

SPECIES: Scientific [common]	<i>Draba paysonii</i> var. <i>paysonii</i> [Payson's whitlow-grass]
Forest:	Bridger-Teton National Forest
Forest Reviewer:	R.Lehman, K. Clause, Trevor Bloom
Date of Review:	5/6/20; 3/27/25
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
8/24/1978	Unknown	U.S.A., Wyoming, Lincoln County: Wyoming Range: south side of Wyoming Peak. 42.6002° N, 110.616° W; uncertainty 1 mi.	Bare rock talus slope, sandstone. Phenology: fruiting. Elev. 11100 ft.	Leila M. Shultz, #2980 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD 2019)
7/23/1987	Unknown	U.S.A., Wyoming, Sublette County: West Slope Wind River Range: east-central part of Osborn Mountain;	Alpine turf-meadow with ca 25% cover of rocks, with <i>Geum rossii</i> , <i>Silene acaulis</i> , and <i>Festuca ovina</i> .	J. S. Tuhy, #3419 (Rocky Mountain Herbarium

		ca 4 mi ENE of Green River Lakes Campground. 43.334° N, 109.7849° W; uncertainty 0.5 mi.	Phenology: fruiting. Elev. 11880 ft.	2020; SEINet 2020; WYNDD 2019)
7/5/1991	Unknown	U.S.A., Wyoming, Lincoln County: Wyoming Range: Greys River Drainage: Wyoming Peak, ca 14.8 air mi E Smoot; ca 17.5 air mi SE of Afton. 42.5995° N, 110.6181° W	Rocky tundra of swale on westerly facing slope with <i>Draba incerta</i> , <i>Castilleja pulchella</i> , and <i>Anemone tetonensis</i> . Phenology: flowering. Elev. 10975 ft.	Orval Harrison, 614. (Rocky Mountain Herbarium 2020; SEINet 2020)
8/14/1992	Unknown	U.S.A., Wyoming. Middle and northern peaks of Triple Peak, ca 26 air miles southwest of Daniel Junction. 248243.083778, 403742.74587	Grassy slopes and calcareous outcrops.	Hartman #35665 (WYNDD 2019)
8/10/1993	Unknown	U.S.A., 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. 43.3196° N, 109.8247° W; uncertainty 1 mi.	West-facing, barren limestone talus slopes below summit ridge; with <i>Parrya</i> , <i>Saussurea</i> , <i>Hymenoxys grandiflora</i> , and <i>Senecio amplexens</i> . Elev. 10800 ft. Phenology: fruiting.	Walter Fertig, 14322 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD 2019)
8/15/1993	Unknown	U.S.A., Wyoming, Eastern ridge of Peak 10463 northwest of Mount Darby. 246554.296465, 376031.206685	Gravelly, rocky slopes with grassy areas.	Hartman 43987 (WYNDD 2019)
8/1/1997	Unknown	U.S.A., Wyoming, Park County: Northern Absaroka Area: Ishawooa Pass and S to 1 mi. 44.2153° N, 109.7851° W	Alpine meadow and rocky areas. Elev. 9900-10100 ft. Phenology: fruiting.	Ronald L. Hartman, 59371 (Rocky Mountain Herbarium 2020; SEINet 2020; WYNDD 2019)
8/3/2006	Unknown	U.S.A., Wyoming, might be on Bridger Teton National Forest . Northeast slope of Union Peak. 315136.707101, 475614.875086	Talus slope	Rob Massatti #8548 (WYNDD 2019)

The Consortium of Pacific Northwest Herbaria was also searched, and no additional occurrences were found (Consortium of Pacific Northwest Herbaria 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?

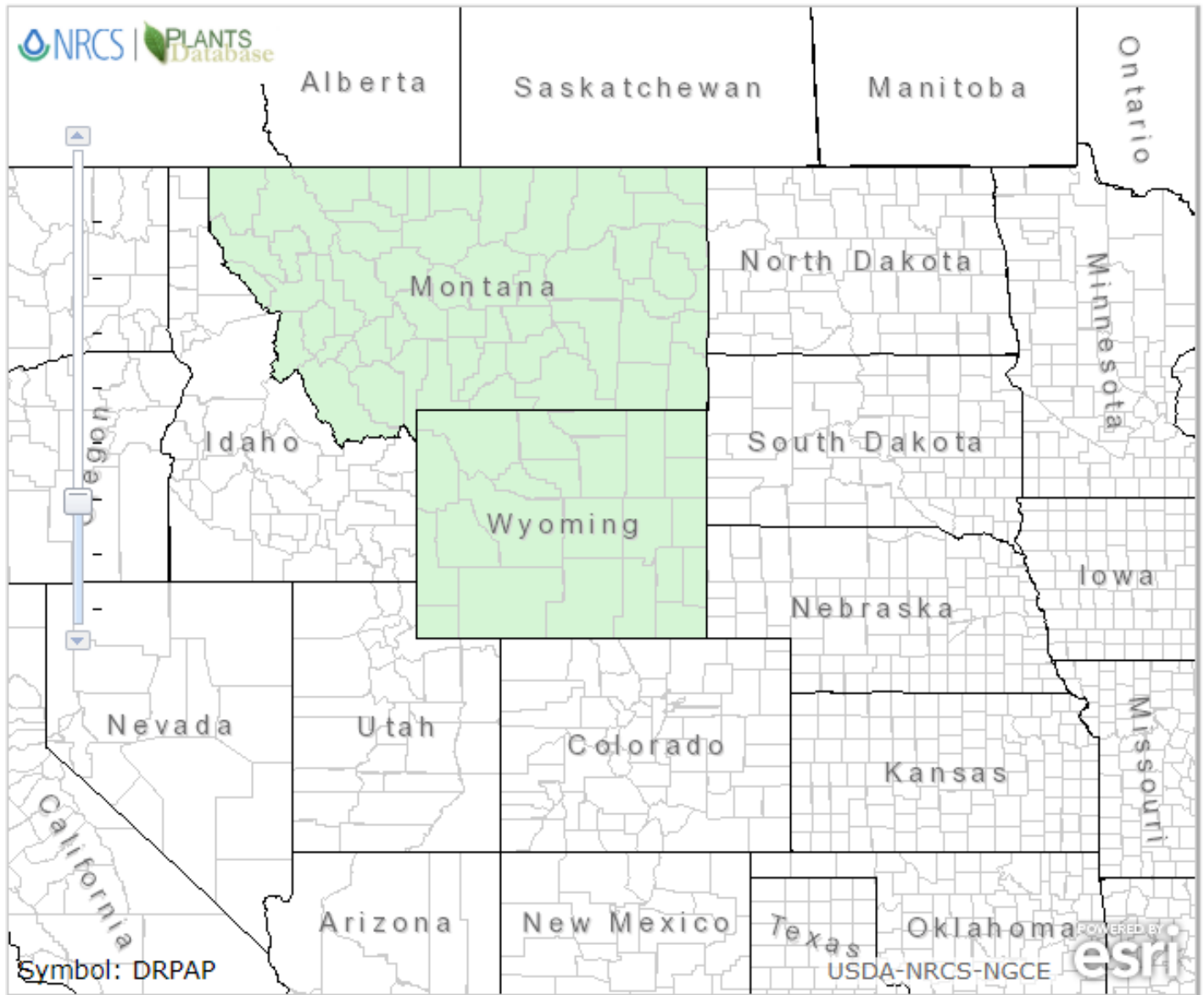
Yes___ No___

Provide explanation for determination

N/A—Occurrences have been documented since 1990.

If determination is no, stop assessment

Map 1, *Draba paysonii* var. *paysonii* range in Wyoming and surrounding states (NRCS 2020).

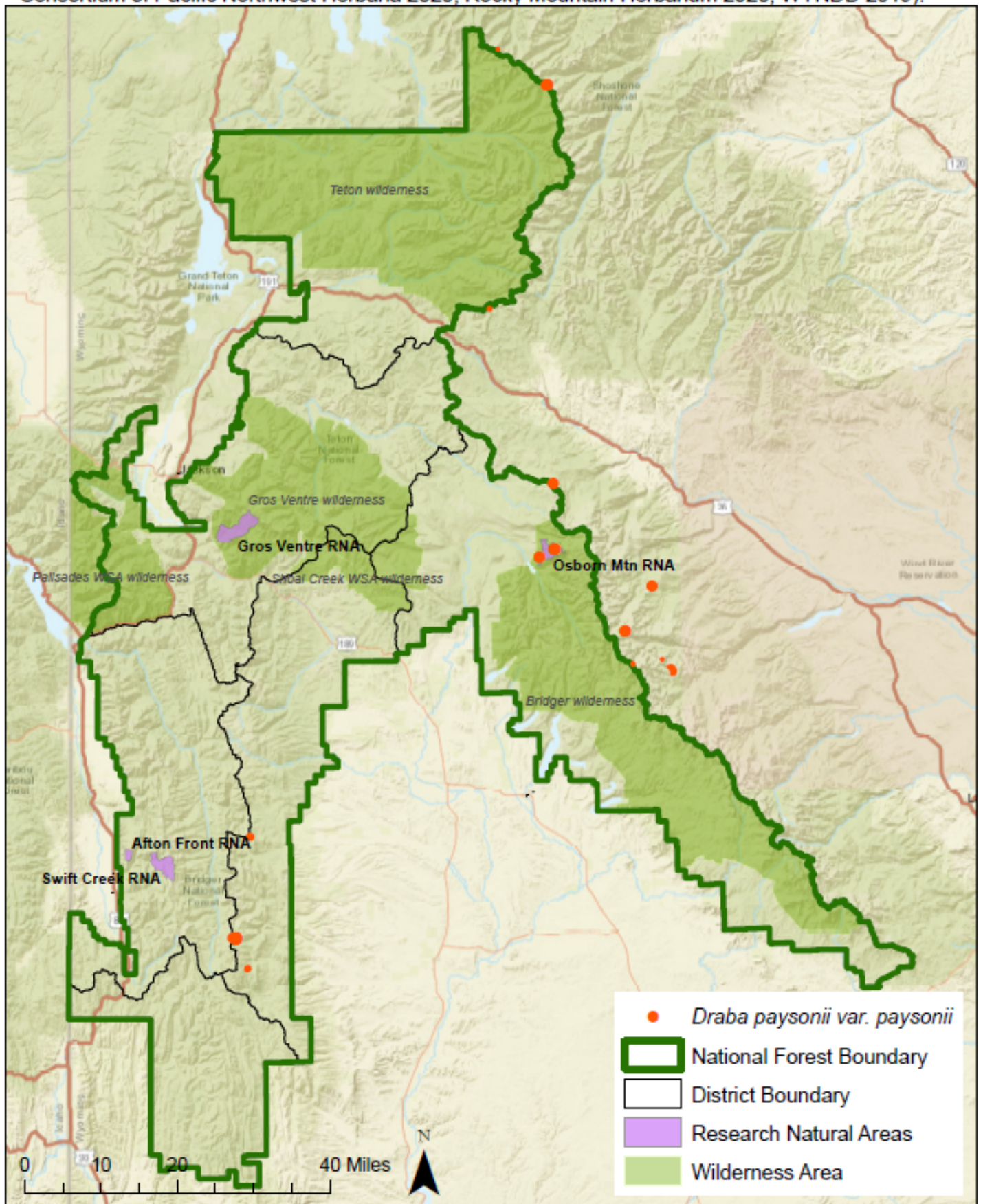


- | | | | |
|---|---|---|--|
| <input checked="" type="checkbox"/> Native | <input type="checkbox"/> Introduced | <input type="checkbox"/> Both | <input type="checkbox"/> Absent/Unreported |
| <input type="checkbox"/> Native, No County Data | <input type="checkbox"/> Introduced, No County Data | <input type="checkbox"/> Both, No County Data | |

Native Status:

- L48
 AK
 HI
 PR
 VI
 NAV
 CAN
 GL
 SPM
 NA

Map 2. *D. paysonii* var. *paysonii* 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 <i>Common; widespread and abundant.</i>
NatureServe State Status	S2S3 – Imperiled to Vulnerable <i>At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors; At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.</i>
WYNDD	Plant Species of Concern <i>Species vulnerable to extirpation at the global or state level due to:</i> <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> (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 2025; 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	<i>Draba paysonii</i> is known from eight occurrences on the Bridger-Teton National Forest, six of which were discovered after 1990. The populations are spread out across the Forest and do not appear to be concentrated in any one area. Occurrences on the Forest are primarily on rocky alpine slopes (Table 1, Map 2).
Distribution outside the Bridger-Teton National Forest	<i>Draba paysonii</i> is a regional endemic of western Montana and western Wyoming. In Wyoming, it is known from 19 occurrences in the Absaroka, Beartooth, Wind River, and Wyoming Ranges and the Yellowstone Plateau (Fremont, Lincoln, Park and Sublette counties) (Fertig 2008; WYNDD 2020).
Abundance on the Bridger-Teton National Forest	Known colonies are very small (numbering in the low 100s) and restricted to specialized microsites (Fertig 2008; WYNDD 2020). Abundance is therefore likely low on the Bridger-Teton National Forest, though surveys are needed for verification.
Population Trend on the Bridger-Teton National Forest	Wyoming populations are presumed to be stable due to lack of threats and rugged habitat (WYNDD 2020). They are also likely stable on the Bridger-Teton National Forest, though surveys are needed for verification.
Habitat Trend on the Bridger-Teton National Forest	<p>This species is found on fellfields and other rocky places on hardpan clay and sand. Also located on dry alpine turf in rocky areas and on bare rock talus slopes on sandstone (Scott 1997, Rollins 1993). Wyoming populations occur at 9,400-12,600 Feet (Fertig 2008).</p> <p>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 contemporary occurrence on the Forest (USFS GIS 2019, Google Earth Pro 2020).</p> <ul style="list-style-type: none"> • Hartman #59371: Within the Teton wilderness area. ~0.4 miles from a non-motorized trail. Not within the perimeter of any RMUs, major fire events, or mapped non-native plant invasions. • Massatti #8548: Not within designated wilderness or RNA. ~0.3 miles from a motorized trail. Not within the perimeter of any RMUs or major fire events. Within the perimeter of a large, mapped invasion of the non-native plant <i>Cirsium arvense</i>. • Tuhy #3419: Within the Bridger wilderness area and Osborn Mtn RNA. Further than ~1 mi from any roads or trails. Not within the perimeter of any RMUs, major fire events, or mapped non-native plant invasions. • Fertig # 14322: Within the Bridger wilderness area and Osborn Mtn RNA. Further than ~1 mi from any roads or trails. Not within the perimeter of any RMUs, major fire events, or mapped non-native plant

Criteria	Rationale
	<p>invasions.</p> <ul style="list-style-type: none"> • Hartman #35665: Not within designated wilderness or RNA. Further than ~1 mi from any roads or trails. Within the perimeter of RMU. Not near any mapped non-native plant invasions. • Hartman #43987: Not within designated wilderness or RNA. ~0.5 miles from a non-motorized trail. Within perimeter or on the border of the large, 2012 Fontenelle Fire. Within the perimeter of RMU. Not near any mapped non-native plant invasions. • Harrison #614: Not within designated wilderness or RNA. ~0.25 miles from a motorized trail. Within the perimeter of RMU. Not near any mapped non-native plant invasions. • Shultz #2980: Not within designated wilderness or RNA. ~0.25 miles from a motorized trail. Within the perimeter of RMU. Not near any mapped non-native plant invasions. <p>The above analysis indicates habitat for <i>D. paysonii</i> has likely experienced low to moderate levels of impacts from natural and anthropogenic disturbances. Climate change will likely contribute to further habitat alterations as described below.</p>
<p>Threats to the Species and its Habitat on the Bridger-Teton National Forest</p>	<p>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.</p> <p>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 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).</p> <p>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.</p>

Criteria	Rationale
	<p>2018).</p> <p>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.</p> <p>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.</p>
Life history and demographic characteristics of the species	Payson's draba is a matted perennial forb from a branched caudex with coarsely hairy, unbranched flowering stems 0.5-3 (6) cm tall. Leaves are linear to spoon-shaped, 4-14 mm long, and pubescent with simple and biforked hairs on the upper surface and 3-branched hairs on the lower surface. The inflorescence is a raceme of 3-10 4-petaled yellow flowers on pubescent stalks. Fruits are coarsely hairy, ovate siliques 5-8 mm long with styles 0.8-1.8 mm long (WYNDD 2020). The flowering/fruitletting period is from July-August (Fertig 2008).
Date: April 2, 2020 Reviewer: L. Chipman	

Summary and Recommendations

Species (Scientific and Common Name): *Draba paysonii* var. *paysonii* [Payson's whitlow-grass]

D. paysonii var. *paysonii* is listed as S2S3 for Wyoming and G5 (secure) globally. It is a WYNDD species of conservation concern. *Draba paysonii* is a regional endemic of western Montana and western Wyoming. Known colonies are small (numbering in the low 100s) and restricted to specialized microsites (Fertig 2008; WYNDD 2020). Abundance is therefore likely low on the Bridger-Teton National Forest, though surveys are needed for verification.

This species is found on fellfields and other rocky places on hardpan clay and sand. Also located on dry alpine turf in rocky areas and on bare rock talus slopes on sandstone (Scott 1997, Rollins 1993). Wyoming populations occur at 9,400-12,600 Feet (Fertig 2008). There are 8 documented occurrences of *D. paysonii* var. *paysonii* on the BTNF. Three occurrences are within designated Wildernesses, two of which are in a Research Natural Area (RNA); one is within the perimeter of a large, mapped invasion of the non-native plant *Cirsium arvense* and in close proximity to a motorized road; one is not in a Wilderness but no identified threats and the other three may have a higher risk due to proximity to motorized or non-motorized roads.

Given the species occurrences on the BTNF are restricted to specialized microsites and half are located in protected areas with low threats, and BTNF's moderate contribution to rankings and lacks sufficient trend data, *Draba paysonii* var. *paysonii* is not recommended to be included as a SCC at this time.

Evaluator: Rose Lehman Date: 03/31/2021 Updated: K. Clause 3/27/25

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