

Comments to GMUG regarding SCC Plants (draft) GMUG
Submitted to GMUG NF for Plan Revision comments

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Thank you for the opportunity to comment on the revised GMUG plan. We are submitting comments regarding the designation of plant species as Species of Conservation Concern (SCC).

First, we are pleased that climate change is recognized among the threats for many species. We agree that a warming drying trend may threaten alpine, wetland, and fen species.

We also appreciate that CNHP data has been consulted as one of the best available scientific resources. We hope that discrepancies between FS and CNHP data can be resolved by an exchange of information. Also that the historical element occurrences (more than 20 years old), which account for 60% of the CNHP records for the GMUG can be updated, so that the best scientific information can be accessed.

However, we believe that many species deserving to be designated as SCC are left out.

Although we understand that the ecological systems where these species occur are addressed by the plan, we believe that in the case of plants, where individuals or populations are unable to move like animals, a “fine filter” is needed as well as the “coarse filter” of protecting habitat.

Table 51 of Appendix 9 lists species to be designated as SCC, including G1 and G2 species. Two important G/T2 species listed below are missing from that list. Chapter 10 of the Planning Handbook “directs that G1G2 species are expected to be species of conservation concern unless there is evidence that the known threats do not operate in the planning unit”.

Draba exunguiculata (G2 S2) 3 documented occurrences on boundary of Gunnison and San Isabel NF. Both forests need to take responsibility for this species. Threats - climate change, domestic sheep grazing.

Physaria rollinsii (G1G2 S1S2) 13 documented occurrences along HPP transects on Gunnison RD (HPP transects, Austin pers. comm.). Threats - livestock grazing, increasing off-trail ORV use, planned recreation development occurring in habitat northeast of Gunnison, increased off-leash dog use in habitat, climate change drying in lower elevations, spread of cheatgrass,

Table 53 of Appendix 9 lists species that should be considered but were determined not to be eligible according to the 4 criteria that are listed in the draft plan revision. Appendix 9 states that to be designated as SCC *all four* criteria listed must be met. However, the planning rule only requires that one or more of these criteria be met.

“f. Species for which the best available scientific information indicates there is local conservation concern about the species' capability to persist over the long-term in the plan area due to:

(1) Significant threats, caused by stressors on and off the plan area, to populations or the ecological conditions they depend upon (habitat). These threats include climate change.

(2) Declining trends in populations or habitat in the plan area.

(3) Restricted ranges (with corresponding narrow endemics, disjunct populations, or species at the edge of their range).

(4) Low population numbers or restricted ecological conditions (habitat) within the plan area.” **(Forest Service Planning Directives 12.52c – Criteria for Identifying a Species of Conservation Concern)**

The second of these criteria, that there must be a “declining trend in populations or habitat in the plan area” is seldom met, since there are no data supporting either declining or increasing trends on nearly all plant species considered. If this requirement were changed to “declining trend or no data” many more of the species considered would qualify as Species of Conservation Concern, even if all four criteria were required.

In addition, items *a* through *e* in the handbook were not considered for many species. Several species that were not designated are Sensitive Species for Region 2 or on adjoining forests; or were identified by the state of Colorado as being at risk (SWAP).

The following 5 species are on the Region 2 Sensitive Species list. We understand that the Region 2 Sensitive Species list has different criteria than the GMUG SCC criteria, yet some of these species meet both criteria. No justification has been given for not including them, and we believe they should be considered according to criteria *d*. See our Table 53 comments and criteria met.

Botrychium paradoxum (G3G4 S1)

Braya glabella subsp. *glabella* (G5T5 S1S2)

Drosera rotundifolia (G5 S2)

Carex diandra (G5 S2)

Carex stenoptila (G3 S3)

The following 3 species are included in the SWAP (Colorado State Wildlife Action Plan) and should therefore be considered per criterion *c*.

Carex stenoptila (G3 S2)

Astragalus naturitensis (G3 S2S3)

Cirsium perplexans (G3 S3)

The following table was compiled with information from the GMUG in Appendix 9, Table 53 (in quotes in the table), CNHP element occurrence records, NatureServe Explorer and personal knowledge.

Species from Table 53 and other species that qualify to be designated as SCC:

GMUG Table 53 & Other Species	CNHP or Nature Serve Rank	Meets criteria #1 (threats to pops. or habitat)	Meets criteria #2 (declining trend in pops. or habitat)	Meets criteria #3 (Endemic, disjunct or edge of range?)	Meets criteria #4 (low population #'s/restricted habitat on GMUG)	Conclusions
<i>Alsinanthe macrantha</i> (<i>Minuartia</i>) House's sandwort	G3 S3	"House's sandwort is extremely vulnerable to climate change. Its alpine habitat is also rated as highly vulnerable to climate change"	"There is no information on the population trend in the GMUG",	<u>Endemic</u> . It is known from only CO and UT, S1 in UT.	Restricted habitat (high alpine).	Meets criteria 1,3 and 4.
<i>Astragalus naturitensis</i> Naturita milkvetch	G3 S2S3	"extremely vulnerable to climate change"	"trend appears stable"	"northeastern-most of the entire species", <u>edge of range</u>		SWAP Tier 2
<i>Botrychium lineare</i> Narrow-leaf grapefern	G3 S2S3	small population size results in threats from stochastic events.	no data on trend	"...where it is <u>disjunct</u> from the main body of the species' distribution."	small population size--10 stems	meets criteria 1, 3, 4 . No data on trend

<i>Botrychium paradoxum</i> Peculiar moonwort	G3G4 S1	"is considered extremely vulnerable to climate change within the plan area" Population is near top of ski area lift where hundreds of people walk in summer (Austin).	single location so no trend data	wide range to north, but CO is southern-most state and only one record in CO, so <u>edge of range</u> .	very small population size (estimate about 25 plants) last observed in 2019 (Austin).	Meets criteria 1,3 and 4.
<i>Carex diandra</i> Lesser panicled sedge	G5 S2	Fen species vulnerable to climate change-drying conditions. Climate change and livestock grazing are threats.	Suitable habitat for the species has declined about 25% in the Grand Mesa NF since 1979	"not a restricted range". CO is southern-most state of range. 19 occurrences in CO., mostly in Routt NF. Single occurrence in GMUG is southernmost. <u>Edge of range</u> .	Only one occurrence in GMUG in CNHP, 2 according to GMUG...	Meets all 4 criteria.
<i>Carex livida</i> Livid sedge	G5 S1	Threats - livestock grazing, moose and elk wallowing. "Declining habitat (fens)" - threat. Climate change and drying conditions - threat.	"suitable habitat for the species has declined about 25% in the Grand Mesa NF since 1979." Fens on Grand Mesa have been impacted by vehicles, drainage, ditching, and flooding (Austin & Cooper 2015).	restricted range-- "southern-most of the species". <u>Edge of range</u> .	Small population size: Only 2 occurrences in GMUG, and these have low number of plants.	Meets all 4 criteria.
<i>Cladina arbuscula</i> Reindeer lichen	G5 S2	Threats - road grading sending sediment into	No trend data.	Southern edge of range.	3 occurrences on GMUG, restricted to	Meets criteria 1, 3, 4.

		Wager Gulch Iron Fen (Austin pers. comm), domestic sheep grazing.		<u>Disjunct.</u>	edges of fens.	
<i>Crepis nana</i> Dwarf alpine hawksbeard	G5 S3	"...highly vulnerable to climate change" "substantial concern for the long term persistence of the species"	no info on trend	South <u>edge of range.</u>	Restricted to alpine.	Meets criteria 1,3,4.
<i>Cystopteris montana</i> Mountain bladder fern	G5 S1	"Habitat loss from spruce beetle outbreak represents declining trend"	"declining trend in habitat"	"the species is <u>disjunct</u> "	restricted habitat ("mossy shaded, moist to wet rocks and cliffs"	Meets all 4 criteria.
<i>Draba globosa</i> Rockcress draba	G3 S1	"rockcress draba is rated as extremely vulnerable to climate change, and its alpine habitat is rated as highly vulnerable."	"No trend data are available from the GMUG"	"one site where it has a restricted range". <u>Edge of range.</u>	One site, so small population size	Meets criteria 1, 3 and 4.
<i>Draba incerta</i> Yellowstone whitlow-grass	G5 S1	"highly vulnerable to climate change"	no trend data	"the GMUG population is the southeastern most of the species distribution". <u>Edge of range.</u>	2 sites on GMUG, "one site has a restricted ecological condition". Small population size.	Meets criteria 1, 3 and 4.
<i>Draba streptobrachia</i> Colorado Divide whitlow-grass	G3 S3	"extremely vulnerable to climate change"	"no trend data are available"	"The GMUG population represents a restricted range and is the western extent of the species", <u>edge of range</u>	small population size. CNHP has 8 records in GMUG, but no A or B occurrences, all C, D, E or H.	Meets all 4 criteria.
<i>Draba ventosa</i>	G3 S1	"vulnerable to	no trend data	"GMUG is	4 locations.	Meets

Tundra draba		climate change"	available	southwestern most extent of its range", <u>edge of range</u> .	Small population size?	criteria 1, 3 and 4. All CNHP records are Historic.
<i>Drosera rotundifolia</i> Roundleaf sundew	G5 S2	"site impacted by an unauthorized public use, dogs, camping, and people.	"GMUG population appears to be stable" based on CNAP monitoring. Baseline monitoring was conducted by DBG , but FS did not follow up.	"disjunct"	small population size (est. 1500 plants, CNAP 2021). Very restricted habitat (only in a certain microsite of one iron fen).	Meets criteria 1, 3 and 4. Criteria #2 is unknown. All fen species should be SCC
<i>Erigeron humilis</i> Low fleabane G5 S1		alpine species vulnerable to climate change.	no trend data available	"southeastern -most for the species"(wide range to western Canada, but CO is farthest southeast), <u>edge of range</u> .	4 locations in GMUG. No data on population size? CNHP records are Historic.	Meets criteria 1, 3 and 4
<i>Erigeron lanatus</i> Wooly fleabane	G4 S2	"extremely vulnerable to climate change" "alpine habitat is extremely vulnerable to climate change" ...at risk from off road vehicles"	no trend data	southern-most location for species, <u>edge of range</u> .	All CNHP records H or E. Population size on GMUG unknown. Alpine habitat is restricted in general.	Meets criteria 1, 3 and 4.

<i>Eriophorum gracile</i> Slender cottongrass	G5 S2	Threatened by expansion of reservoirs on Grand Mesa. Logging without consideration of fen locations. Compaction from snowmobiles	Fen habitat is declining on Grand Mesa in plan area (Austin & Cooper 2015).	wide range to north, CO is southern extent. <u>Edge of range.</u>	Population on Grand Mesa has low population numbers (10-20 plants) and restricted habitat.	Meets all 4 criteria. Also on SWAP list.
<i>Hamatocaulis vernicosus</i>	G5 S1S3	Threats - livestock grazing, hydrologic alterations.	No trend data. 2 occurrences on the GMUG.	“Southern-most occurrence of species”. <u>Edge of</u>	Restricted habitat - fens.	Meets criteria 1, 3, 4.

				<u>range.</u>		
<i>Juncus bryoides</i> Minute rush	G4 S1	Threats - road grading sending sediment into Wager Gulch Iron Fen (Austin pers. comm.). The single occurrence is vulnerable (“small and isolated populations are susceptible to negative impacts from genetic drift and stochastic events”).	Habitat is declining due to sedimentation from road grading.	<u>Edge of range.</u>	Restricted to iron fen habitat on the GMUG (Wager Gulch Iron Fen).	State concern for this species (S1, CNHP). Meets criteria 1, 3, 4.
<i>Jungermania rubra</i> liverwort (no common name)	G3G5 S1S2	Threats - hydrologic alterations from “4 wheel drive trail bisecting it & nearby closed road”.	No species trend data. 2 occurrences on GMUG. Habitat is declining in Wager Gulch due to sedimentation from road grading.	<u>Disjunct</u> on the GMUG.	Restricted habitat - 2 iron fens.	Meets criteria 1, 3 and 4.
<i>Kobresia simpliciuscula</i>	G5 S2	Threats - livestock and moose grazing, dust from heavily travelled trail, illegal off-road vehicle use.	No species trend data. Habitat is declining due to grazing.	Wide species range, Colorado at southern edge. <u>Edge of range</u> (NatureServe 2021).	Restricted habitat - calcareous fens.	Meets criteria 1, 3 and 4.
<i>Listeria borealis</i>	G5 S2	Loss of shaded spruce-fir canopy from beetle kill and timber	“Declining trend in habitat”. 12 occurrences on the	“Colorado populations are <u>disjunct</u> ”.	Restricted habitat - shady spruce-fir forests.	Meets all 4 criteria.

		harvesting are a threat.	GMUG.			
<i>Lomatogonium rotatum</i> Marsh felwort	G5 S2	Impacted by roads, trails, livestock grazing. "Grazing is often heavy in wetlands" (Barry Johnston, 2014".	no species trend data, habitat has declined due to livestock grazing	Wide species range.	restricted habitat--fens. Only about 10 plants. Last observed in 2020 by Gay Austin.	Meets criteria 1, 3 and 4.
<i>Luzula subcapitata</i> Colorado woodrush	G3 S3	"extremely vulnerable to climate change"	no trend data	<u>Endemic</u> to WY and CO, so CO is at southern <u>edge of range</u> . Uncompahgre sites are southernmost in CO.	small population size. Two occurrences in CNHP records, one a specimen with no size information, the other with 15 plants.	Meets criteria 1 and 3 and 4.
<i>Minuartia stricta</i> Bog stitchwort	G5 S2	"highly vulnerable to climate change"	no trend data	"western extent of a <u>disjunct population</u> ", <u>edge of range</u> .	population size is unknown; all CNHP records based on herbarium specimens with no size information.	Meets criteria 1, 3 and probably 4.
<i>Myosurus cupulatus</i> Western mouse- tail	G4 S1	"threatened by unintentional spraying of invasives"	no trend data available	"the GMUG population is the northernmost of the species", <u>edge of range</u> .	only one occurrence	Meets criteria 1, 3 and 4.
<i>Ranunculus gelidus</i> Tundra buttercup	G5 S2	"extremely vulnerable to climate change"	no trend data	<u>disjunct</u>	small population: total of 80 plants in 4 locations.	Meets criteria 1, 3 and 4.
<i>Silene kingii</i> King's campion	G3 S1	"vulnerable to climate change", hikers with dogs. Single documented occurrence in GMUG at high	trend data forthcoming from RMBL	<u>disjunct</u>	low population numbers, only one occurrence, 12 occurrences in	Meets criteria 1, 3 and 4.

		elevation. Three more occurrences reported by RMBL north of Crested Butte			CO, all ranked E but one C.	
<i>Trichophorum pumilum</i> Little bulrush	G5 S2	"subject to impacts (dust, road maintenance) from an adjacent heavily used gravel road"	No species trend data; Habitat has declined due to gravel road maintenance.	"GMUG population is the southern-most of the species", <u>edge of range</u> .	single population, restricted habitat (fens) in GMUG.	Meet s criteria 1, 3 and 4. All fen species should be SCC.

Citations:

Austin, G. and D.J. Cooper. 2015. Persistence of high elevation fens in the southern Rocky Mountains on Grand Mesa, Colorado. U.S.A. Wetlands Ecology and Management 24:317-334.

Austin, G. 2021. Personal communication - HPP transects documented by Barry Johnston of transects with 41 locations of *Physaria rollinsii*. Unpublished document. Gunnison Ranger District, Gunnison, CO.

Colorado Natural Heritage Program. Element Occurrences Records. Accessed 2021. cnhp@colostate.edu

Colorado Parks & Wildlife - State Wildlife Action Plan

Johnston, B. 2005. Sensitive & Threatened Species (16). Unpublished document written for the GMUG. Grand Mesa, Uncompahgre & Gunnison National Forests.

NatureServe 2021. NatureServe Explorer. Online website: explorer.natureserve.org.

Rocky Mountain Biological Laboratory, Crested Butte, Co. Gloria Project, 2018. Wendy Brown, pers. comm.

USDA Forest Service. 2002. USDA Forest Service R2 Sensitive Species Evaluation Form, *Cladina arbuscula*. Unpublished document written for Region 2. Region 2 USDA Forest Service. Lakewood, CO.

USDA Forest Service. 2002. USDA Forest Service R2 Sensitive Species Evaluation Form, *Jungermannia rubra*. Unpublished document written for Region 2. Region 2 USDA Forest Service. Lakewood, CO.