

SPECIES: Scientific [common]	<i>Saussurea weberi</i> [Weber's saw-wort]
Forest:	Bridger-Teton National Forest
Forest Reviewer:	Rose Lehman
Date of Review:	3/30/20; 4/7/2021
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 Information¹
1981	Common.	Wyoming, Sublette County: Wind River Range: northeast ridge of Big Sheep Mountain, 30 air mi N of Pinedale, 0.5 mi W of Green River Lakes.	Alpine shaley ridge and steep talus slope on northwest exposure; sparsely vegetated with <i>Penstemon montanus</i> , <i>Parrya nudicaulus</i> , <i>Townsendia incana</i> , and <i>Erigeron leiomeris</i> . Elev. 10750 ft.	Robert Soreng #1705; EO #3 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD GIS 2019)
1990	100-1000 individuals on	Wyoming, Sublette County: West Slope Wind River Range: Big Sheep	Alpine ridge and summit. Elev. 10600-11618 ft. Occurs with <i>Penstemon</i>	Walter Fertig #4616; EO #3 (Rocky Mountain

	summit flats of mountain.	Mountain, ca 29 air mi N of Pinedale.	<i>montanus</i> , <i>Parrya nudicaulis</i> , <i>Townsendia incana</i> , <i>Erigeron leiomerus</i> .	Herbarium 2020; SEINet 2020; WYNDD GIS 2019)
7/23/1990 and 8/9/1990	A few flowering individuals found on rim of west slope of mountain. Estimated 100-1000 plants at west end of mountain.	Wyoming, Sublette County: West Slope Wind River Range: Gypsum Mountain, ca 28 air mi N of Pinedale.	Alpine broken limestone/shale talus slope on W flank of Gypsum Peak. Elev. 10600-11515 ft.	Walter Fertig #5707; EO #3 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD GIS 2019)
8/15/1991	Estimated 200-500 plants. Locally common.	Wyoming, Sublette County: Wind River Mountains: E of lower Green River Lake, crest of limestone ridge S of Mill Creek, N of Clear Creek, just S of highest flat area on crest.	On sparsely vegetated rocky limestone soil and scree with <i>Silene acaulis</i> , <i>Astragalus kentrophyta</i> and <i>Antennaria aromatica</i> . Ridge immediately east of Lower Green River Lake and west of Osborn Mountain. Population extends from below summit to base of summit ridge (above saddle to Peak 10810). Elev. 10950 ft.	Hollis Marriott with Dennis Horning #11403; EO #7 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD GIS 2019)
8/17/1991	Unknown	Wyoming, Sublette County: West Slope Wind River Range: between Valaite Lake W to divide then N to slope of Big Sheep Mountain. West and south slopes of Big Sheep Mountain.	Limestone and sandstone talus slopes from timberline to near crest. Talus and boulder slopes. Elev. 10200-11200 ft.	Ronald L. Hartman with Jonathan Hughes #31104; EO #3 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD GIS 2019)
1991	1000 plants at west end of mountain.	Wyoming, Sublette County: West Slope Wind River Range: north slope of Gypsum Mountain; West flank of Gypsum Mountain. ca 29 air mi N of Pinedale.	Open canopy limestone-shale crumbly talus on alpine ridge separating two small cirques. Occurs with <i>Erigeron lanatus</i> , <i>Parrya nudicaulis</i> , <i>Senecio fremontii</i> , <i>Senecio amplexans</i> var. <i>holmii</i> , <i>Senecio canus</i> , <i>Hymenoxys grandiflora</i> , <i>Telesonix heucheriformis</i> . Elev. 10000-11200 ft.	Walter Fertig #11497; EO #6 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD GIS 2019)

8/11/1993 And 8/18/1994	Estimated 6000-7000 plants on slope. Largest subpopulation found at west end of mountain and contained ca 1000-1500 plants.	Wyoming, Sublette County: West Slope Wind River Range: West flank of Gypsum Mountain.	Alpine, broken, limestone/shale talus slope. In bud and vegetative. Locally abundant, often one of the dominant species within its microhabitat.	Walter Fertig EO # 6 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD GIS 2019)
8/10/1993	Estimated 500 plants.	Wyoming, Sublette County: West Slope Wind River Range: ridge on west slope of Osborn Mountain; ca 1 1/4 air mi E of Lower Green River Lake.	Ridge immediately east of Lower Green River Lake and west of Osborn Mountain. Population extends from below summit to base of summit ridge (above saddle to Peak 10810). West facing barren limestone talus slopes below summit ridge; with <i>Parrya</i> , <i>Saussurea</i> , <i>Hymenoxys grandiflora</i> , and <i>Senecio amplexans</i> . Elev. 10800 ft.	Walter Fertig with Charmaine and Larry Refsdal #14324; EO #7 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD GIS 2019)
8/20/1994	Widely scattered on northeastern ridge of mountain, often in patches of 1-5 individuals.	Wyoming, Sublette County: West Slope Wind River Range: ridge on east slope of Big Sheep Mountain, 3/4-1 mi W of Lower Green River Lake, ca 29 air mi N of Pinedale. 43.2825° N, 109.8592° W; uncertainty 1 mi.	West facing limestone-sandstone talus slope from just below timberline upslope to alpine ridge crests; low cover, plants restricted to crevices in bedrock and gravel. Phenology: flowering & fruiting. Elev. 9600 ft. More abundant on upper slopes, but restricted to west face of ridge and patches of Engelmann spruce forest.	Walter Fertig, #15423; EO #3. (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD GIS 2019)
8/16/1994	Extensive subpopulation discovered on west slopes of mountain. Estimated 10000-15000 plants. Locally common with individual patches often containing several	Wyoming, Sublette County: West Slope Wind River Range: west face of Big Sheep Mountain; ca 2 1/4 air mi W of Lower Green River Lake; ca 28 air mi N of Pinedale.	Limestone and sandstone talus slopes from timberline to near crest; alpine community dominated by <i>Parrya nudicaulis</i> , <i>Senecio canus</i> , <i>Trisetum spicatum</i> , and <i>Polemonium</i> . Mostly in fruit, with those in sheltered microhabitats notably taller and leafier. Elev. 10700-11400 ft.	Walter Fertig, #15412; EO #3 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD GIS 2019)

	hundred plants			
1994	Individual patches often small, consisting of as few as 25 plants.	Wyoming, Sublette County: West Slope Wind River Range: south slope of Gypsum Mountain; ca 0.5 mi N of South Fork Gypsum Creek; ca 3/4 mi W of Big Sheep Mountain.	Southeast facing talus slope and bedrock cliffs of gray limestone and pink lime-sandstone at timberline. Some subpopulations with fewer plants than would be expected. Elev. 11200 ft.	Walter Fertig #15418; EO #6 (Rocky Mountain Herbarium 2020; SEINet 2020)
8/16/1994	Scattered over much of the higher ridges and tops.	U.S.A., Wyoming, Teton County: Gros Ventre Area: east slope of Darwin Peak.	Rocky alpine slopes. Dry, rocky alpine slopes. On top of knob at highest point of limestone ridge in sparsely vegetated talus. Elev. 9600-10800 ft.	Ronald L. Hartman with Tom Cramer, #49436; EO #8 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD GIS 2019)
8/16/1994	Scattered over much of the higher ridges and tops.	Wyoming, Teton County: Gros Ventre Area: southeast ridge and summit of Darwin Peak.	Rocky alpine slopes. Dry, rocky alpine slopes. On top of knob at highest point of limestone ridge in sparsely vegetated talus. Elev. 11000-11647 ft.	Ronald L. Hartman with Tom Cramer, #49502; EO #8 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD GIS 2019)
1994	Unknown	Wyoming, Sublette County: West Slope Wind River Range: ridge on east slope of Big Sheep Mountain, 3/4-1 mi W of Lower Green River Lake, ca 29 air mi N of Pinedale.	West facing limestone-sandstone talus slope from just below timberline upslope to alpine ridge crests; low cover, plants restricted to crevices in bedrock and gravel. Elev. 9600 ft.	Ronald L. Hartman #15423 (Rocky Mountain Herbarium 2020; SEINet 2020)
1998	Unknown	U.S.A., Wyoming, Teton County: Gros Ventre Range: Darwin Peak, southeast ridge and summit, and east slope, ca 1.5 mi N of Brewster Lake.	On top of knob at highest point of limestone ridge in sparsely vegetated talus with <i>Potentilla ovina</i> , <i>Phlox pulvinata</i> , and <i>Senecio canus</i> . Soil dry, rocky. Elev. 11400 ft.	Laura Welp, 7908; EO #8 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD GIS 2019)
8/27/2016	Unknown	Wyoming, Sublette County: West Slope Wind River Range: Summit flats of Big Sheep Mountain.	Alpine ridge and summit. In flower and fruit.	Eva Crane EO #3 (WYNDD GIS 2019)

¹The Consortium of Pacific Northwest Herbaria (Consortium of Pacific Northwest Herbaria 2020) was also searched, and no additional occurrences on the Bridger-Teton National Forest were found.

- 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?

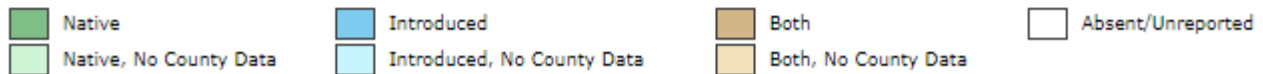
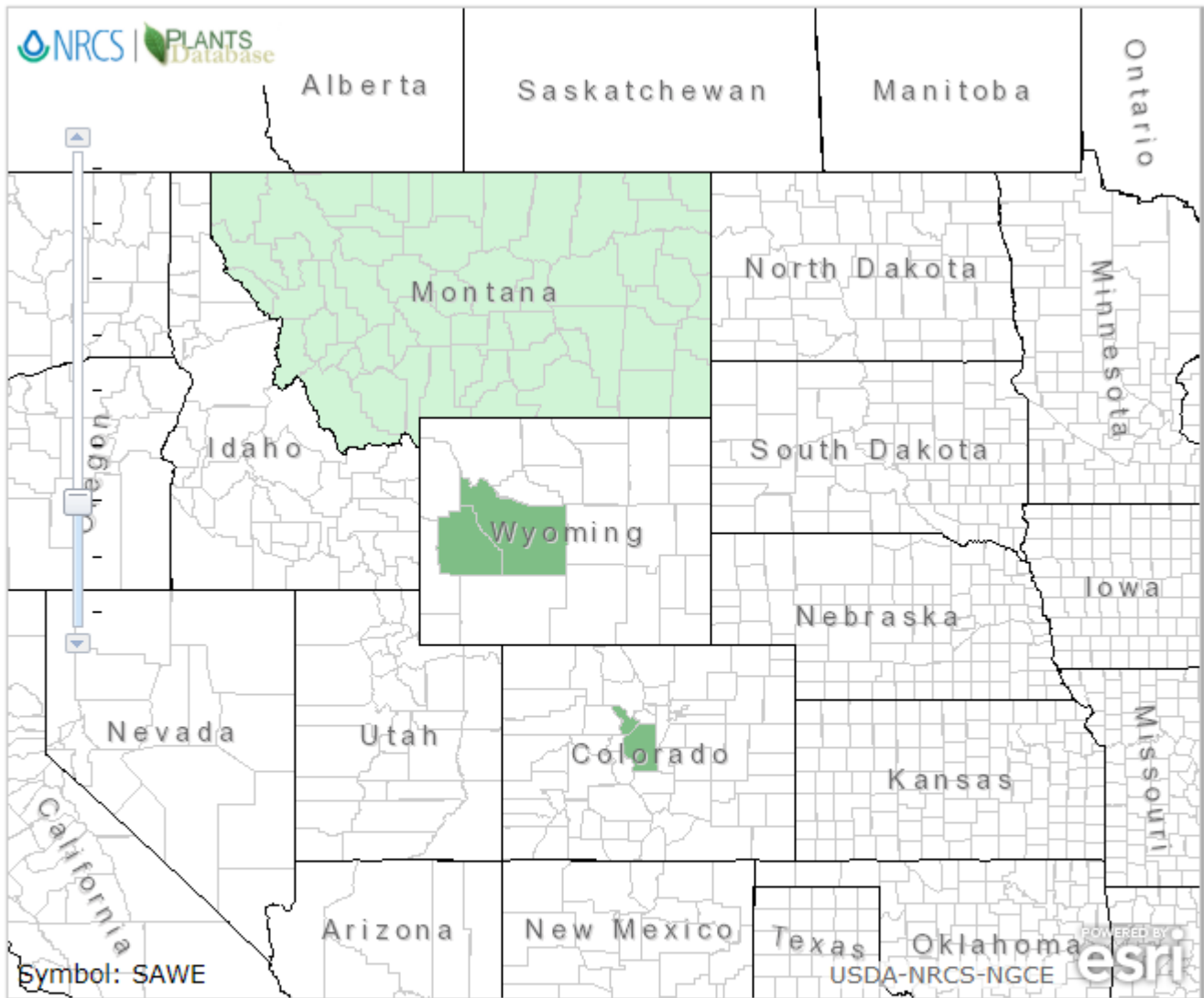
Yes___ No___

Provide explanation for determination

N/A—Occurrences have been documented since 1990.

If determination is no, stop assessment

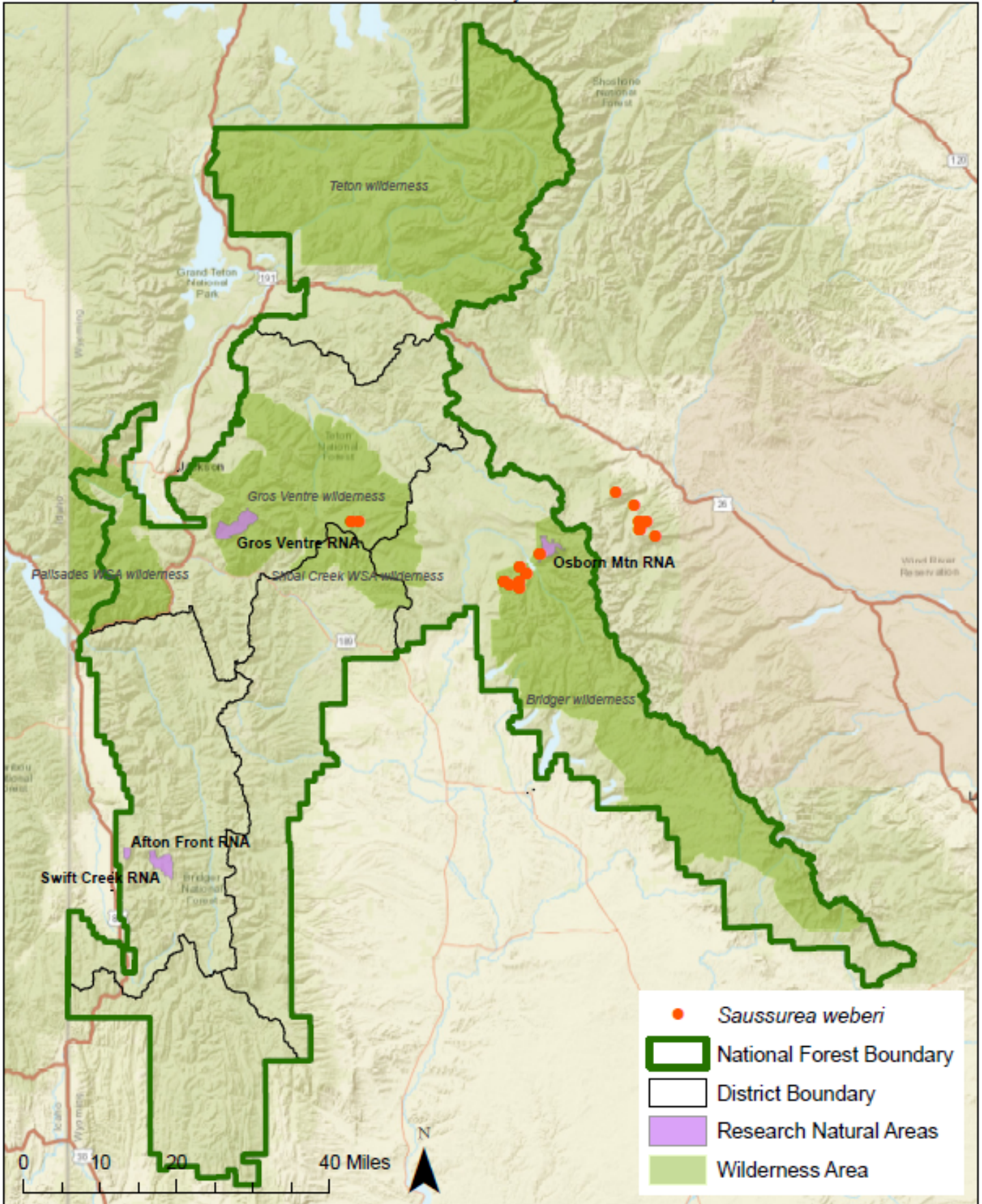
Map 1, *Saussurea weberi* range in Wyoming and surrounding states (NRCS 2020).



Native Status:



Map 2. *S. weberi* occurrences in Bridger-Teton National Forest vicinity (SEINet 2020; Consortium of Pacific Northwest Herbaria 2020; Rocky Mountain Herbarium 2020).



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	<p>G2G3— Imperiled/Vulnerable</p> <p><i>At high risk of extirpation due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.</i></p>
NatureServe State Status	<p>S2—Imperiled</p> <p><i>At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.</i></p>
WYNDD	<p>Plant Species of Concern</p> <p>G2G3/S2</p> <p><i>Species vulnerable to extirpation at the global or state level due to:</i></p> <ul style="list-style-type: none"> <i>a. their rarity (e.g., restricted distribution, small population size, low population density)</i> <i>b. inherent vulnerability (e.g., specialized habitat requirements, restrictive life history)</i> <i>c. threats (e.g., significant loss of habitat, sensitivity to disturbances)</i> <p>(Wyoming Natural Diversity Database - Species of Concern)</p>
USDA Forest Service	Region 4 Sensitive
USDOI FWS	Not listed
USDOI BLM	Not listed
IUCN	Not listed

Sources: WYNDD 2020a; 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	There are 6 known <i>Saussurea weberi</i> occurrences on Bridger-Teton National Forest, (WYNDD 2020; WYNDD GIS 2019). Most of the occurrences were in rocky alpine areas in the central to central–west portion of the forest in Bridger Wilderness (Table 1, Map 2).
Distribution outside the Bridger-Teton National Forest	<i>Saussurea weberi</i> is thought to have a naturally limited range (Glisson 2004). This species is a regional endemic of southwest Montana, northwest Wyoming, and central Colorado. In Wyoming, Weber's saw-wort is restricted to the Gros Ventre and northern Wind River ranges in Sublette, Fremont, and Teton counties (WYNDD 2020b).
Abundance on the Bridger-Teton National Forest	<p>Populations often have thousands to tens of thousands of individuals, but are restricted to small areas of suitable habitat in the alpine (WYNDD 2020b). Several occurrences have been revisited in the mid-1990s with population estimates ranging from small patches with 1 to 5 individuals to large populations with approximately 10,000 to 15,000 plants estimated (Table 1).</p> <p>A review of <i>S. weberi</i> is provided in Rare Species and Riparian Vegetation of the Snake River Basin in Wyoming (Jones et al. 2001), and new occurrences were found in the following survey Sensitive plant surveys and status of rare plant species on Bridger-Teton National Forest, 1997-1998 (Fertig 1999)</p> <p>Other surveys and habitat assessments have not identified this species on Bridger-Teton National Forest, including:</p> <ul style="list-style-type: none"> • Afton Front Research Natural Area Bridger-Teton National Forest (Fertig and Jones 1994a) • Horse Creek Research Natural Area Bridger-Teton National Forest (Fertig and Jones 1994b) – however, suitable habitat for <i>S. weberi</i> may occur on the RNA and future surveys should be conducted • Swift Creek Research Natural Area Bridger-Teton National Forest (Fertig and Jones 1994c) • Survey for <i>Stephanomeria fluminea</i> on the Bridger-Teton National Forest (Markow 2004) • Wyoming Plant Species of Concern on Caribou-Targhee National Forest: 2007 Survey Results Teton and Lincoln counties, Wyoming (Mancuso and Heidel 2008) • A Floristic Inventory of Grand Teton National Park, Pinyon Peak Highlands, and Vicinity, Wyoming U.S.A (Kesonie and Hartman 2011) • Blackrock Creek Wild and Scenic River Botany Survey (Johnson 2011) • Sensitive and rare plant species inventory in the Salt River and Wyoming Ranges, Bridger-Teton National Forest (Heidel 2012)

Criteria	Rationale
	<ul style="list-style-type: none"> • Teton to Snake Fuels Management Project Botany Report and Biological Evaluation (Englebert 2013) • Botany inventories in select fens of the Caribou-Targhee and Bridger-Teton National Forests (Heidel 2019)
Population Trend on the Bridger-Teton National Forest	Trend data are lacking, but populations are assumed to be stable (WYNDD 2020b).
Habitat Trend on the Bridger-Teton National Forest	<p><i>Saussurea weberi</i> occurs on rocky, exposed subalpine to alpine limestone slopes, talus and ridges. Wyoming populations are on alpine talus slopes, gravel fellfields, scree and turf, usually on limestone (WYNDD 2020b).</p> <p>To analyze trends in habitat, aerial imagery and a USFS GIS database of existing grazing allotments, invasive plant populations, historical wildfires, trails, roads, Wilderness Areas, and Research Natural Areas (RNAs) was assessed at each occurrence (USFS GIS 2019, Google Earth Pro 2020). The following summarizes identified disturbances for each occurrence in Bridger-Teton National Forest:</p> <p>All occurrences within Bridger-Teton National Forest are on designated wilderness areas (Gros Ventre or Bridger). These high-altitude communities receive minimal disturbance from forest management activities including recreation, motorized vehicle travel, and vegetation treatments. Additionally, all occurrences appear to be in remote areas, away from motorized roads, which further confirms the low potential for human effects. Several occurrences are somewhat near (within ~1 mi) non-motorized trails, which may cause a slight increase in human presence, but because the occurrences are in remote, alpine locations, they likely seldom see human visitors.</p> <p>Only one occurrence (Fertig #4616) is within an active grazing allotment, and this population could be subject to impacts from livestock such as trampling and habitat erosion. One occurrence (Marriott, 11403) is within the perimeter of the Natural Bridge Fire, a 1719-acre wildfire that occurred in 1988. However, since the occurrence was discovered several years after the fire in 1991, the disturbance did not extirpate the population, and it is unlikely that a fire would greatly alter the barren, rocky areas where the species occurs. None of the mapped occurrences are in close proximity (within 1 mi) of non-native plant invasions, so competition with invasive plants is not considered a threat.</p> <p>The above analysis suggests that habitat for has likely experienced low effects from natural and anthropogenic disturbances.</p>

Criteria	Rationale
Threats to the Species and its Habitat on the Bridger-Teton National Forest	<p>Immediate threats are inferred to be low as populations occurs in relatively inaccessible alpine areas with no obvious disturbances aside from hikers (WYNDD 2020b). Alpine communities on the BTNF may be affected by recreation and climate change effects. Warming effects may change the distribution and establishment of alpine species such as <i>S.weberi</i>. 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 (IAP) 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).The length and depth of snow cover, which are strongly correlated with mean temperature and precipitation, are key factors controlling alpine ecosystems. Snow cover provides frost protection for alpine plants in the winter, as well as the water supply in spring. 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). The composition and distribution of alpine ecosystems will be affected by decreasing snowpack, altering plant vigor and regeneration. Specific effects will depend on vulnerability thresholds of diverse species and the rate and magnitude of changes over time. Some species may be able to persist or migrate to suitable habitat, but the lower extent of some communities will be compromised by tree establishment (Halofsky et al. 2018).</p>
Life history and demographic characteristics of the species	<p><i>Saussurea weberi</i> is a perennial herb in the Asteraceae family (WYNDD 2020b). It is probable that <i>S. weberi</i> is rhizomatous, as it most often occurs in clusters. The presence of a well-developed, woody rootstock suggests it is fairly long-lived. As an alpine species, <i>S. weberi</i> must complete its reproductive cycle during the brief growing season, and in Wyoming, flowering and fruiting typically occur during July through August. The presence of a well-developed pappus suggests seed material is readily dispersed via wind, and the species is reported to be insect pollinated and an obligate out-crosser (Glisson 2004).</p>
Date: March 5, 2020 Reviewer: L. Chipman	

Summary and Recommendations

Species (Scientific and Common Name): *Saussurea weberi* (Weber's saw-wort)

Saussurea weberi has a conservation ranking of G2G3 S2. This species is a regional endemic of southwest Montana, northwest Wyoming, and central Colorado. In Wyoming, Weber's saw-wort is restricted to the Gros Ventre and northern Wind River ranges. There are 6 known *Saussurea weberi* occurrences on Bridger-Teton National Forest. It occurs in subalpine to alpine areas on talus slopes, gravel fellfields, scree and turf, usually in association with limestone (WYNDD 2020b).

All occurrences within Bridger-Teton National Forest are on designated wilderness areas and therefore removed from most management activity. One occurrence is within an active grazing unit and may experience disturbance from trampling, erosion, or herbivory. It is unlikely that a fire would greatly alter the barren, rocky areas where the species occurs. Immediate threats further reduced as populations occur in relatively inaccessible alpine areas with no obvious disturbances aside from hikers (WYNDD 2020b). Alpine communities on the BTNF may be susceptible to an increase in drought stress and competition because of climate change effects. Given the distribution and threats associated with this species, particularly wilderness protection and limited exposure to grazing allotments, it is not recommended that it be included as a species of conservation concern.

Evaluator: Jessica Irwin & Rose Lehman Date: 04/2021;

References

- Consortium of Pacific Northwest Herbaria. 2019. Specimen data search. Available at: <http://pnwherbaria.org>.
- Fertig, W. and Jones, G.P. 1994a. Establishment Record for Afton Front Research Natural Area within Bridger-Teton National Forest, Teton County, Wyoming. Prepared for the U.S. Forest Service.
- Fertig, W. and Jones, G.P. 1994b. Establishment Record for Horse Creek Research Natural Area within Bridger-Teton National Forest, Teton County, Wyoming. Prepared for the U.S. Forest Service.
- Fertig, W. and Jones, G.P. 1994c. Establishment Record for Swift Creek Research Natural Area within Bridger-Teton National Forest, Teton County, Wyoming. Prepared for the U.S. Forest Service.
- Fertig, W. 1999. Sensitive plant surveys and status of rare plant species on Bridger-Teton National Forest, 1997-1998. Report prepared by the Wyoming Natural Diversity Database, Laramie, Wyoming.
- Fertig, W. 2000. Status of Plant Species of Special Concern in US Forest Service Region 4 in Wyoming. Prepared for the U.S. Forest Service, by the Wyoming Natural Diversity Database, University of Wyoming. Laramie, WY.
- Glisson, B. (2004). *Saussurea weberi* Hultén (Weber's saw-wort): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available:

<http://www.fs.fed.us/r2/projects/scp/assessments/saussureaweberi.pdf>

Google Earth Pro, 2020. Aerial photo and mapping analysis. Software version 7.3.2.5776 (64-bit).

Heidel, B. 2012. Sensitive and rare plant species inventory in the Salt River and Wyoming Ranges, Bridger-Teton National Forest. Wyoming Natural Diversity Database. Laramie, WY.

Jones, G.P., R.S. Smith, W.F. Fertig, D.A. Keinath, M.L. Neighbours, L.A. Welp and G.P. Beauvais. 2001. Rare Species and Riparian Vegetation of the Snake River Basin in Wyoming. Prepared for the U.S. Bureau of Reclamation, by the Wyoming Natural Diversity Database, University of Wyoming. Laramie, WY.

Mancuso, M. and B. Heidel. 2008. Wyoming Plant Species of Concern on Caribou-Targhee National Forest: 2007 Survey Results Teton and Lincoln counties, Wyoming. Prepared for Caribou-Targhee National Forest by Wyoming Natural Diversity Database, Laramie, WY.

NatureServe. 2020. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Internet website: <http://explorer.natureserve.org>.

Rocky Mountain Herbarium Specimen Database. 2020 University of Wyoming, Department of Botany. Laramie, WY. Internet website: <http://rmh.uwyo.edu/data/search.php>. Accessed on January 21, 2020.

SEINet. 2020. SEINet data portal. Available at: <http://swbiodiversity.org/seinet/collections/index.php>.

USDA, National Resources Conservation Service (NRCS). NRCS. 2020. The PLANTS Database. Available at <http://plants.usda.gov>. National Plant Data Team, Greensboro, NC 27401-4901 USA.

Wyoming Natural Diversity Database (WYNND). 2020a. Wyoming Natural Diversity Database; Data Explorer. Laramie, WY: University of Wyoming.

WYNND 2020b. *Saussurea weberi* - Weber's saw-wort. Wyoming Field Guide. Laramie, WY: University of Wyoming. Retrieved on 1/29/2020, from <http://fieldguide.wyndd.org/>