SPECIES: Scientific [common]	***Erigeron humilis* [Low fleabane]**
Forest:	Bridger-Teton National Forest
Forest Reviewer:	**R.Lehman, K. Clause**
Date of Review:	**5/20/20; 2/26/21; 3/25/25**
Forest concurrence (or recommendation if new) for inclusion of species on list of potential SCC: (Enter Yes or No)	**No**

FOREST REVIEW RESULTS:

1. The Forest concurs or recommends the species for inclusion on the list of potential SCC:
   Yes___ No_X__

2. Rationale for not concurring is based on (check all that apply):
   Species is not native to the plan area _____
   Species is not known to occur in the plan area _____
   Species persistence in the plan area is not of substantial concern ___X____

FOREST REVIEW INFORMATION:

1. Is the Species Native to the Plan Area? Yes_X__ No___

   If no, provide explanation and stop assessment.

2. Is the Species Known to Occur within the Planning Area? Yes_X__ No____

   If no, stop assessment.

Table 1. All Known Occurrences, Years, and Frequency within the Planning Area

Year Observed	Number of Individuals	Location of Observations (USFS District, Town, River, Road Intersection, HUC etc.)	Habitat Description	Source of Information
8/4/1998	Unknown	Wyoming, Sublette County: Gros Ventre Range: base of Triangle Peak above southeast shore of Brewster Lake, ca 11.5 mi NE of Bondurant. 43.371° N, 110.2735° W; uncertainty 0.25 mi.	Moist ledge below steep talus slope; area wet from snow melt; grassy, wet tundra on thin clay soil on bench; vegetative cover 85%; dominated by *Salix rotundifolia, Kobresia myosuroides, and Festuca brachyphylla*. Phenology: flowering. Elev. 10000 ft.	Walter Fertig, #18485; EO #9 (WYNDD GIS 2019, Rocky Mountain Herbarium 2020, SEINet 2020).
8/13/1990		Wyoming, Sublette County: West Slope Wind River Range:	Granite cliff faces and talus fields on south face. Associated with *Draba*	Walter Fertig, #6041; EO #1 (WYNDD GIS

		Fremont Peak, ca 22 air NE of Pinedale. 43.1158° N, 109.6131° W	*crassa, Papaver kluanense*. Elev. 11400-13360 ft.	2019, Rocky Mountain Herbarium 2020, SEINet 2020).
7/22/2005		**Outside BTNF within 1.5 mile east:** Wyoming, Fremont County: East Slope Wind River Range and Vicinity: headwaters of Simpson Lake to north end Simpson Lake, ca 13 air mi SW of Dubois. 43.4045° N, 109.747° W to 43.4325° N, 109.7402° W; GPS Reading	Riparian areas along lake margin. Phenology: flowering. Elev. 9680-9770 ft.	Rob Massatti, #2918; EO #13 (WYNDD GIS 2019, Rocky Mountain Herbarium 2020, SEINet 2020).
7/21/2005		**Outside/on eastern boundary of BTNF:** Wyoming, Fremont County: East Slope Wind River Range and Vicinity: Shale Mountain and northerly slope, ca 10 air mi SSW of Dubois. 43.3989° N, 109.6878° W to 43.3798° N, 109.6959° W to 43.3743° N, 109.7088° W; GPS Reading	Rocky alpine meadow and riparian areas. Phenology: flowering. Elev. 11660-12430 ft.	Rob Massatti, 2829; EO #12 (WYNDD GIS 2019, Rocky Mountain Herbarium 2020, SEINet 2020).

a. Are all Species Occurrences Only Accidental or Transient?

Yes___ No__X_

If yes, document source for determination and stop assessment.

b. For species with known occurrences on the Forest since 1990, based on the number of observations and/or year of last observation, can the species be presumed to be established or becoming established in the plan area?

Yes_X__ No__

If no, provide explanation and stop assessment

c. For species with known occurrences on the Forest predating 1990, does the weight of evidence suggest the species still occurs in the plan area?

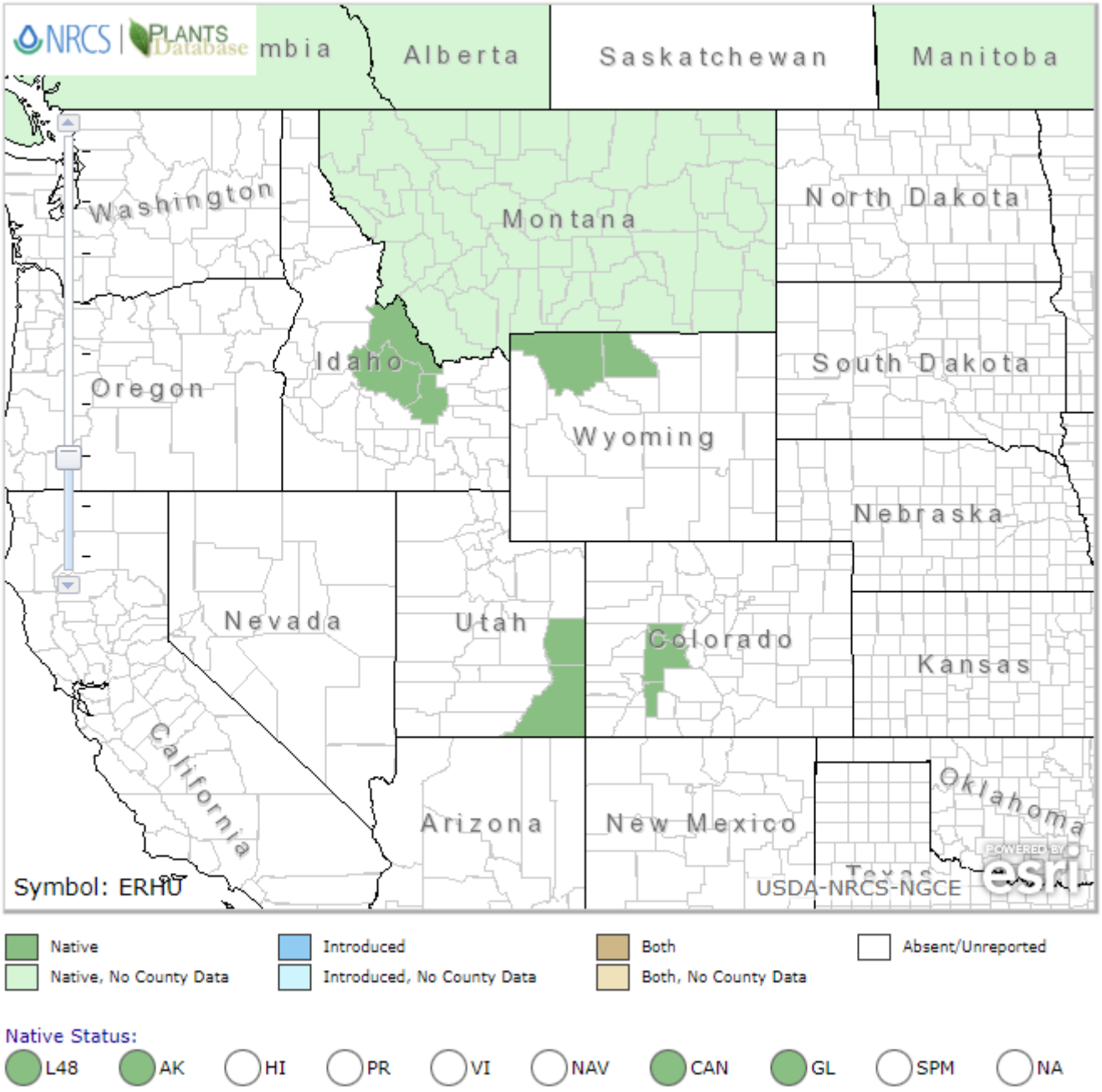
Yes___ No___

Provide explanation for determination

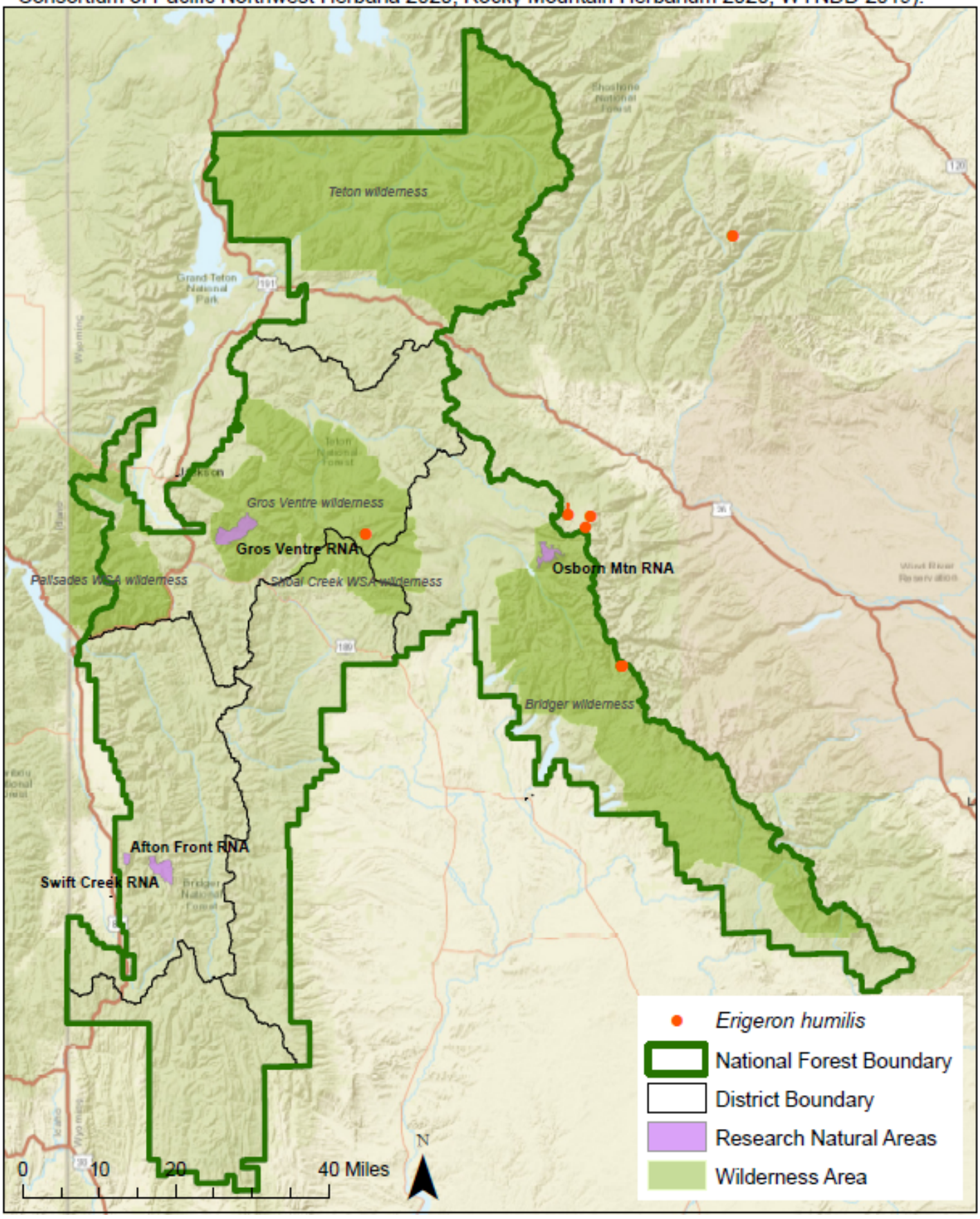
N/A–Occurrences have been documented since 1990.

If determination is no, stop assessment

Map 1, *Erigeron humilis* range in Wyoming and surrounding states (NRCS 2020).



Map 2, *E. humilis* occurrences in Bridger-Teton National Forest vicinity (SEINet 2020; Consortium of Pacific Northwest Herbaria 2020; Rocky Mountain Herbarium 2020, WYNDD 2019).



3. Is There Substantial Concern for the Species' Capability to persist Over the Long-term in the Plan Area Based on Best Available Scientific Information?

Table 2. Status summary based on existing conservation assessments

Entity	Status/Rank (include definition)
NatureServe Global Status	**G5— Secure** *Common; widespread and abundant.*
NatureServe State Status	**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.*
WYNDD	**S2— Imperiled/ Species of Concern** *Species vulnerable to extirpation at the global or state level due to:* *a. their rarity (e.g., restricted distribution, small population size, low population density)* *b. inherent vulnerability (e.g., specialized habitat requirements, restrictive life history)* *c. threats (e.g., significant loss of habitat, sensitivity to disturbances)* (Wyoming Natural Diversity Database - Species of Concern)
USDA Forest Service	Not Region 4 Sensitive
USDOI FWS	Not listed
USDOI BLM	Not listed
IUCN	Not listed

Sources: WYNDD 2020; Heidel 2018; USDA Forest Service Regions 2 and 4 Sensitive Species Lists; NatureServe 2020

Table 3. Status summary based on best available scientific information.

Criteria	Rationale
Distribution on the Bridger-Teton National Forest	Only two known occurrences are located in designated wilderness in central and central-eastern portions of the national forest (**Table 1, Map 2**). There are two occurrences just outside the eastern boundary in Shoshone National Forest so there is potential for dispersal or unknown occurrences in BTNF where suitable habitat occurs (**Map 3**). More study is needed. The species may be at the edge of its range on the BTNF.
Distribution outside the Bridger-Teton National Forest	Occurs from Alaska to Greenland, south across much of Canada from British Columbia to Labrador, and south in the Rocky Mountains from Idaho and Montana, to Colorado and Utah (Nesom 2006). In Wyoming, known from the Absaroka, Beartooth, Big Horn, Gros Ventre, and Wind River Ranges (Big Horn, Fremont, Park and Sublette counties) (WYNDD 2020, Fertig 2000).
Abundance on the Bridger-Teton National Forest	Known populations are small in number and occupied area. Surveys in 1996 in the Beartooth Mountains reported colonies of 10-25 plants (WYNDD 2020).
Population Trend on the Bridger-Teton National Forest	Presumed to be stable at present, although no trend data are available (WYNDD 2020).
Habitat Trend on the Bridger-Teton National Forest	*Erigeron humilis* occupies arctic and alpine tundra, snowbed slopes, pond and stream margins, boulder ridges in streambeds, heaths, ledges and dry gravelly slopes. Wyoming populations are on montane granite and limestone cliff faces, talus slopes, alpine meadows and tundra, often in mossy, moist microsites (WYNDD 2020). Due to the remoteness of alpine habitats this ecosystem is relatively stable on BTNF (see climate related effects below). Based on the scarcity of occurrences, *Erigeron humilis* is likely sparse and isolated on the BTNF; however, the distribution of potential fen locations suggests that habitat may exist across the Forest, particularly at elevations of 8,000 and 11,000 feet and around the North Fork Silver Creek, Upper Boulder Creek, Upper Pole Creek, and Washakie Creek-East Fork River (Smith and Lemly 2019).
Threats to the Species and its Habitat on the Bridger-Teton National Forest	Immediate threats are inferred to be low due to species' alpine habitat (Fertig 2000, WYNDD 2020). Because alpine vegetation and barren rock mainly occur in designated wilderness, roadless, or remote areas where human interference disturbance is minimal, alpine communities are considered to be relatively stable. However, alpine communities are possibly the ecosystems in the region that are most at risk from the effects of climate change because of their shrinking habitat. According to Intermountain Adaptation Partnership assessments, alpine communities have a high sensitivity to climate change, a low adaptive capacity, and very high vulnerability to climate change (Halofsky, et al. 2018). Climate change is expected to cause increasingly

Criteria	Rationale
	warmer and wetter conditions, with worsening summer drought, and alpine areas may transition from snow-dominated to rain-dominated. An extended growing season is projected to occur in the alpine which can result in interspecific competition for resources, changes in plant community composition and displacement of rare plant populations where they currently occupy specific niches (Halofsky et al. 2018). Alpine systems are dependent on snowfields and gradual snowmelt to maintain moisture for vegetation. Warming temperatures, increased drought, and changes in the depth and persistence of snowpack, surface water flow, and timing of peak runoff are projected to greatly affect alpine habitat in the Intermountain Region (Halofsky et al. 2018). The composition and distribution of alpine ecosystems will be affected by decreasing snowpack. For high-elevation vegetation, climate change may affect seed germination and survival by modifying moisture availability and therefore result in reduced plant success. Specific effects will depend on vulnerability thresholds of the characteristic species and the rate and magnitude of changes over time. Reduced snowpack with warming is likely to cause major changes in alpine plant communities (Halofsky, et al. 2018). Some loss of alpine vegetation communities, especially mesic meadows, attributed to upslope migration of trees and shrubs may occur (Halofsky et al. 2018). Some, subalpine communities may have potential to migrate higher in elevation as a response to changing conditions, but this may be limited by underdeveloped soils at higher altitudes. Furthermore, the rate of climatic change in alpine communities may outpace the ability of species to shift their distribution (Ash et al. 2016; Dirnbock et al. 2011). Other communities may already exist at the highest elevations in the BTNF and, therefore, may have limited upward migration potential. Rare plant populations that may be small, isolated, tied to snowpack abundance and distribution timing changes of spring thaw and fall frost cycles, and/or have limited dispersal capacity, are highly vulnerable to impacts from environmental change including reductions in pollination (Ellstrand and Diane 1993, Halofsky et al. 2018). Changes in temperature and precipitation may lead to greater variability in forb flowering, which could create an asynchronistic effect with native pollinator emergence (Halofsky et al. 2018; Miller-Struttmann et al. 2015), leading to decreased reproduction in native plants. The value of pollinators in natural systems is difficult to quantify, but as pollinators are critical for successful reproduction and seed set for approximately 85% of flowering species globally (Hatfield et al. 2012), this asynchronistic effect may have profound implications. To analyze trends in occupied habitat, aerial imagery and a USFS GIS database of invasive plant populations, historical wildfires, trails, roads, Wilderness Areas, and Research Natural Areas was assessed at each

Criteria	Rationale
	contemporary occurrence on the Forest (USFS GIS 2019, Google Earth Pro 2020). • Walter Fertig, #18485; EO #9: In Gros Ventre Wilderness. No disturbance identified at the location. • Walter Fertig, #6041; EO #1: In Bridger Wilderness. No disturbance identified at the location. Both known occurrences are within designated wilderness therefore management activity threats are minimal.
Life history and demographic characteristics of the species	*Erigeron humilis* is a perennial herb with loose, soft-hairy stems 1-3 cm high. The basal leaves are 1-2.5 cm long and narrowly oblanceolate, while the stem leaves are reduced and linear. The flower heads are solitary with numerous erect, white (sometimes pink) ray flowers 3.5-6 mm long and 0.5-1 mm wide. The involucre and stem are covered with loose, purplish-black hairs with prominent cross-walls. The pappus consists of 20-30 bristles. According to Flora of the Canadian Artic Archipelago habitat includes around the margins of ponds, slopes, along streams (among boulders in stream beds); imperfectly drained moist areas, dry, moderately well-drained areas; gravel, moss; with high organic content, peat; calcareous (most often found in calcareous sites), or non-calcareous (granite), or nitrophilous (sheltered owl perch). In mossy, grassy places, often growing in herbmats below persisting snowbanks. Herbarium label notes indicate that plants grow in fens and heaths, dry gravelly south-facing slopes, and boulder ridges in stream beds (Aiken et al. 2007).
Date: April 3, 2020 Reviewer: J. Remp	

Summary and Recommendations
Species (Scientific and Common Name): *Erigeron humilis*
Erigeron humilis is listed with the state as S2 (imperiled) and G5 (secure) globally and tracked as a species of conservation concern by WYNDD. Wyoming populations are on montane granite and limestone cliff faces, talus slopes, alpine meadows and tundra, often in mossy, moist microsites (WYNDD 2020). Two small (10-25 individuals) occurrences have been documented on the BTNF and both are in designated wilderness areas. These occurrences have had no population trend assessments conducted. Additional surveys and long-term trend monitoring need to be conducted on these occurrences to assess the trend of the populations on the BTNF. Since the occurrences are within wilderness areas and no anthropogenic threats were identified, the concern for the species capability to persist over the long term is primarily related to projected change in the species habitat, especially moist microsites in the alpine zone, due to climate change in combination with the low number of occurrences and individuals. Due to insufficient trend data and low threats, it is not recommended as a Species of Conservation Concern at this time.
Evaluator: Rose Lehman Date: 2/26/2021 Updated: K. Clause 3/25/25

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