

SPECIES: Scientific [common]	<i>Stephanomeria fluminea</i> Gottlieb [Teton wirelettuce]
Forest:	Bridger-Teton National Forest
Forest Reviewer:	Rose Lehman; Trevor Bloom
Date of Review:	1/25/2020;3/25/2020; 4/3/21; 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
8/19/1922	unknown	Bridger-Teton National Forest: Hoback River Canyon, near Cliff Creek.	No habitat description reported. Elev. 6390 (approx.) based on location description (Google Earth 2020).	Collector: Edwin B. Payson, 3076, RM 940462 (Rocky Mountain Herbarium 2020)
8/3/1931	unknown	Outside Bridger-Teton National Forest (within 3 mi.): Wyoming: Jackson Hole: Banks of Snake River.	No habitat description reported.	Collector: Louis Williams, 320, RM 1612092 (Rocky Mountain Herbarium 2020)
8/3/1931	unknown	Outside Bridger-Teton National Forest (within 3 mi.): Wyoming: Jackson Hole: Snake River bottom.	No habitat description reported.	Collector: Louis Williams, 320, RM 1246682

Year Observed	Number of Individuals	Location of Observations (USFS District, Town, River, Road Intersection, HUC etc.)	Habitat Description	Source of Information ¹
				(Rocky Mountain Herbarium 2020)
7/31/1932	unknown	Likely outside Bridger-Teton National Forest (Precise location unknown). Wyoming, Teton County: Snake River bottom.	Gravel. Pink flowers. Phenology: flowering. Elev. 6500 ft.	Collector: Louis Williams, 976, RM 161207, RM 1298852 (Rocky Mountain Herbarium 2020) BRYV0147552; Intermountain Herbarium Catalog #: UTC00014267 (SEINet 2020)
8/10/1947	unknown	Outside Bridger-Teton National Forest (within 3 mi. W): Teton County: Near Pacific Creek Jackson Hole Wildlife Park. The approximate location (based on description and elevation in RMH record) is proximal to Markow 12219 collection; may be same population.	On gravel bar. Phenology: flowering. Elev. 6750 ft.	Collector: John F. Reed, 1065, RM 2087532 (Rocky Mountain Herbarium 2020)
8/27/1984	unknown	Outside Bridger-Teton National Forest (within 6 mi. E): Wyoming, Park County: Absaroka Mountains; South Fork Shoshone River Trail, between Robinson Creek and Younts Creek. T46N R107W S8; S9; S17.	Stream sides, coniferous forests, and meadows; wet meadow and forest edge. Phenology: flowering & fruiting. Elev. 7400-7600 ft.	Collector: Ronald L. Hartman, 19617, RM 5561712 (Rocky Mountain Herbarium 2020); BRYV0147554 (SEINet 2020)
7/28/1987	unknown	Bridger-Teton National Forest: Pacific Creek. T46N R113W S20 S1/2.	Sand and gravel bars with <i>Lepidium</i> , <i>Heterotheca</i> . Corolla pink. Phenology: flowering & fruiting. Elev. 7000 ft.	Collector: Robert D. Dorn, 4726, RM 3990852 (Rocky Mountain Herbarium 2020); BRYV0147553 (SEINet 2020)
8/25/1990	unknown	Bridger-Teton National Forest: West Slope Wind River Range: South Fork Fish Creek between Purdy and Hackmore Creeks.	Meadows, gravel bars, and adjacent lodgepole pine forests. Phenology: flowering	Collector: Ronald L. Hartman, 28285, RM 5867772 (Rocky

Year Observed	Number of Individuals	Location of Observations (USFS District, Town, River, Road Intersection, HUC etc.)	Habitat Description	Source of Information ¹
		T42 R111W S25; also, S26.	& fruiting. Elev. 7750-7800 ft.	Mountain Herbarium 2020)
8/25/1990	unknown	Bridger-Teton National Forest: West Slope Wind River Range: Fish Creek/Moccasin Basin area, along South Fork Fish Creek just above confluence with North Fork: ca 30-31 air mi ENE of Jackson. T42N R111W S27/28.	Cobblestone sandbar. Phenology: flowering & fruiting. Elev. 7700 ft.	Collector: B. E. Nelson, 20332, RM 5859532 (Rocky Mountain Herbarium 2020)
8/19/1994	unknown	Bridger-Teton National Forest: Gros Ventre Area: Alkali Creek from Gros Ventre River Road to river and downstream ca. 0.5 air mi. T42N R113W S14 SW1/4; also, NW1/4 S23. 43.6052 N, 110.3772 W.	Stream and river sides. Phenology: fruiting. Elev. 7200-7300 ft.	Collector: Ronald L. Hartman, 49729, RM 625254 (Rocky Mountain Herbarium 2020)
8/13/1995	unknown	Bridger-Teton National Forest: Gros Ventre River drainage; east bank of Cottonwood Creek between ford and 2 track crossing divides over to Fish Creek. T42N R111W S30 SW1/4 NW1/4.	Sandy floodplain terrace with abundant gravel & river cobbles. Mix of <i>Populus angustifolia</i> and <i>Artemisia tridentata</i> with <i>Elymus trachycaulus</i> and <i>Stipa nelsonii</i> . Ligulate flowers pink. Phenology: flowering. Elev. 7640 ft.	Collector: Walter Fertig, 16286, RM 6028662 (Rocky Mountain Herbarium 2020)
7/25/1996	unknown	Outside Bridger-Teton National Forest (within 3 mi. W): Grand Teton National Park: along east side of Pilgrim Creek, ca. 1/8 mi. S of U.S. Hwy 191/287. T45N R114W S6. 43.8947 N, 110.5884 W; uncertainty 1 mi.	Open gravel bar with <i>Crepis tectorum</i> , <i>Phacelia hastata</i> , and <i>Oryzopsis hymenoides</i> . Phenology: flowering & fruiting. Elev. 6800 ft.	Collector: Erwin F. Evert, 32257, RM 788547 (Rocky Mountain Herbarium 2020)
8/15/1998	unknown	Bridger-Teton National Forest: In Pilgrim Creek, N of trailhead, N of boundary with Grand Teton National Park. T46N R114W S20 E1/2.	Gravel bars. Phenology: flowering & fruiting. Elev. 7200 ft.	Collector: Leslie D. Gottlieb, 9807, RM 6611643 (Rocky Mountain Herbarium 2020)

Year Observed	Number of Individuals	Location of Observations (USFS District, Town, River, Road Intersection, HUC etc.)	Habitat Description	Source of Information ¹
				Harvard University Herbaria Catalog #: barcode-00095351; Intermountain Herbarium Catalog #: UTC00227952; Missouri Botanical Garden Catalog #: 2708976; New York Botanical Garden Steere Herbarium Catalog #: 335336; Rancho Santa Ana Botanic Garden Herbarium Catalog #: RSA0001593; University of Nevada Herbarium Catalog #: 9788; University of Washington Accession: 361403 (SEINet 2020)
6/23/2001	unknown	Outside Bridger-Teton National Forest (within 2 mi. W): Grand Teton National Park: W side of Pilgrim Creek, ca. 1.5 air mi. NE of U.S. Hwy 89/191/287, ca. 7.5 air mi. N of Moran. T46N R114W S35. 43.9092 N, 110.508 W; uncertainty 1 mi.	Dry stream bed with <i>Heterotheca depressa</i> , <i>Populus angustifolia</i> , <i>Epilobium suffruticosum</i> . Phenology: flowering & fruiting. Elev. 6900 ft.	Collector: Stuart Markow, 12146b, RM 709129 (Rocky Mountain Herbarium 2020)
7/28/2001	unknown	Outside Bridger-Teton National Forest (within 2 mi. W): Grand Teton National Park: Jackson Hole: N side of Pilgrim Creek, ca. 0.3 air mi. E of U.S. Hwy 89/191/287, ca. 7.5 air mi N of Moran. T46N R114W S31 SE1/4. 43.9074 N, 110.5833 W; NAD 83, uncertainty 700 ft., Nat. Geog. TOPO!	Cobble bar with <i>Heterotheca depressa</i> , <i>Populus angustifolia</i> , <i>Epilobium suffruticosum</i> , <i>Melilotus officinalis</i> . Phenology: flowering. Elev. 6900 ft.	Collector: Stuart Markow, 12170a, RM 642216 (Rocky Mountain Herbarium 2020)

Year Observed	Number of Individuals	Location of Observations (USFS District, Town, River, Road Intersection, HUC etc.)	Habitat Description	Source of Information ¹
7/16/2001	unknown	Outside Bridger-Teton National Forest (within 1 mi. W): Grand Teton National Park: Jackson Hole: N side of Spread Creek, ca. 0.5 air mi. E of U.S. Hwy 26/89/191, ca. 4 air mi. S of Moran. T49N R114W S9 SE1/4. 43.7877 N, 110.8293 W; NAD 83, uncertainty 700 ft., Nat. Geog. TOPO!	Gravel bar with <i>Heterotheca depressa</i> , <i>Agrostis stolonifera</i> , <i>Populus angustifolia</i> . Phenology: flowering. Elev. 6800 ft.	Collector: Stuart Markow, 12212, RM 642219 (Rocky Mountain Herbarium 2020)
8/31/2001	unknown	Outside Bridger-Teton National Forest (within 3 mi. W): Grand Teton National Park: Jackson Hole: S side of Pacific Creek, 100 yds. E of U.S. Hwy 89/191/287, ca. 1 air mi. N of Moran. T45N R114W S23 NW1/4. 43.8521 N, 110.5147 W; NAD 83, uncertainty 700 ft., Nat. Geog. TOPO!	Gravel bar with <i>Agrostis stolonifera</i> , <i>Epilobium ciliatum</i> , <i>Populus angustifolia</i> , <i>Trifolium hybridum</i> . Phenology: flowering & fruiting. Elev. 6750 ft.	Collector: Stuart Markow, 12219, RM 642220 (Rocky Mountain Herbarium 2020)
9/2/2001	unknown	Outside Bridger-Teton National Forest (within 2 mi. W): Grand Teton National Park: Jackson Hole: S side of Buffalo Fork River, ca. 200 yds. N of U.S. Hwy 26/89/191, 0.5 air mi. SW of Moran. T45N R114W S26 NE1/4. 43.8368 N, 110.508 W; uncertainty 0.5 mi.	Gravel bar with <i>Populus angustifolia</i> , <i>Heterotheca depressa</i> , <i>Achillea millefolium</i> , <i>Aster ascendens</i> . Phenology: flowering & fruiting. Elev. 6720 ft.	Collector: Stuart Markow, 12223, RM 642221 (Rocky Mountain Herbarium 2020)
9/3/2001	unknown	Outside Bridger-Teton National Forest (within 5 mi.): Grand Teton National Park: Jackson Hole: N side of Gros Ventre River, ca. 100 yds. W of U.S. Hwy 26/89/191, ca. 300 yds. SW of Gros Ventre Junction, ca. 7 air mi. N of Jackson. T42N R116W S35 NW1/4. 43.562 N, 110.7358 W; uncertainty 0.5 mi.	Cobble bed in dry channel with <i>Heterotheca depressa</i> , <i>Agrostis stolonifera</i> , <i>Populus angustifolia</i> . Phenology: flowering & fruiting. Elev. 6400 ft.	Collector: Stuart Markow, 12224, RM 642213 (Rocky Mountain Herbarium 2020)

Year Observed	Number of Individuals	Location of Observations (USFS District, Town, River, Road Intersection, HUC etc.)	Habitat Description	Source of Information ¹
9/3/2001	unknown	Outside Bridger-Teton National Forest (within 2 mi. W): Grand Teton National Park: Jackson Hole: Gros Ventre River drainage, ca. 0.5 air mi. SW of Kelly, ca. 1 air mi. E of Gros Ventre Campground, 100 yds. N of Gros Ventre River. T42N R115W S10 NW1/4. 43.6196 N, 110.6362 W; uncertainty 0.5 mi.	Cottonwood grove with 60-70 percent canopy coverage, with <i>Populus angustifolia</i> , <i>Heterotheca depressa</i> , <i>Shepherdia canadensis</i> , <i>Poa pratensis</i> . Phenology: flowering & fruiting. Elev. 6650 ft.	Collector: Stuart Markow, 12227, RM 642222 (Rocky Mountain Herbarium 2020)
9/4/2001	unknown	Outside Bridger-Teton National Forest (within 2 mi. W): Grand Teton National Park: Jackson Hole: Ditch Creek, 100 yds. W of road between Kelly and Antelope Flats Road, ca. 4 air mi. E of Moose, ca. 14 air mi. N of Jackson. T43N R115W S27 NE1/4. 43.6628 N, 110.6362 W; uncertainty 0.5 mi.	Dry stream channel with <i>Heterotheca depressa</i> , <i>Populus angustifolia</i> , <i>Purshia tridentata</i> , <i>Melilotus officinalis</i> . Phenology: flowering & fruiting. Elev. 6800 ft.	Collector: Stuart Markow, 12229, RM 642214 (Rocky Mountain Herbarium 2020)
8/19/2003	unknown	Bridger-Teton National Forest: S side of Gros Ventre River, ca. 100 yds. S of and 50 ft. above river, 300 yds. S of Upper Slide Lake, ca. 14 air mi. E of Kelly. T42N R112W S29; Center of S29 Z12 0554944E 4824851N.	N-facing slope and bench with <i>Artemisia dracunculus</i> , <i>Cymopterus terebinthinus</i> , <i>Epilobium angustifolium</i> , <i>Melilotus officinalis</i> , <i>Lupinus argenteus</i> . Phenology: flowering & fruiting. Elev. 7370 ft.	Collector: Stuart Markow, 12520, RM 727237 (Rocky Mountain Herbarium 2020)
8/24/2003	unknown	Bridger-Teton National Forest: S side of Blackrock Creek, below and 50 ft. N of U.S. Hwy 26/287, across highway from Blackrock Ranger Station, ca. 8.5 air mi. E of Moran. T45N R112W S31 NW1/4. 43.8244 N, 110.3513 W; NAD	Gravel bar with <i>Populus angustifolia</i> , <i>Heterotheca depressa</i> , <i>Epilobium suffruticosum</i> , <i>Glycyrrhiza lepidota</i> . Phenology: flowering & fruiting. Elev. 6900 ft.	Collector: Stuart Markow, 12523a, RM 727232 (Rocky Mountain Herbarium 2020)

Year Observed	Number of Individuals	Location of Observations (USFS District, Town, River, Road Intersection, HUC etc.)	Habitat Description	Source of Information ¹
		83, uncertainty 700 ft., Nat. Geog. TOPO!		
8/25/2003	unknown	Bridger-Teton National Forest: W side of Whetstone Creek, ca. 200 yds. NW of confluence with Pacific Creek, ca. 7.5 air mi. NE of Moran. T46N R113W S15 NE1/4. 43.9582 N, 110.4057 W; NAD 83, uncertainty 700 ft., Nat. Geog. TOPO!	Sandy flood plain with <i>Populus angustifolia</i> , <i>Heterotheca depressa</i> , <i>Salix</i> spp. Phenology: flowering & fruiting. Elev. 7150 ft.	Collector: Stuart Markow, 12523b, RM 727231 (Rocky Mountain Herbarium 2020)
8/23/2003	unknown	Bridger-Teton National Forest: both sides of Lava Creek, 20 ft. below and S of U.S. Hwy 26/287, ca. 0.3 air mi. E of Grand Teton National Park boundary, ca. 7.5 air mi. E of Moran. T45N R113W S29 NW1/4. 43.8402 N, 110.4579 W; NAD 83, uncertainty 700 ft., Nat. Geog. TOPO!	Riparian with <i>Populus angustifolia</i> , <i>Heterotheca depressa</i> , <i>Elymus hispidus</i> . Phenology: flowering. Elev. 6850 ft.	Collector: Stuart Markow, s.n, RM 727236 (Rocky Mountain Herbarium 2020)
7/20/2006	unknown	Bridger-Teton National Forest: Teton Wilderness: on Pilgrim Creek, ca 10.5 air mi NNW of Moran; ca 24 air mi NNE of Moose. T46N R114W S9 NW1/4. 43.9729 N, 110.5566 W	Cobble and gravel bar with intergraded sand and silt alluvial deposits. Phenology: flowering. Elev. 7250 ft.	Collector: David Scott, 2094, RM 838722, RM 838723 (Rocky Mountain Herbarium 2020)
7/8/2007	unknown	Bridger-Teton National Forest: Teton Wilderness: on Gravel Creek, ca 12 air mi NE of Moran; ca 28.5 air mi NE of Moose. T46N R113W S1 NW1/4. 43.981 N, 110.374 W.	Scoured stream bottomland with sand and gravel bars; dominant species <i>Populus balsamifera</i> , <i>Populus angustifolia</i> , <i>Alnus</i> sp. Phenology: flowering. Elev. 7220 ft.	Collector: David Scott, 4454, RM 838724, RM 838725 (Rocky Mountain Herbarium 2020)
7/16/2024	3900	Briger-Teton National Forest: Jackson District. Large population found upstream of Soda Lake Guard Station.	Cobble river and stream banks found alongside <i>Heterotheca villosa</i> .	Surveyor: Trevor Bloom – populations recorded in NRM.

Year Observed	Number of Individuals	Location of Observations (USFS District, Town, River, Road Intersection, HUC etc.)	Habitat Description	Source of Information ¹
8/4/2024	1000s	Bridger-Teton National Forest: Blackrock District: Abundant all along Pacific Creek from BT trailhead to confluence with Gravel Creek. Also found up Whetstone Creek.	Cobble river and stream banks found alongside <i>Heterotheca villosa</i> .	Surveyor: Trevor Bloom – populations recorded in NRM.

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

² Paratype for *Stephanomeria fluminea* Gottlieb. [Madroño 46(1): 58-60; fig. 1. 1999] (Rocky Mountain Herbarium 2020)

³ Isotype for *Stephanomeria fluminea* Gottlieb. [Madroño 46(1): 58-60; fig. 1. 1999] (Rocky Mountain Herbarium 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?

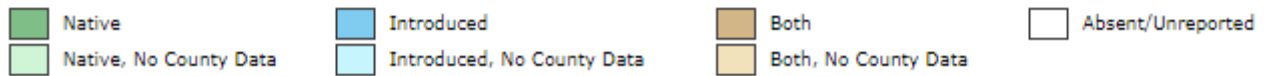
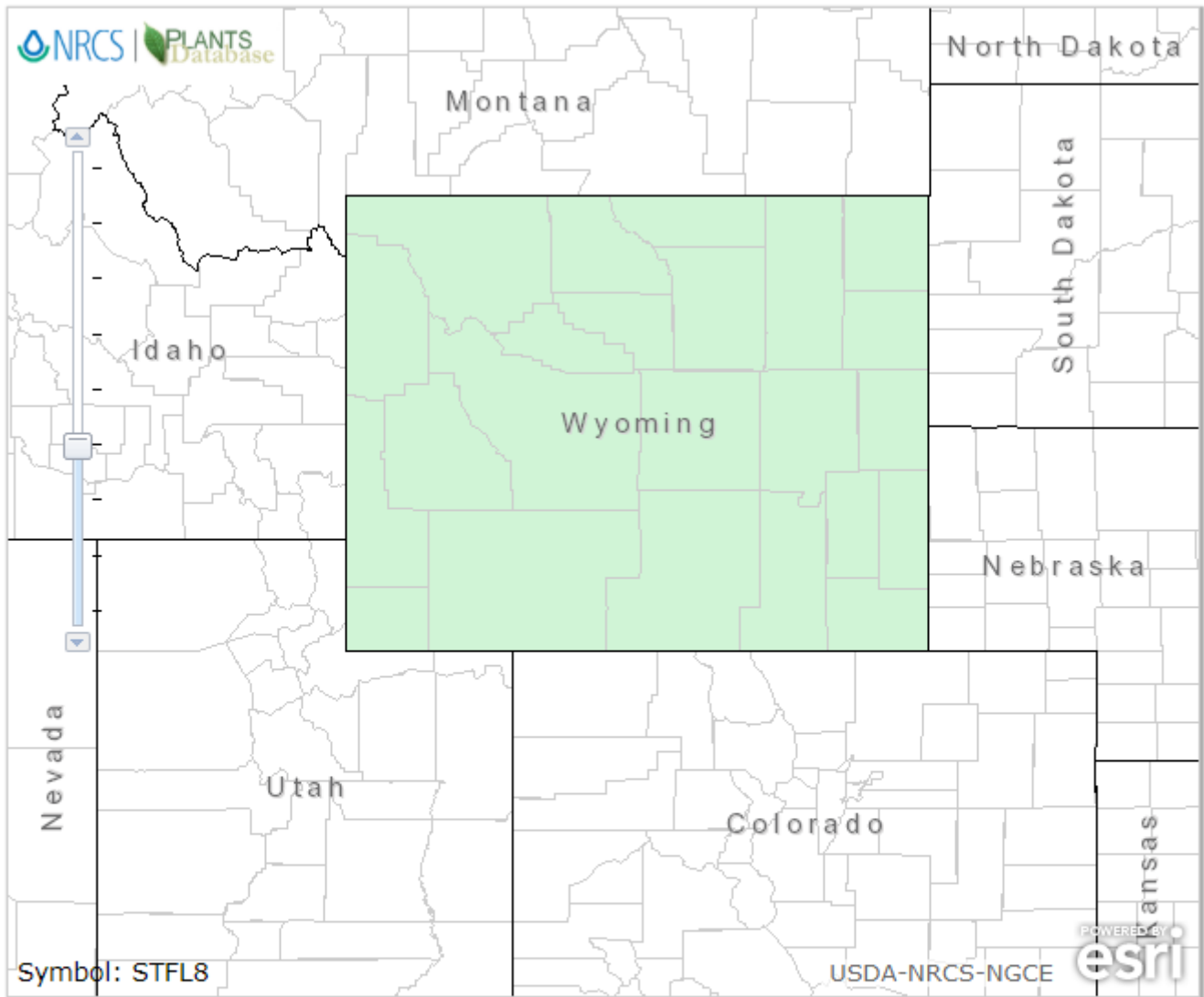
Yes___ No___

Provide explanation for determination

N/A—Occurrences have been made since 1990.

If determination is no, stop assessment

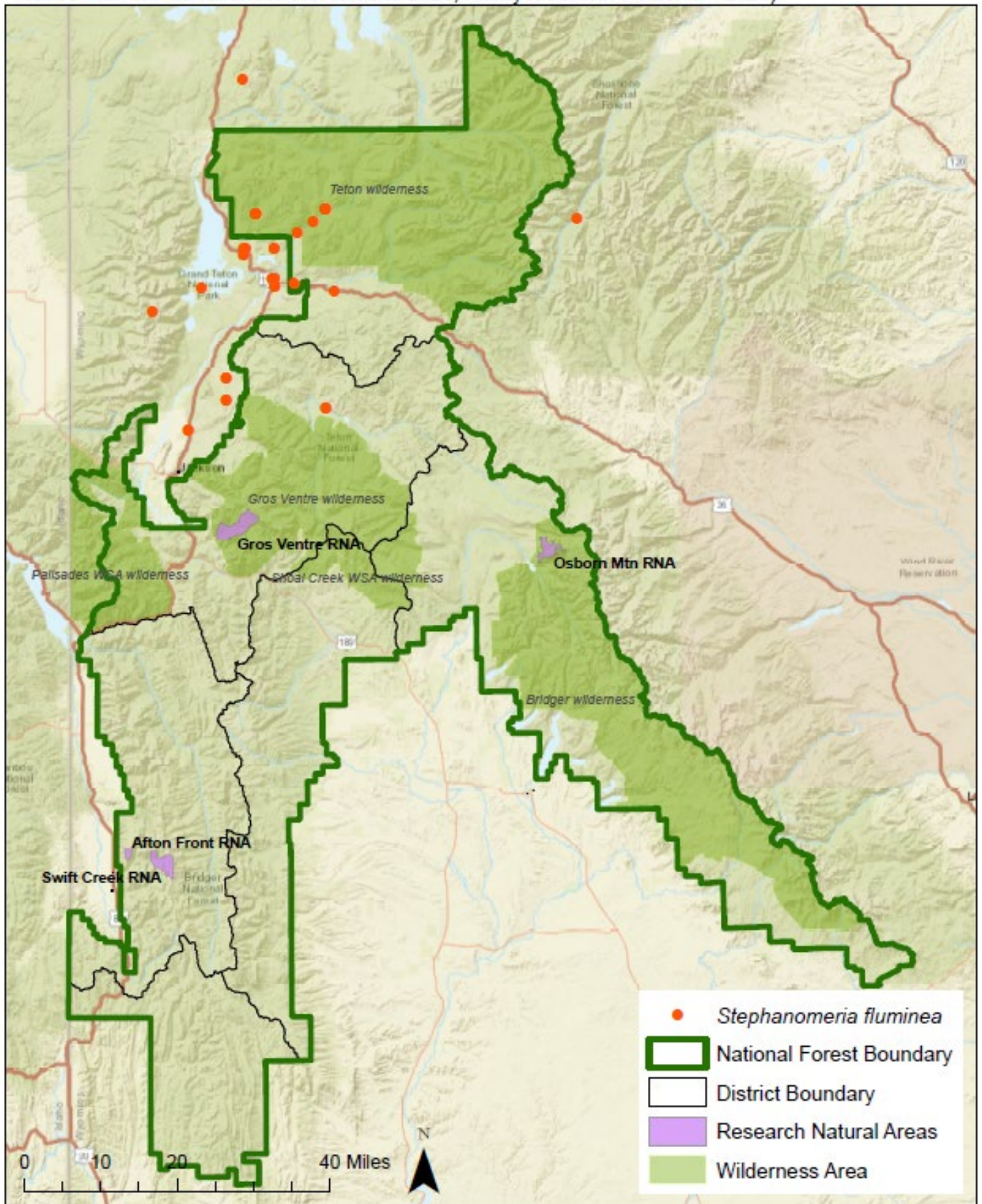
d. **Map 1**, *Stephanomeria fluminea* range in Wyoming and surrounding states (NRCS 2020).



Native Status:



Map 2, *S. fluminea* 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>G2—Imperiled</p> <p><i>At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep 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>
State of Wyoming	Not listed
WYNDD	<p>Plant Species of Concern</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
USDOI FWS	Not Listed
USDOI BLM	Not Listed
IUCN	Not listed

Sources: Heidel 2018; NatureServe 2019; Region 4 Sensitive Species List updated December 2024.

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

Criteria	Rationale
<p>Distribution on the Bridger-Teton National Forest</p>	<p><i>Stephanomeria fluminea</i> is known from at least 13 contemporary (post-1990) collections on the Bridger-Teton National Forest, with the most recent collection made in 2024. Nine additional contemporary collections have been made from outside the forest. Prior to 1990, 7 collections were made, the first in 1922. Of these, 2 were from the forest (Rocky Mountain Herbarium 2020, Table 1).</p> <p>Contemporary collections from the forest are from the Absaroka and Gros Ventre Ranges and the Teton Wilderness (Map 2). The isotype for the species was collected in 1998 in Pilgrim Creek, south of the Teton Wilderness and north of Grand Teton National Park.</p> <p>Targeted surveys for <i>Stephanomeria fluminea</i> (Markow 2004) refined distribution on the forest. Surveys documented 7,580 individuals, with the most extensive subpopulations recorded from the Gros Ventre River, between the forest boundary and Cottonwood Creek, a distance of approximately 12 miles. The greatest abundance of individuals (6,853) were recorded from Spread Creek, between the forest boundary and Rock Creek. Plants were also observed on Blackrock Creek, Buffalo Fork River, Lava Creek, Pacific Creek, Whetstone Creek, and Pilgrim Creek. Populations generally diminished in number as surveyors moved upstream from the forest/Grand Teton National Park boundary. No plants were found on Ditch Creek, Granite Creek, or the Hoback River (where an historical collection was made from 1922; Table 1). Markow (2004) indicated that there were many additional sites with potential habitat that were not surveyed due to access or other constraints. Since the Markow (2004) survey, additional collections have been made from Gravel Creek, in the Teton Wilderness (David Scott, 4454; Table 1).</p> <p>In 2024, Forest Botanists, Trevor Bloom and Karen Clause discovered a population of over 3900 individuals on the Gros Ventre River, highlighting that there are likely more populations to discover on the Bridger-Teton as survey efforts continue.</p>
<p>Distribution outside the Bridger-Teton National Forest</p>	<p><i>Stephanomeria fluminea</i> is a Wyoming endemic species, limited to the Gros Ventre, Snake, and South Fork Shoshone river drainages in Park, Teton, and Sublette Counties (Fertig 2000). It was historically collected on the banks and bottom of the Snake River near Jackson Hole in the early 1930s (Louis Williams, 320, 976; Table 1). Additional historical and contemporary collections have mostly been concentrated in a relatively small area within Grand Teton National Park and adjacent areas of the Bridger-Teton National Forest. A single collection (Hartman, 19617; Table 1) is from the South Fork of the Shoshone River, to the east of Bridger Teton National Forest, on the Shoshone National Forest.</p> <p>Targeted surveys for <i>Stephanomeria fluminea</i> (Markow 2001) refined distribution on Grand Teton National Park. Surveys were done of 7 drainages, between the park/Bridger Teton National Forest boundary and the</p>

Criteria	Rationale
	<p>confluence with either the Snake River or Jackson Lake. Several sites on the Snake River were also surveyed. 12,173 individuals were documented, and the surveyors indicated that “many more” likely occur and were not counted. Plants were observed in Buffalo Fork River, Ditch Creek, Gros Ventre River, Pacific Creek, Pilgrim Creek, and Spread Creek, with the greatest abundance of plants in Pilgrim Creek (5,942), and no plants observed in Cottonwood Creek. No plants were observed on the Snake River.</p>
<p>Abundance on the Bridger-Teton National Forest</p>	<p>As described above, Markow (2004) documented 7,580 individuals from surveys on the Bridger Teton National Forest, with the greatest abundance of individuals (6,853) recorded from Spread Creek, between the forest boundary and Rock Creek.</p> <p>Additional collections (Table 1) made before and after Markow’s (2004) survey on the forest did not document local abundance at the collection site, so a precise abundance estimate cannot be made. WYNDD (2020) notes that populations may be locally abundant in suitable habitats along major streams in Grand Teton National Park; similar conditions may exist where suitable habitat is present on the Bridger-Teton National Forest.</p>
<p>Population Trend on the Bridger-Teton National Forest</p>	<p>Recent trends for this species are unknown (Heidel 2018, WYNDD 2020); there is insufficient information to assess this criterion. One population reported in the 100's of individuals was revisited and was a magnitude smaller, possibly due to spring floods (WYNDD 2020).</p>
<p>Habitat Trend on the Bridger-Teton National Forest</p>	<p><i>Stephanomeria fluminea</i> habitat is cobble floodplains and shifting gravel and sand bars along major rivers and large streams (Markow 2001, 2004). Markow (2001) suggests that stream channel topographic diversity; that is, variation in the elevation of gravel and cobble bars, and assorted depth of channels within the beds, contributes to habitat suitability. Markow (2004) found a population approximately 50 feet in elevation on a bench above the Gros Ventre River, indicating that annual flooding is not a habitat requirement.</p> <p>Associated species include <i>Populus angustifolia</i> (narrow-leaf cottonwood) and <i>Heterotheca depressa</i> (Teton goldenaster), the latter of which is a regional endemic with a similar but somewhat broader distribution to <i>Stephanomeria fluminea</i> (Markow 2001). Markow (2001) suggests that environmental conditions necessary for <i>P. angustifolia</i> to grow to full maturity are also necessary for the viability of <i>S. fluminea</i> and, to a lesser extent, <i>H. depressa</i>.</p> <p>The cobble floodplains and shifting gravel and sand bars along major rivers and large streams occupied by <i>Stephanomeria fluminea</i> may be vulnerable to alterations due to the effects of climate change. Lower snowpack and increased drought will result in lower base flows, reduced soil moisture, wetland loss, riparian area reduction or loss, and more frequent and possibly more severe wildfire (Halofsky et al. 2018). Future peak-flows will be higher and more frequent, which may alter existing disturbance regime in occupied stream-bottom and floodplain habitat. Increases in wildfire severity and extent may cause increased soil</p>

Criteria	Rationale
	<p>erosion. This may negatively alter cobble and bar habitat by increasing the amount of fine substrate composition. Further, lower snowpack will cause significantly lower streamflow in summer, potentially altering available water for <i>Stephanomeria fluminea</i>.</p>
<p>Threats to the Species and its Habitat on the Bridger-Teton National Forest</p>	<p>In general, riparian habitat and wetlands on National Forests receive considerations and protections from disturbances through forest management direction and water regulations. These considerations and protections would avoid or minimize adverse effects to special status riparian and wetland plants, such as <i>Stephanomeria fluminea</i>, where they occur.</p> <p>This plant appears to be closely tied to a particular hydrologic regime that could be modified by activities such as gravel extraction or water diversion for irrigation. A major gravel quarry was recently constructed near Spread Creek. The quarry is far enough from the mainstream that it is unlikely to influence plants within that drainage (Markow 2001). Natural influences seem to impose minimal, if any negative impact. Plants show little evidence of herbivore or insect damage, presumably due to the strong odor emitted. Recreational use of habitat poses minimal risk to populations, as sites with potential habitat are rarely used by anyone other than fishermen (Markow 2004).</p> <p>WYNDD (2020) has also noted that invasive plant encroachment (particularly by spotted knapweed and sweetclover), may be a concern. Further, as described above, habitat may be threatened by the effects of climate change.</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 2019).</p> <ul style="list-style-type: none"> • 8/25/1990 (Ronald L. Hartman, 28285): This occurrence is on gravel bars in the South Fork Fish Creek between Purdy and Hackmore Creeks. This location is downstream of and near, but not within, the Purdy Fire (2006) footprint, indicating that soil erosion may have affected stream habitat. Given the length of time since that fire, this potential impact is likely no longer occurring. The non-motorized South Fork of Fish Creek Trail traverses the riparian corridor in this area; the trail is located outside of suitable gravel bar habitat, indicating that recreational impacts would be minor. No invasive plants have been recorded in the occurrence vicinity. • 8/25/1990 (B. E. Nelson, 20332): This occurrence is in the Fish Creek/Moccasin Basin area, on cobblestone sandbars along South Fork Fish Creek just above confluence with North Fork. It is within approximately 2 air miles of the Hartman (28285) occurrence above. Potential threats are the same as described for that occurrence. • 8/19/1994 (Ronald L. Hartman, 49729): This occurrence is in the Gros Ventre Area, in the portion of Alkali Creek between Gros Ventre River Road to the Gros Ventre River, and in the Gros Ventre River

Criteria	Rationale
	<p>from this point downstream about 0.5 air miles. Gros Ventre Road, Forest Road 30400, and several informal camp sites are present in this area, indicating that potential threats from recreational use are likely relatively high. Several invasive plants have been mapped in the vicinity, including small polygons of <i>Lepidium latifolium</i>, <i>Cirsium arvense</i>, and <i>Convolvulus arvensis</i>, and a large <i>Carduus nutans</i> polygon.</p> <ul style="list-style-type: none"> • 8/13/1995 (Walter Fertig, 16286): This occurrence is in the Gros Ventre River drainage; on the east bank of Cottonwood Creek. Cottonwood Trail (Forest Road 30410) traverses the east side of cottonwood creek in this area, indicating that the potential for recreational impacts exists. A small polygon of <i>Euphorbia esula</i> is mapped along the trail near this occurrence. • 8/15/1998 (Leslie D. Gottlieb, 9807): This occurrence is in Pilgrim Creek. The non-motorized Pilgrim-Middle Pilgrim Creek Trail traverses the riparian corridor in this area; the trail is located outside of suitable gravel bar habitat, indicating that recreational impacts would be minor. A small polygon of <i>Cirsium arvense</i> is mapped along the trail near this occurrence. • 8/19/2003 (Stuart Markow, 12520): This occurrence is south of Upper Slide Lake, on a bench above the Gros Ventre River. Gros Ventre Road is near occurrence, indicating that potential threats from recreational use are present. Several invasive plants have been mapped in the vicinity, including small polygons of <i>Cirsium arvense</i> and <i>Carduus nutans</i>. • 8/24/2003 (Stuart Markow, 12523a): This occurrence is in Blackrock Creek, near U.S. Hwy 26/287 and the Blackrock Ranger Station. The highway crosses Blackrock Creek just upstream of occurrence, and another Forest Service administrative road crosses the creek below it. Fencing is present along the highway right-of-way edge, likely precluding most recreational access to the occurrence location, and thus potential impacts from this use. Several invasive plants have been mapped in the vicinity, including polygons of <i>Centaurea stoebe</i> ssp. <i>micranthos</i>, <i>Cirsium arvense</i>, <i>Carduus nutans</i>, and <i>Bromus tectorum</i>. • 8/25/2003 (Stuart Markow, 12523b): This occurrence is in Whetstone Creek, in the Teton Wilderness. The Pacific Creek trail traverses near the occurrence. It is possible that trail use has increased human presence into the species' habitat, which could cause habitat degradation and damage to individuals (e.g., through trampling). However, since the population is within the Teton Wilderness Area, human presence and associated disturbance should be minimal. A large polygon of <i>Cirsium arvense</i> has been mapped upstream from the occurrence. • 8/23/2003 (Stuart Markow, s.n.): This occurrence is in Lava Creek, at the U.S. Hwy 26/287 crossing. The highway indicates that potential threats from recreational use are present. • 7/20/2006 (David Scott, 2094): This occurrence is in Pilgrim Creek, in the Teton Wilderness. The Pilgrim Creek trail traverses near the occurrence. It is possible that trail use has increased human presence into the species' habitat, which could cause habitat degradation and damage to individuals

Criteria	Rationale
	<p>(e.g., through trampling). However, since the population is within the Teton Wilderness Area, human presence and associated disturbance should be minimal. Several polygons of <i>Cirsium arvense</i> have been mapped upstream from the occurrence.</p> <ul style="list-style-type: none"> 7/8/2007 (David Scott, 4454): This occurrence is in Gravel Creek, in the Teton Wilderness. The Gravel Creek trail traverses the occurrence. It is possible that trail use has increased human presence into the species' habitat, which could cause habitat degradation and damage to individuals (e.g., through trampling). However, since the population is within the Teton Wilderness Area, human presence and associated disturbance should be minimal. Several polygons of <i>Cirsium arvense</i> have been mapped upstream from the occurrence. This location is within the Huck Fire (1988) footprint, indicating that soil erosion may have affected stream habitat. Given the length of time since that fire, this potential impact is likely no longer occurring. <p>The above analysis suggests that habitat for <i>Stephanomeria fluminea</i> has likely experienced low to moderate effects from natural and anthropogenic disturbances.</p> <p>Climate related effects and drying of wetlands could reduce habitat and viability for rare species. Changes in temperature and precipitation may also 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. 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	<p><i>Stephanomeria fluminea</i> is a milky-juiced perennial forb with multiple stems 15-40 cm tall from a creeping rhizome. Stems and leaves are short-tomentose throughout. Basal leaves are oblong or oblanceolate with entire to toothed margins and form a rosette. Stem leaves are 35-45 mm long and 3-5 mm wide with oblong-oblanceolate blades and entire margins. Flower heads have 5 main involucre bracts 8-10 mm long subtended by shorter, irregular bracts 2-4 mm long and are borne in an open, terminal panicle. Heads contain 5-6 pink, lavender, or white ligulate flowers (disk flowers are lacking). Fruits are tan, ribbed achenes 4-4.4 mm long and topped by a white pappus of plumose bristles (Gottlieb 1999). Flowering is from late July to September (WYNDD 2020). Additional ecological information for this species is unavailable.</p>
Date: January 10, 2020 Reviewer: Morgan Trieger Updated: 3/25/2025	

Criteria	Rationale
Trevor Bloom	

Summary and Recommendations

Given that *Stephanomeria fluminea* is a regional endemic to only a handful of watersheds in Grand Teton and Northern Bridger Teton National Forest that are highly impacted by recreation and invasive species, it is listed as a G2-Imperiled, S2-Imperiled and a Wyoming Species of Concern. It is a clear candidate for Species of Conservation Concern.

References

- Consortium of Pacific Northwest Herbaria. 2020. Specimen data search. Available at: <http://pnwherbaria.org>.
- 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.
- Fertig W. 2016. State Species Abstract *Stephanomeria Fluminea* (Teton-Wire-Lettuce). Updated by Bonnie Heidel. Wyoming Natural Diversity Database, University of Wyoming. Laramie, WY.
- Google Earth Pro, 2019. Aerial photo and mapping analysis. Software version 7.3.2.5776 (64-bit).
- Gottlieb, L. D. 1999. "A new species of *Stephanomeria* (Asteraceae) from northwestern Wyoming." *Madroño* 46:58-60.
- Halofsky, J.E., D.L. Peterson, J.J. Ho, N.L. Little, L.A. Joyce, editors. 2018. Climate change vulnerability and adaptation in the Intermountain Region. Gen. Tech. Rep. RMRS-GTR-xxx. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Research Station.
- Hatfield, R., Jepsen, S., Mader, E., Black, S.H., Shepherd, M. 2012. Conserving bumble bees: guidelines for creating and managing habitat for America's declining pollinators. The Xerces Society for Invertebrate Conservation.
- Heidel, B. Sensitive and rare plant species inventory in the Salt River and Wyoming Ranges, Bridger-Teton National Forest. Prepared for the Bridger-Teton National Forest, by the Wyoming Natural Diversity Database, University of Wyoming. Laramie, WY.
- Heidel, B. 2018. Wyoming plant species of concern, March 2018. Wyoming Natural Diversity Database, Laramie, WY. Accompanied by Wyoming plant species of potential concern, with tables of additions and deletions.
- 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.
- Markow, S. 2001. Report on a Survey for *Stephanomeria fluminea* in Grand Teton National Park. Prepared for the Greater Yellowstone Network Inventory and Grand Teton National Park by the Wyoming Natural Diversity Database, University of Wyoming. Laramie, WY.
- Markow, S. 2004. Survey for *Stephanomeria fluminea* on the Bridger-Teton National Forest. Prepared for the Bridger-Teton National Forest and the Region 4 Forest Service Office, by the Wyoming Natural Diversity Database, University of Wyoming. Laramie, WY.
- Miller-Struttman, N.E., Geib, J.C., Franklin, J.D., Kevan, P.G., Holdo, R.M., Ebert-May, D., Lynn, A.M., Kettenbach, J.A., Hedrick, E., Galen, C. 2015. Functional mismatch in a bumble bee pollination mutualism under climate change. *Science*, 349(6255): 1541-1544.
- National Resources Conservation Service (NRCS). 2020. Internet website: <https://plants.usda.gov>.

NatureServe. 2019. 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 January 2020.

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

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