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First name: Paula

Last name: Lehr

Organization:

Title:

Comments: Hello,

Thank you for this opportunity to comment on the GMUG Forest Plan update.

My comments can be found in the attachment.

You may publish my comments.

Thank you, Paula

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[Copied from Attachment]

Comments Regarding GMUG NF Draft Plan Update (from Paula J. Lehr)

I appreciate this opportunity to provide input to your draft Plan. Most of my comments will be limited to alpine tundra plant species with which I have extensive familiarity. By [ldquo]alpine tundra plant species[rdquo] I am referring to plants generally found growing above 12,000[rsquo].

Here is why I believe I can contribute (hopefully!) valuable input to your plan update: I have a Bachelor[rsquo]s Degree from the University of Colorado, Boulder, with a major in Botany, and minors in both Geology and Zoology. During my undergraduate years, I worked for the Institute of Arctic and Alpine Research (INSTAAR) at CU, assisting with various high altitude research projects. I also have a Master[rsquo]s Degree from the University of Colorado, Boulder, in Tundra Botany for which I completed a study on Fossil Ridge (northeast of Gunnison) on the plant communities adjoining a contact between a carbonate and an igneous intrusive substrate at 12,700[rsquo].

I have been studying tundra botany and ecology ever since my undergraduate time, which has now amounted to over 50 years! My specific interest has been to document alpine plant species and communities that grow on carbonate bedrock; in Colorado, only about 10% of alpine tundra has carbonate bedrock (Dr. B. Willard, personal communication). Locally, the Elk Mountains in particular have many areas of carbonate substrate at high elevations which then, in turn, support some rather rare and limited populations of alpine plants.

I have hiked and back-packed in many of Colorado's high mountain areas, but I moved to Gunnison in 1983 and subsequently spent most of the time investigating the tundra of the Elk Mountains, the West Elk Mountains, the Ruby Mountains, and the Sawatch range, in addition to the Fossil Ridge area. I am also a life member, and former Board member, of the Colorado Native Plant Society.

Before getting into my specific comments and concerns, I would like to emphasize that alpine ecosystems are NOT RESILIENT to human disturbance! According to a study in Rocky Mountain National Park on the recovery rates of tundra vegetation after trampling, [dquo]the time-factor in tundra recovery is quite shocking. We estimate that some tundra that has been damaged by only a few seasons of human activity will require hundreds of years, possibly even a thousand, to rebuild a natural and persistent (climax) ecosystem.[rdquo] (Willard and Marr, 1971). Further, as long ago as 1978, it was estimated that in the western U.S., approximately 12% of alpine tundra had been damaged by human activities (Brown, et al, 1978). With the current huge increases of use by recreationalists of our National Forests, and the increasingly serious effects of climate change, I would like to see the alpine tundra areas of the GMUG be given your highest level of protection.

To this end, I would like to plead that the GMUG hire a full-time Forest Botanist. That this is badly needed is evidenced by the fact that the Regional Forester's Sensitive Species list (found, I believe, in the EIS, page 83, Table 52) included not a single plant species! Animal species cannot exist without plant communities, and rare plants and plant communities are just as important, and deserving of protection, as rare animal species and their habitats.

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My comments will address the following, mostly having to do with the Gunnison National Forest (and documented in the CU Herbarium):

1. Suggestions for the additions of several alpine tundra vascular plants, mosses, liverworts, and lichens that were either not included on any of the SCC lists, or that I feel should deserve special attention;
2. A list of alpine vascular plant species (in addition to the above species that were omitted from SCC lists) that I am concerned about because they have very limited distributions, grow on specialized substrates (i.e., carbonate bedrock), or have other limiting factors;
3. A list of tundra locations (in the Elk Mountains) that have unique plant occurrences and that I feel should be protected;
4. My concerns about other things that I would like to see addressed in the new Forest Plan (such as weed control, the importance of quiet use opportunities, the need for a more complete inventory of fen habitats, etc.).

1. Lists of suggested additions to SCC lists:

List of vascular plant species to add to the SCC lists; all are known to occur in Gunnison County:

1. *Boechera* (*Draba*) *lemmonii*. This species is documented in the high alpine from the following localities: North Pole Basin, Conundrum (Triangle) Pass, North Italian Mountain, south of Taylor Pass, and Pearl Pass.

2. *Lycopodium annotinum*. Many records, but mostly from the eastern counties; three records in Gunnison County, all from the upper East River Valley; however, I have also observed it near White Pine and in the O-Be-Joyful drainage.
3. *Salix calcicola*. Only one record for GMUG, from Fossil Ridge.
4. *Stellaria irrigua*. A G4/S3 species (?). Known from San Miguel and Hinsdale counties; in Gunnison County known from North Italian Mountain, and from Copper Creek headwaters and Mt. Belleview in the upper East River Valley.

List of moss species to add to the SCC lists:

1. *Dicranum polysetum*. Only two collections on GMUG; not a high alpine species.
2. *Homatocaulis vernicosus*. Not a high alpine species.
3. *Mielichhoferia elongata* and *M. mielichhoferii*. Known as the "Copper Moss". Grows in wet habitats, on mine tailings. Both species have been collected at both of these locations: north of Red Mountain Pass and south of Schofield Pass (upper East River Valley).
4. *Stegonia latifolia*. This is a fairly high alpine species. Although there are some 22 Colorado localities for this species, there is only one Hinsdale County record ("above Slumgullion Pass" --- I'm not sure if that is in GMUG?). There is no Gunnison County record; however, Bill Weber and I observed it in Virginia Basin.
5. *Tayloria lingulata*. A high altitude, wetland species. There are 14 CO collections, 2 of which are in San Miguel County ("Prospect Basin Fens" --- I don't know where this is,) and 1 in Gunnison County (Rustler's Gulch in upper East River Valley).

List of liverwort species to add to the SCC lists:

1. *Asterella gracilis*. A high subalpine species. 16 Colorado specimens; 4 collections from Gunnison County; I observed it also in Tellurium Basin above Taylor Park.
2. *Jungermannia rubra*. A high elevation wetland/fen species. Only 5 Colorado collections; one from San Miguel County (Ophir Pass Road --- is this in GMUG?); one from Hinsdale County (Wager Gulch Fen); none from Gunnison County, but I am almost positive I've seen it in a number of wetland areas in the Elk Mountains.

List of lichen species to add to the SCC lists:

Note: There is only one high elevation lichen genus, *Aspicila*, to suggest; but there are 5 different species: *A. fruticulosa* (1 collection noted by Roger Rosentretter (2008), but not in CU herbarium); *A. candida* (three collections in Gunnison County --- 2 in Virginia Basin and 1 at Conundrum Pass); *A. filiformis* (one Gunnison County collection --- Cumberland Pass); *A. laevata* (one Gunnison County record -- Virginia Basin); *A. mazarina* (one Gunnison County collection --- Conundrum (Triangle) Pass).

2. List of alpine plant species of concern to me

The following alpine species are present in the Elk Mountains, but many of them occur only in populations that are very limited in numbers and in locations. Many of them are associated with a carbonate substrate. I have observed many of these species in many places that are not represented by collections in the CU Herbarium.

Askellia (Crepis) nana

Astragalus molybdenus (G3/S3)

Braya glabella and B. humilis

Draba globosa (only 1 site, on Fossil Ridge, NE of Gunnison)

Erigeron humilis

E. lanata

Eriogonum coloradense (G2/S2)

Eriophorum altaicum

Gastrolychnis (Silene) kingii

Luzula subcapitata

Papaver kluanense

Physaria alpina

Townsendia rothrocki

Note: I have observed Eriophorum altaicum, Papaver kluanense, and Gastrolychnis kingii in quite a few places that are not documented in the literature or in the CU Herbarium.

3. List of alpine locations in the Elk Mountains with plants that are of concern to me and that I think should beprotected:

Conundrum (Triangle) Pass

North Italian Mountain

Rustler's Gulch, above East River (Eriophorum altaicum population)

Taylor Peak --- area south of Taylor Pass

Avery Peak [ndash] northwest ridge (getting increased hiking use)

4. Miscellaneous comments

Weed control: I am concerned in particular about the control of Linaria vulgaris in remote and high elevation areas on the Gunnison National Forest. Specifically, I am concerned about controlling this weed in Schofield Park which is actually in the White River National Forest, but which is much more easily accessed from the Gunnison side. There are many other infestations in the upper East River Valley that need control.

Documentation of fens in the GMUG: I would like to see a much more complete inventory of fens than currently

exists.

Quiet use: I strongly advocate for the importance of areas set aside, both summer and winter, to escape the noise of ATVs and snowmobiles. I would like to see users that produce noise segregated from users who value the opportunity for silence in our National Forests.

Logging: I am very uncomfortable with the amount of logging proposed in all four of the plans; CO is becoming warmer and drier, and I believe that natural forest regeneration at our high altitudes is no longer feasible (if it ever has been!). Where logging would be appropriate would be near communities and infrastructure that need increased protection from wildfire.

Current preference for Plan D: At this time, I support the adoption, with modifications, of Plan D.

References:

Brown, Ray W., R. S. Johnston, and K. Van Cleve. 1978. Rehabilitation problems in alpine and arctic regions. Reclamation of Drastically Disturbed Lands, Chapter 3. ASA-CSSA-SSA. Madison, WI.

Rosentretter, R. (2008) Common Alpine Lichens and Their Ecological Roles: Species Common or at Least Present in Colorado. Unpublished.

Willard, Beatrice E. and J. W. Marr. 1971. Recovery of alpine tundra under protection after damage by human activities in the Rocky Mountains of Colorado. Biological Conservation: 3(3)181-190.

Again, thank you for both the opportunity to provide my comments and especially for all the hard work that you are doing to revise and update our GMUG National Forest Plan!

Paula Lehr