATTRIBUTED HERE.	SURROUND-ING LAND USE IS TIMBERLAND. FORESTER AWARE OF PLANTS AND WILL IMPLEMENT PLANT PROTECTION BUFFER. ROAD WORK.	PVT-Sierra Pacific	4482
9	1.1 air miles NW of Board Camp Mountain, headwaters Boulder Creek, along Forest Road 4N38	Humboldt	Board Camp Mtn. (4012366)	CCH, Jan 2017 (JEPS109871)	11-Jul-2007				4501
10	ABOUT 1.9 AIR MILES NW OF BOARD CAMP MOUNTAIN AND S OF BOULDER CREEK.	Humboldt	Board Camp Mtn. (4012366)	CNDDB, May 2017 (EO 11)	30-Jul-2013	80 PLANTS SEEN IN 2013. PLANTS MAY HAVE BEEN BROUGHT IN WITH THE ROAD BASE, AS THIS SPECIES WAS NOT OBSERVED DURING 2007 SURVEYS ALONG THIS ROAD BEFORE IT WAS ROCKED.	ROAD USAGE, ALSO SURROUND-ING LAND USE IS TIMBERLAND.	PVT-Sierra Pacific	4330

Rec. #	Locality	County	Quad	Reference (Source)	Date Last Observed	Population Info	Threats	Land Manager	Elev. (ft.)
11	NW slope Buck Mountain	Humboldt	Dinsmore (4012345)	CCH, Jan 2017 (UC175167)	30-Jul-1908			Unknown	2500

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)	CNDDB EOs	Non-CNDDB 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:	-	-	-	-	-	-	-	0
Los Padres:	-	-	-	-	-	-	-	0
Mendocino:	-	-	-	-	-	-	-	0
Modoc:	-	-	-	-	-	-	-	0
Plumas:	-	-	-	-	-	-	-	0
San Bernardino:	-	-	-	-	-	-	-	0
Sequoia:	-	-	-	-	-	-	-	0
Shasta-Trinity:	-	-	-	-	-	-	-	0
Sierra:	-	-	-	-	-	-	-	0
Six Rivers:	1,3,5,6,7, 8	6	-	4	2	28-May-2013	4	6
Stanislaus:	-	-	-	-	-	-	-	0
Tahoe:	-	-	-	-	-	-	-	0
Totals:	N/A	6	0	4	2	N/A	4	6

Demographic and Population Trends: Total number of occurrences for this taxon were estimated using GIS tools and methods described by Green and Sims (2018). Almost three-quarters of all occurrences (8/11; ~73%) have population count and size estimate information. These eight occurrences range in estimated size between 80 and roughly 10,000 plants. A total of five occurrences have between 80 and 350 plants, with the remaining three occurrences having an estimated 1,000 plants or more (CNDDB 2017; NRIS 2017; CCH 2017). Three of ten (3/10; 30%) CNDDB occurrences are listed in Good (B) condition. A single occurrence (EO 11) is listed in Fair (C) condition, whereas the remainder of occurrences are in Unknown (U) condition (CNDDB 2018).

Life History: *Erigeron maniopotamicus* is 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). 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, sulphers, 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 (*Arhyssus, 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 with, 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). *Erigeron maniopotamicus* is a member of the *E. eatonii* alliance (incl. *E. eatonii* var. *eatonii*, *E. eatonii* var. *plantagineus*, *E. eatonii* var. *sonnei, E. eatonii* var. *nevadincola, E. robustior, E. jonesii*, and *E. lassenianus*). Taxa within this alliance are all taprooted with a branched caudex, are not caespitose, are ascending to decumbent, sometimes purplish at the base, have basal and cauline leaves with one to three nerves, and often have multiple heads on each plant. Varieties of *E. eatonii* are known to intergrade at zones of contact. Intermediates between species in this alliance are unknown. *Erigeron maniopotamicus* occurs within the distribution of *E. robustior*. The paucity of hybrids, and affinity to distinct habitats suggest these two taxa are divergent and operate under the influence of untold reproductive barriers (Nesom and Nelson 2004).

Habitat: Plants are often found on barrens with limited vegetation among tan-colored, rocky, and non-serpentinized soils distinct from typical substrate found near occurrences. These sites are called “barrens” due to the limited vegetation and the stunted nature of surrounding mixed conifer forests (Nesom and Nelson 2004). Plants are also associated with meadows and seeps (open and dry) and, in general, lower montane coniferous forests. There are reports of plants growing alongside rocky roads, OHV trails, open slopes, grassland openings, and on gravelly and rocky clearings near ridgelines. Plants associated with these occurrences are found growing near *Calocedrus decurrens, Calochortus tolmiei, Castilleja affinis, Collinsia parviflora, Drymocallis glandulosa, Equisetum arvense, Eriophyllum lanatum, Erythronium californicum,*

Hypericum perforatum, Juncus sp., *Notholithocarpus densiflorus, Polygonum polygaloides, Pseudotsuga menziesii, Quercus garryana, Toxicoscordion fremontii, Viola hallii*, and *Wyethia longicaulis* (CNDDB 2018).

Habitat Status or Trend: Ranching, cattle grazing, and timber harvesting activity on private land has significantly changed the quality of habitat of a known site for this plant (NatureServe 2018). The species has a limited distribution with distinct habitat requirements (Nesom and Nelson 2004). Ecological niche models indicate that range shifts associated with a change in climate and land use patterns are dependent upon the future availability of suitable habitat. The ability of a species to find suitable habitat under changing conditions is influenced by habitat fragmentation, availability, and overall connectivity of sites (Wiens et al. 2009).

Capacity for the Species to Disperse: The capacity for *E. maniopotamicus* 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 half (5/10; 50%) of all CNDDB occurrences. Road and trail construction, OHV use, and grazing activities are also documented threats to *E. maniopotamicus* (CNDDB 2018). Direct reports indicate that fire suppression, timber harvest, grazing, and unmanaged motor vehicle use threaten plants at known occurrences (O'Connell et al. pers. comm. 2017).

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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.