SPECIES: Scientific [common]	*Descurainia torulosa* [Wyoming tansymustard]
Forest:	Bridger-Teton National Forest
Forest Reviewer:	**Rose Lehman; Trevor Bloom**
Date of Review:	**4/4/20; 6/1/20; 02/19/21; 3/25/2025**
Forest concurrence (or recommendation if new) for inclusion of species on list of potential SCC: (Enter Yes or No)	**Yes**

FOREST REVIEW RESULTS:

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

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 _____

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[1]
7/23/1990	19 individuals observed	Wyoming, Fremont County: **Near border of Bridger-Teton in Shoshone National Forest.** Southwestern Absarokas: 044N110W Sec 21 SE4	In flower and immature fruit. Associated with *Mimulus, Antennaria, Achillea millefolium, Erigeron compositus*. Elev. 10000 ft	Collector: Al Flinck EO #5 (WYNDD GIS 2019)
7/14/1990	38 individuals (6 plants very robust, others small)	Wyoming, Fremont County: Southwestern Absarokas: **Near border of Bridger-**	Top of scree slopes at base of east-southeast facing cliffs, on ledges and in cavities. Plants	Collector: Hollis Marriott, 11282 and 11286; EO #1: (Rocky Mountain

		Teton in Shoshone National Forest: volcanic cliffs W of Upper Jade Lake (NW of Brooks Lake) - Continental Divide. 43.778° N, 110.0386° W	with a few flowers, immature fruit, some dispersed seed. Elev. 10300 ft.	Herbarium 2020, SEINet 2020; WYNDD GIS 2019)
7/26/1996	75-100 vegetative "seedling" rosettes and 6 flowering and fruiting plants in one small colony observed on ledge 28 inches wide by 7 feet long.	Fremont County: South Absaroka Range: **Near border of Bridger-Teton in Shoshone National Forest,** east side of Continental Divide ridge, ca 0.4 mi W of Upper Jade Lake; ca 1.3 air mi NW of Brooks Lake; ca 2 air mi NE of Togwotee Pass. 43.778° N, 110.0386° W; uncertainty 0.25 mi.	Semi-shady alcove in breccia cliffs above steep stony talus-scree slopes; on fine whitish sandy-gravel with thin humus and some cryptogam crusts; with *Oxyria digyna, Arnica longifolia,* and *Achillea millefolium*. Phenology: flowering & fruiting. Elev. 10100 ft.	Collector: Walter Fertig, 16913; EO #1 (Rocky Mountain Herbarium 2020, SEINet 2020; WYNDD GIS 2019)
7/27/1990	26 individuals	U.S.A., Wyoming, Teton County: **In Bridger-Teton National Forest** Southern Absaroka Mountains, near west end of Breccia Cliffs, ca 3.6 air mi NNW of Togwotee Pass. 43.8011° N, 110.0958° W; uncertainty 700 ft.	Base of cliffs on sparsely-vegetated light-colored fine soil, with *Oxyria digyna, Erigeron compositus, Eriogonum* sp. Phenology: fruiting. Elev. 10500 ft.	Collector: Al Flinck, 727-90-1; EO #7 (Rocky Mountain Herbarium 2020, SEINet 2020; WYNDD GIS 2019)
7/23/1990	12 plants found in flower and with immature fruit. 65 individuals.	U.S.A., Wyoming, Teton County: **In Bridger-Teton National Forest** Southern Absarokas: east end of Breccia Cliffs, ca 1.9 air mi NNW of Togwotee Pass. 43.778° N, 110.0784° W	Base of cliffs on sparsely vegetated light-colored soil, with *Oxyria digyna* and *Chenopodium* sp. Phenology: flowering & fruiting. Elev. 10100 ft.	Collector: Hollis Marriott, 11293; EO #6 (Rocky Mountain Herbarium 2020, SEINet 2020; WYNDD GIS 2019)
7/20/1997	Unknown	U.S.A., Wyoming, Teton County: **In**	At base of cliffs on rock formation at immediate	Collector: Jerald S. Bricker, 552 and

		Bridger-Teton National Forest. Southern Absorake Mountains: cliffs at west end of Sublette Ridge, ca 0.6 mi W of Togwetee Pass. 43° 46' 40.8" N, 110° 4' 29.1" W	juncture with the talus slope, western exposure. DNA voucher Phenology: flowering & fruiting. Elev. Unknown	553; EO #6 (Rocky Mountain Herbarium 2020, SEINet 2020; WYNDD GIS 2019)

[1]The 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?

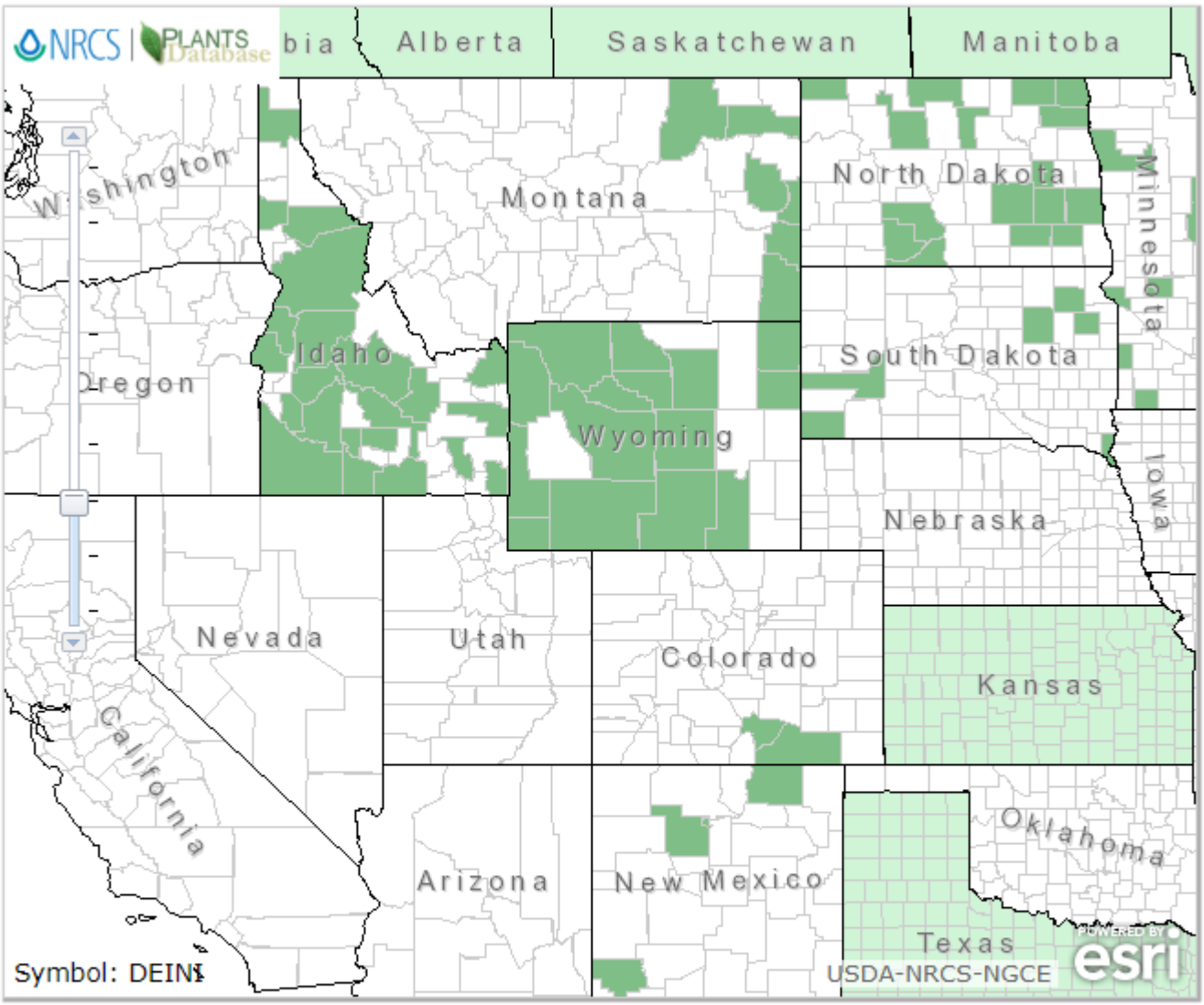
Yes___ No___

Provide explanation for determination

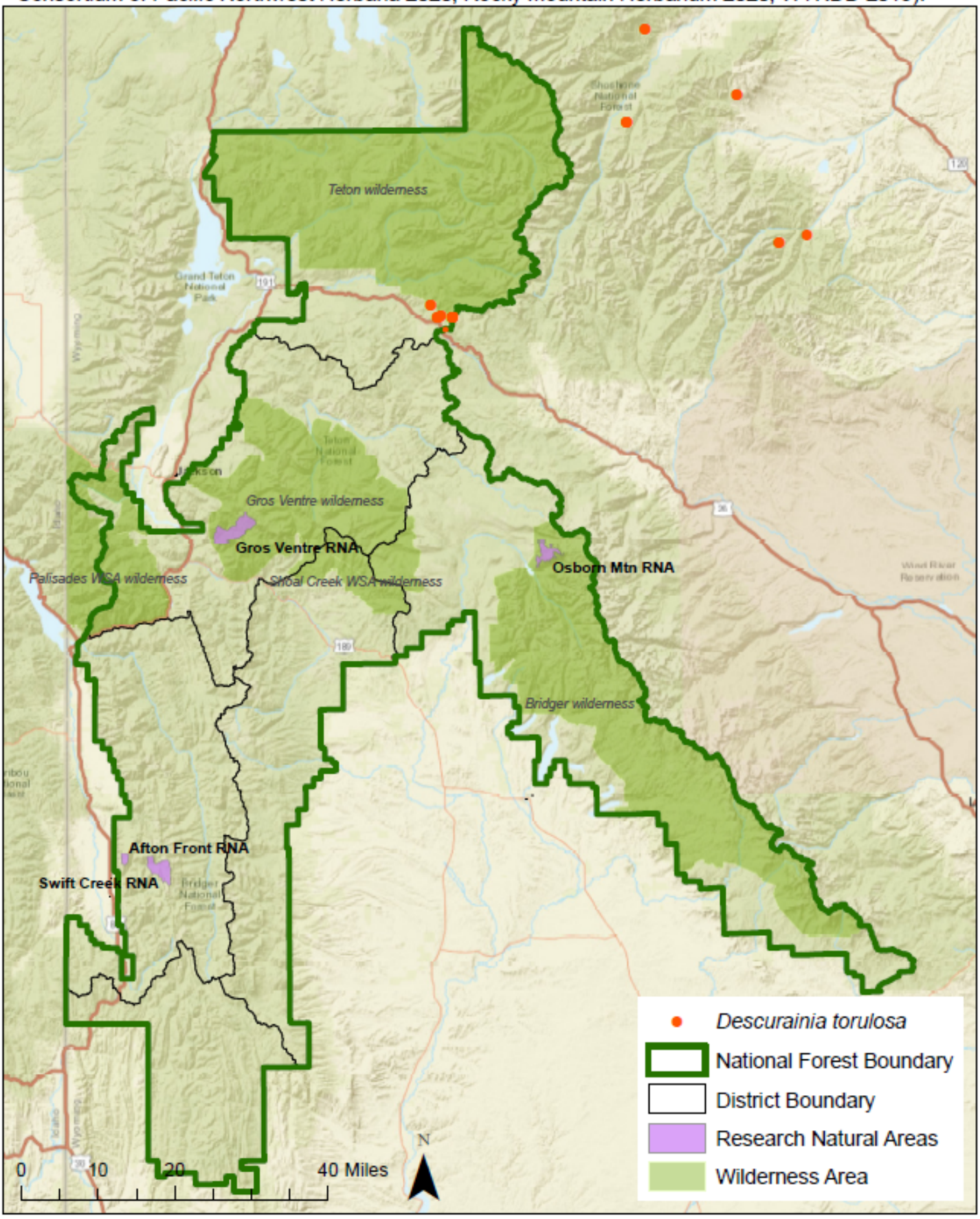
N/A–Occurrences have been documented since 1990.

If determination is no, stop assessment

Map 1, *Descurainia torulosa* range in Wyoming and surrounding states (NRCS 2019).



Map 2, *D. torulosa* 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	**G2—Imperiled** *At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.*
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	**Plant 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	**Region 4: Sensitive Species** *Those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by* *a. Significant current or predicted downward trends in population numbers or density.* *b. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.* (FSM 2670.5 – Threatened, Endangered & Sensitive Species)
USDOI FWS	Not Warranted for Listing. A formal proposal for listing as Endangered or Threatened was recently denied.
USDOI BLM	**Sensitive** *1. Sensitive species must be native species found on BLM-administrated lands for which BLM has the capability to significantly affect the conservation status of the species through management, and either:*

	a. There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range, or *b. The species depends on ecological refugia or specialized or unique habitats on BLM-administrated lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.* *2. All federally designated candidate species, proposed species, and delisted species in the 5 years following their delisting shall be conserved as Bureau sensitive species* (BLM Wyoming Sensitive Species Policy and List; March 31, 2010)
IUCN	Not listed

Sources: WYNDD 2019; Heidel 2018; USDA Forest Service Regions 2 and 4 Sensitive Species Lists; NatureServe 2019, BLM Wyoming Sensitive Species Policy and List, 2010

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

Criteria	**Rationale**
Distribution on the Bridger-Teton National Forest	Plants are observed in the northern area of the forest with limited distribution in the park, there are more of the species distributed outside of the forest boundaries. Distribution of species in the forest boundary are concentrated around North Breccia Cliffs. There are two element occurrences inside the forest (EO #6 and #7) with two more occurrences (EO #1 and #5) just outside the border in Shoshone National Forest (**Table 1**, **Map 2**)
Distribution outside the Bridger-Teton National Forest	According to the USDA, most of the species field observations occur in Region 4, with higher populations found in Region 2 (Heidel, 2004). Located in the Rocky Mountain Region 2, the Intermountain Region 4, and the BLM in Wyoming (Heidel, 2004). Outside of Region 2, three populations occur near Bridger-Teton Forest, while three populations are under BLM lands (Heidel, 2004). Mainly occur on Shoshone National Forest, region 2. Plants observed north, northeast, and east of the forest boundary. The spatial distribution of the species seems to be spread out across northwestern Wyoming (or near the upper left corner). Very few plants are observed within the forest boundary. Endemic to Wyoming and restricted to Absaroka Range and Rock Springs Uplift (Fertig, 2015). Total population of species was estimated around 1,500 in the 1990s, while most populations average less than 40 individuals (Fertig, 2015).

Criteria	Rationale
Abundance on the Bridger-Teton National Forest	Limited number of populations observed within the Bridger-Teton National Forest; Marriot, Bricker, Fertig, and Flint observed populations within the forest ranging from 26 to 65 individuals observed. Just outside the forest populations ranged from 19 to 100 individuals and may be capable of dispersing into the forest.
Population Trend on the Bridger-Teton National Forest	Populations are fluctuating but remain stable. Some recent surveys indicate the population may be suffering from a short-term decline. Overall, the species is most likely stable to due limited outside disturbances and threats (Fertig, 2015).
Habitat Trend on the Bridger-Teton National Forest	Cliff bases, ledges and talus slopes in Bridger-Teton National Forest are stable. Grows in sandy soil at the base of cliffs composed of volcanic breccia or sandstone, overhangs, ledges. Species are observed in a similar habitat in the forest; most of the individuals are located on hill slopes, ledges, or cliffs (Heidel, 2004). Almost all occurrences observed are found on upper slopes, steep slopes, and rocky cliffs.
Threats to the Species and its Habitat on the Bridger-Teton National Forest	Overall, threat levels remain low due to the inaccessibility of most of the populations. Immediate threats are considered to be low in cliff habitat, where it is probably dependent on natural disturbances for colonization of new sites and for survival at existing sites (Heidel 2004). Because the species prefers habitat on steep ledges or cliffs, the erosion of this habitat could be considered a threat. Vulnerable to rockslides if there are drought conditions, which have been linked to some of the species decline (NatureServe, 2020). Populations located in the Bridger-Teton National Forest do not have any human-caused threats or disturbances because of their isolation and rocky habitat. Due to low population numbers the species may be vulnerable to extinction due to limited range and size (Heidel, 2004) 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 (Rocky Mountain Herbarium 2020, SEINet 2020, Google Earth Pro 2020). Occurrences in Bridger-Teton National Forest are in remote habitats and in the closed Blackrock-Spread Creek C&H livestock allotment in the Blackrock Ranger District. The following summarizes identified disturbances for each occurrence in Bridger-Teton National Forest: • **Element Occurrence #1:** Just outside the border to the east in Shoshone National Forest along a remote ridge; no disturbances identified in this area. • **Element Occurrence #6:** Nearby Teton wilderness boundary with no disturbances identified in this area.

Criteria	Rationale
	• **Element Occurrence #7:** Located near Teton wilderness area in remote habitat. No disturbances identified in this area. The analysis shows due to remote locations, *Descurainia torulosa* populations on Bridger-Teton have minimal threats from natural and anthropogenic activities.
Life history and demographic characteristics of the species	Classified as a pioneer species that is found in low-vegetation cover with limited data around dispersal, germination, and establishment (Heidel, 2004). Multiple-stemmed biennial or short-lived perennial herb that grows to 15cm tall. They have finely divided, star-shaped hairs give the stem, leaves, and fruit a gray-green appearance. Leaves are pinnately divided, 2-3 cm long at the base of the plant. Flowers have four petals, are yellow, and 1.5mm long. Fruits are 8-15mm long. The plant flowers and fruits from July-September (WYNND 2020). Short-lived and prefer volcanic or sparsely vegetated slopes (NatureServe, 2020). Prefer elevations between 7,000 to 10,500 ft (Heidel, 2004). *Descurainia torulosa* has four stages in its life history: seed, seedling, vegetative rosette, and a flowering plant (Heidel, 2004). Timespan of its life history is currently unknown due to limited field observations; some estimate 2-3 years to produce flowering stems but dies after blooming (Heidel, 2004).
Date: March 20, 2020 Reviewer: Julie Remp and Clayton McGee	

Summary and Recommendations

Summary and Recommendations
Species (Scientific and Common Name): *Descurainia torulosa* [Wyoming tansymustard]
Descurainia torulosa is listed as S2 (imperiled) in Wyoming and G2 (imperiled) globally. It is currently a FS R4 Sensitive species and only known to occur on the BTNF in R4. The species is endemic to Wyoming and restricted to Absaroka Range and Rock Springs Uplift (Fertig, 2015) with very limited number of populations and individuals on the BTNF. The species grows in sandy soils associated with cliffs, overhangs, ledges. There are few identified threats to the known occurrences on the BTNF but more information is needed to assess potential decline in numbers and ability for this pioneer species to establish or re-establish in suitable habitat. As a globally rare plants that is currently a Forest Service R4 Sensitive species there is a substantial concern for the species capability to persist over the long-term on the BTNF based on the limited number of occurrences and very low number of individuals found in a relatively small area of the forest (Breccia Cliffs). Based on this analysis, it is recommended that *Descurainia torulosa* be included as a SCC.
Evaluator: Rose Lehman Date: 02/19/2021 Reviewed: Trevor Bloom Date: 3/25/2025

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