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Grand Mesa, Uncompahgre and Gunnison National Forests
Attn: Plan Revision Team
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Nov. 2, 2017

Plan Revision Team,

We appreciate the opportunity to comment on the draft assessment reports. We note that as of the current date, the assessment reports for Terrestrial Ecosystems, and Wildlife, Fish, and Plants are not yet available, so we limit our comments to the other reports. We provide some general comments overarching comments, as well as feedback on specific reports.

General Comments

The Forest Plan Revision presents an opportunity to establish a stronger collaborative working relationship between RMBL and the USFS. To put the opportunity within context, in 2017 RMBL had approximately 160 research scientists use our facilities. The research conducted by those scientists was supported by \$10+ million in federal funding, with support coming from the National Science Foundation, National Institutes of Health, and Department of Energy. The Rocky Mountain Research Station, according to its 2013-2014 annual report, has approximately \$70 million in expenditures and maintains approximately 100 research scientists to support a 12 state area. The National Science Foundation, which supports approximately two-thirds of the nation's investment in fundamental discovery, spends approximately \$110 million to support environmental science. ***Consequently the expenditures on research at RMBL represent a significant component of the nation's portfolio of investment in field sciences.***

Furthermore, the volume of research, which on an annual basis is among the highest for field stations, represents a unique opportunity in terms of science informing understanding of public lands on the GMUG, including management. For example, RMBL helped establish non-consumptive water rights in the state of Colorado. Work on water continues to be a primary focus; research being conducted by Lawrence Berkeley National Laboratory is informing management of water quality and quantity throughout the world.

RMBL science informs food security. More is known about pollinators and pollination in the valleys around RMBL than perhaps anywhere else in the world, including long-term trends in pollinator

populations, the robustness of plant food webs to changes in pollinators, and the general role of pollinators in ecosystem services.

RMBL has also impacted national policy. For example, data from RMBL was used during revision of the Clean Air Act to include protections for air in the western US. Because of the link between legislation and science, we operate a weather station for the EPA that is part of the national deposition network for assessing air quality.

Providing more formal recognition of RMBL research as a management priority in the immediate vicinity of Gothic, Colorado would go a long way to facilitating collaboration. Currently RMBL has a special use permit that provides access to the Gunnison, Paonia, and Aspen-Sopris Districts (the latter on the White River). Access to the larger landscape is critical to scientists because it provides them access to a large range of habitats, species, and ecosystems.

RMBL has advocated for the establishment of a special management area in the area directly surrounding Gothic because a significant percentage of our research on public lands occurs in the vicinity of Gothic. ***In 2007 nine of ten groups at the Crested Butte meeting identified this as one of the top priorities for management changes in the Forest Plan Revision.*** Numerous groups have supported this idea, ***including the Gunnison County Commissioners (letter dated Nov. 16, 2010).*** At a meeting Jan. 24, 2011 held with the Region Two Forester (Rick Cables), Tony Dixon (R-2 Deputy Regional Forester), Charlie Richmond (GMUG Fores Supervisor), RA Vann (Region 2 Director of Renewal Resources), Marla Trollan (Region 2 Director of External Affairs), Fran Reynolds (Region 2 Legislative Affairs), Jan Engert (RMRS Assistant Station Director), Todd Mowrer (RMRS Experimental Forest and Range Coordinator), Doug Young (Governor Hicknlooper's Office), Matt Sugar (Senator Udall) we discussed management options to prioritize research and education as a use on the Gunnison District, including an amendment of the Forest Plan. We were told to wait for the forest plan revision process because of USFS workload issues, and uncertainty over the forest planning rules. Now that the Forest Planning Process has restarted, we would like to see this conversation renewed, as has previously been promised.

Additional actions which would promote collaboration between RMBL and the USFS include ***removing unnecessary barriers for research in wilderness*** (recognizing that while one of the reasons for creation of wilderness is to support research, research activities must be conducted within the context of larger wilderness objectives), ***establishment of a three-way partnership*** between the Rocky Mountain Research Station, the Gunnison District, and RMBL to facilitate the flow of information between research and management (a three-way MOU has previously been discussed, but dropped as key USFS personnel have left), ***establish mechanisms for coordination of research*** (because of RMBL's long-term presence, the area attracts additional non-RMBL scientists and the lack of coordination combined with the volume of research can create unintended impacts on the ecosystem and even in some instances, violation of the Animal Welfare Act), and ***creation of a long-term strategy to encourage research***, as appropriate, on federal lands. The Gunnison District currently does an excellent job of managing RMBL research. However, analysis of case studies involving management of research on public lands across the United States suggests that nationally management of research on public lands is highly dependent upon specific individuals, and that management can change dramatically, and often arbitrarily, as key federal personnel turnover. Recognition of the value of working with RMBL, or other scientific partners,

in the Forest Plan provides an opportunity to establish a strategy for integrating science into public land management that will guide future-decision making.

The US Park Service is an example of a federal agency that has benefitted from actively encouraging research by non-Park Service scientists. The Omnibus Act of 1998 explicitly states that the Parks are available for research and requires the NPS to encourage scientific use of the parks, both for park management and broader scientific value, as long as such research is consistent with the Park Service Organic Act.

The Park Service followed up with several administrative initiatives to encourage science, including providing national support for the processing of research applications at the local level, the establishment of research learning centers within parks to encourage science and education, the creation of a Sabbatical-in-the Parks Program, funding support for non-agency scientists, and the establishment of cooperative ecosystem studies units to create stronger linkages between parks and university scientists. Encouraging science has benefitted the Park Service by providing science to inform management decisions on a cost-effective basis, saving costs to taxpayers by reducing litigation and improved decision-making.

While it is unlikely that the US Forest Service will adopt a national strategy for research along the lines of the US Park Service, the volume of research conducted at RMBL, the long history of supporting research (RMBL was established in 1928 and there is a continuity of research that extends through EA Warren to Gothic’s mining days in the 1880’s), the well-established and broad public support of RMBL and its mission, and the economic impact of RMBL on the local community, provide a strong basis for the US Forest Service to take some innovative steps through the Forest Plan Revision Process.

In terms of using RMBL science to inform the assessment and forest plan process, RMBL has an online publications database at rmbll.org/publications that provides access to in-depth information about a range of subjects relevant to the forest plan. Additionally, we list some scientists below who are experts on different areas related to the forest assessment. While we cannot promise their availability, we are willing to help reach out if the forest planning team would like feedback on specific areas. The list can also be used to search the RMBL database for relevant citations. If there are specific areas of expertise that the team wants feedback that are not covered below, there may be other scientists active in the area that we can identify.

Subject Area	Scientist	Affiliation	Notes
Stream Ecology	Dr. Barbara Peckarsky	Univ. of Wisconsin	40+ years
Stream Ecology	Dr. Brad Taylor	NC State	Whirling disease, <i>Didymosphenia</i> , climate change and stream insects
Hydrology	Dr. Ken Williams	LBNL	Research management focused
Hydrology	Dr. Rosemary Carroll	Desert Research Institute	Member of UGRWCD
Ponds	Dr. Scott Wissinger	Allegheny College	30+ years, co-authored wetland textbooks
Ponds/Amphibians	Dr. Howard Whiteman	Murray State	Extensive Chytrid surveys

Pollination	Dr. David Inouye	RMBL	45+ years, UN committee on pollination and ecosystem services
Pollination	Dr. Berry Brosi	Emory	UN committee on pollination and ecosystem services, robustness of ecosystems to perturbation
Pollination	Dr. Nick Waser	Univ. of Arizona	40+ years
Bees	Dr. Rebecca Irwin	NC-State	Long-term population numbers
Bees	Dr. Jessica Forrest	Univ. of Ottawa	Solitary bees
Bees	Dr. James Thomson	Univ. of Toronto	Bee disease
Bees	Dr. Nancy Moran	Univ. of Texas	Bee disease
Butterflies	Dr. Carol Boggs	Univ. of South Carolina	Long-term datasets
Forests	Dr. Chris Still	Oregon State	Tree physiology, aspens
Invasive Plants	Dr. Rebecca Irwin	NC-State	<i>Linaria vulgaris</i>
Invasive Plants	Dr. Jennifer Reithel	RMBL	Adaptive Plant Management
Wildlife	Dr. Dan Blumstein	UCLA	Behavior, 50+ years marmot population dynamics
Carbon	Dr. Aimee Classen	Univ. of Vermont	Soil
Carbon	Dr. John Harte	UC-Berkeley	Climate Change
Carbon	Dr. Kate Maher	Stanford	Hydrology
Carbon	Dr. Brian Enquist	Univ. of Arizona	Plants
Carbon	Dr. Lara Kueppers	UC-Berkeley	Forests
Plant Adaptive Capacity	Dr. Jill Anderson	Univ. of Georgia	Evolution and <i>Boechera stricta</i>
Plant Adaptive Capacity	Dr. Jenn Rudgers	Univ. of New Mexico	Grasses and range
Plant Adaptive Capacity	Dr. Diane Campbell	UC- Irvine	Microevolution and pollinator interactions
Phenology mismatches	Dr. Amy Iler	Chicago Botanic Gardens	Wildflowers
Phenology mismatches	Dr. David Inouye	RMBL	45+ years of phenology data
Phenology mismatches	Dr. Paul CaraDonna	Chicago Botanic Gardens	Wildflowers and bees
Long-term plant demography	Dr. Kailen Mooney	UC-Irvine	Valerian
Long-term plant demography	Dr. Amy Iler	Chicago Botanic Gardens	Aspen sunflowers
Osha	Dr. Emily Mooney	UC- Colorado Springs	
Soil	Dr. Aimee Classen	Univ. of Vermont	

Below we provide feedback on individual chapters.

Terrestrial Systems

1. On Table 18, pg. 50 it might be worth noting that treehopper infestations have had significant and long-lasting impacts on aspen stands. There is at least one stand above Gothic that has been in poor shape since a treehopper infestation approximately 20 years ago. This has probably happened elsewhere.
2. In general, there is some interesting research emerging linking ploidy-level to aspen physiology. These results could inform predictions about changes to aspens (especially with emerging technology that may allow remote and large-scale determination of ploidy levels), as well as inform revegetation strategies.
 Greer BT, Still C, Cullinan GL, Brooks JR, Meinzer FC 2017. Polyploidy influences plant–environment interactions in quaking aspen (*Populus tremuloides* Michx.). *Tree Physiology* :
 Greer BT, Still C, Howe GT, Tague C, Roberts DA 2016. Populations of aspen (*Populus tremuloides* Michx.) with different evolutionary histories differ in their climate occupancy. *Ecology and Evolution* 6:3032-3039
 Greer BT 2017. Differences in Evolutionary History and Ploidy Type Shape the Interactions of *Populus tremuloides* Michx. with Climate Ph.D. Oregon State University.
3. While the draft chapter does talk about potential changes in forest landscapes, it might be worth stressing the potential for historic, dramatic, and unprecedented changes to forest landscapes as they are subject to multiple stressors, including changes in temperature, water availability, and fire.
4. Substantial amounts of research are emerging about the evolutionary capacity of organisms to adapt to the changing environment. While much of the research is currently focused on model organisms (e.g., Dr. Jill Anderson and her work on the plant *Bochera stricta*, work by Heidi McLean and Dr. Joel Kingsolver on *Colias* butterfly species) rather than species that are management targets (except perhaps Aspen as described above), the work does suggest there is significant evolutionary capacity for organisms to adapt to changing landscapes. Furthermore, the growing awareness of the importance of the microbiome suggests the ability of organisms to respond evolutionarily on relatively fast timescales even when the focal organisms have long generation times (e.g., Dr. Ruth Gates' work on coral reefs, climate change, and dinoflagellates). Dr. Jennifer Rudgers has worked on fungal-grass interactions on the GMUG and her work might have implications for range management.
5. Due in part to Dr. David Inouye's long-term phenology research, quite a bit is known about how changing the timing of spring snowmelt will affect wildflower populations. Given their economic importance to tourism, at least in parts of the district, the growing changes in timing among weather and organisms is an important stressor that is well documented, but not mentioned.

Aquatic and Riparian Resources

1. The statement that suggests moving away from inventory and monitoring of aquatic macroinvertebrates seems misguided. On page 26. The rationale is that the streams are being managed for fish, so fish should be monitored. However, the streams are being managed for a wide range of conditions, only one of which is fish. For example, Table 4 on pg. 23 of the draft assessment on Renewal and Nonrenewable Resources, Mineral Resources, and Geological Hazards uses stream insects to evaluate impairment of streams from heavy metals. We believe that nationally the use of macroinvertebrates is a generally accepted tool for assessing a wide range of impacts to streams. Absent a well substantiated rationale, recognizing that streams are

managed for a wide range of uses beyond fish, it would seem inappropriate to move away from monitoring stream macroinvertebrates.

There is also a statement that amphibians are proposed as a monitoring tool because they are susceptible to changes in aquatic environments. However, there are well developed methodologies for streams insects, and changes in stream insects can be linked to changes in aquatic environments (e.g., pollution, temperature/dissolved oxygen, metals). It might make sense to add amphibians, but if monitoring changes is an objective, why drop macroinvertebrates?

Along these lines, we recommend that on page 29 the management directive should be on managing for water quality and habitat integrity. That will serve broader management objectives, including fisheries.

2. There is a statement on page 2 that no information is available for assessing ecosystem function. Dr. Scott Wissinger (Allegheny College) and collaborators are conducting substantial amount of research into ecosystem functioning in ponds on the Gunnison Forest, and the Lawrence Berkeley National Lab (LBNL) is accumulating substantial information on carbon cycling and aquatic systems. While much of that has not been published, the research groups could probably provide an assessment.
3. Dr. Howard Whiteman (Murray State College) has substantial data on chytrid distributions.
4. Dr. Brad Taylor (NC State) has data on whirling disease distribution.
5. On page 6, there is a statement that streams are not changing. However, the data cited has no apparent temporal element, so it is unclear that the statement is supported by the data provided. Dr. Peckarsky has perhaps the nation's longest running dataset on stream macroinvertebrates. When combined with data collected by the Coal Creek Coalition, this region has access to some of the best data available for assessing long-term changes.
6. On page 7, there is a statement that human activities are not likely to affect cold-water fishes at the forest scale. However, warmer ambient temperatures combined with lower flows (associated with earlier run-off from changing snow albedo), could have substantial impacts, as could the spread of *Didymosphenia geminata* (which may well be related to human-driven changes in the phosphorus cycle). We note that the National Water Model may provide opportunities to model stream temperatures, since flow rates have a strong influence on temperature.
7. On page 19 changing albedo of the snowpack is not listed as a stressor, though its impacts on stream flows are substantially greater than climate change.
8. In similar fashion, there is no mention of *Didymosphenia* as a stressor on streams. It promotes disease transmission and reduces the growth rate of fish. A useful reference might be

Taylor BW, Bothwell ML 2014. The Origin of Invasive Microorganisms Matters for Science, Policy, and Management: The Case of *Didymosphenia geminata*. *Bioscience* 64:531-538

9. On page 18 it might be worth mentioning that there are large changes occurring to pond communities. The changing albedo of snow is driving a growing gap between snow melt and monsoons that is changing high elevation aquatic systems in non-linear, but predictable ways. Dr. Scott Wissinger (Allegheny College) could provide data for this.

Watersheds, Water, and Soil Resources

1. The National Water Model (<http://water.noaa.gov/about/nwm>) is a valuable tool for understanding stream hydrology. Weather stations operated by RMBL are being used as part of a much larger network to parameterize it.
2. On page 1, there is a statement that little is known about soil carbon, soil temperature, and soil moisture. There has been quite a bit of work done at RMBL on this. Our weather stations do track soil moisture and temperature, though the data do not go too far back. Here are some references:

Crowther TW, Todd-Brown KEO, Rowe CW, .. , Classen AT, .. , Harte J, et al 2016. Quantifying global soil carbon losses in response to warming. *Nature* 540:104-108

Harte J, Saleska S, Levy C 2015. Convergent ecosystem responses to 23-year ambient and manipulated warming link advancing snowmelt and shrub encroachment to transient and long-term climate–soil carbon feedback. *Global Change Biology* 21:2349-2356

Saleska SR, Shaw M, Fischer ML, Dunne JA, Holman ML, Still C, Harte J 2002. Plant community composition mediates both large transient decline and predicted long-term recovery of soil carbon under climate warming. *Global Biogeochemical Cycles* 16(4):1055

Kueppers LM, Harte J 2005. Subalpine forest carbon cycling: Short- and long-term influence of climate and species. *Ecological Applications* 15(6):1984-1999

Research also links precipitation, soil moisture and carbon uptake. Sloat and collaborators showed that the timing of growing season precipitation is more important for the functioning of ecosystems than the total amount of precipitation during the entire growing season. Plants that experienced a strong foresummer drought exhibited more water stress, and lower rates of carbon uptake from photosynthesis, even during the rainy season. An early spring and hence a dry start to the summer means that when the rains finally do start in the summer the ecosystems do not fully recover.

Sloat LL, Henderson AN, Lamanna C, Enquist BJ 2015. The effect of the foresummer drought on carbon exchange in subalpine meadows. *Ecosystems* 18:533-545

3. On page 27, we wholeheartedly support the shift from managing vegetation coverage for increasing water yield to emphasizing healthy forests and watershed conditions.

Invasive Organisms

1. We would encourage the USFS to adopt adaptive management when applying interventions to control invasive organisms, focusing on applying techniques that have been empirically validated, and avoiding large-scale application of techniques for which there is little or no data that they work.
2. We would encourage using a criteria for success for management of invasive organisms that focuses on achieving larger ecosystem goals, rather than the simple elimination of the invasive organism.
3. On page 5 there is a statement that yellow toadflax is moving onto NFS lands from private inholdings and communities within town boundaries. We believe that the toadflax story is very complicated and note that federal lands have pockets of toadflax in relatively isolated areas well away from communities. These locations are often associated with 100+ year-old mining disturbance, though in some instances, the patches are not associated with any kind of human disturbance. Furthermore, work by Dr. Irwin indicates that long-term population numbers are changing in complicated ways.
4. The chapter is not internally consistent in its use of the term “invasive”. They are originally defined as non-natives, but then the chapter reverts to historical usage of the term that includes plants which are native, but are perceived as harmful for grazing, and potentially spread by grazing.
5. We would encourage greater care in the discussion on larkspur. The Gunnison District has been trying to eradicate or control larkspur since at least 1928 (I have interviewed an individual hired by the USFS in 1928 to grub out larkspur) with little or no evidence that control efforts have had an impact. We note that there is a biocontrol agent that is present, which seems to have spread from elsewhere, which does not seem to have a positive impact on grazing. There are three delphinium species, not two, with the short, early blooming species apparently having a bigger impact on grazing (because of the timing and the difficulty of the cows seeing it). Interestingly, there is also data that cows selectively incorporate the larger, more visible species into their diet, with younger cows occasionally overdosing. Finally, we note that larkspur is a critical resource for pollinators, including *Bombus occidentalis*.
6. An estimate of 25 acres of *Bromus tectorum* on the Gunnison District seems low, though we do not know of quantitative data that would show otherwise.

Carbon

See prior references on carbon stocks in the section on Watersheds, Water, and Soil Resources.

Benefits to People

1. The Red Lady Coalition sponsored a study looking at the economic benefits of fisheries and other amenities. It might be a useful reference.
2. On page 11 it might be worth noting the importance of location neutral businesses. They are a large driver of economic growth, at least in Gunnison County, and are being driven in large part because of the availability of access to public lands and the associated amenities.
3. It might be worth mentioning that access to public lands attracts one of the largest gatherings of scientists. RMBL’s annual budget ranges from \$3-5 million/year, with considerable indirect economic benefits, including designation of Crested Butte as the wildflower capital of the world.

Rangeland

1. We continue to be supportive of the existing ranching operations in the valleys around Gothic. Understanding the impacts of grazing on landscapes often requires understanding an area well. The existing ranching operations have demonstrated a high level of understanding and expertise in managing ranching within the landscapes.
2. At least some aspects of recreation are having negative impacts on ranching, including trespassing, fence cutting, and disruption of grazing operations. We worry that if management is unable to keep up with recreational impacts, it threatens ranching operations and the loss of some the individuals/families with the most experience with the land.

Recreation

1. RMBL's presence and interpretive programs present unique opportunities for recreation.
2. Given limited and declining resources for the USFS, along with increased recreational use, we believe the USFS needs to develop a strategy that encourages collaboration and cooperation with partners in managing landscapes. CMBMA's conservation corps is a great success story of the USFS allowing a partner to maintain trails and communicate with the public. Hopefully the USFS will develop a process for facilitating and encouraging more such partnerships.
3. We note that on page 40 the plan indicates that the USFS may need to decommission infrastructure. It should be noted that this shifts costs to the private sector; RMBL provides a public outhouse that is primarily used by visitors to public lands, and which costs us \$5k/year simply to pump. The USFS should acknowledge the role of partners in providing an infrastructure for visitors and find ways to encourage such partnerships.
4. Additionally, the USFS should adopt strategies that incorporate fiscal limitations. For example, the USFS has started permitting snowmobile access to private properties through non-motorized corridors above Gothic. While we recognize the imperative to provide reasonable access to inholdings, this action substantially increased the enforcement problem of the USFS at a time when it has declining enforcement resources.
5. We would support recreation fees if used to support the infrastructure and personnel needed to manage recreation.
6. On page 11 there is reference to Judd Falls. During peak use in July and holidays, the valley appears to be beyond capacity in terms of the ability to absorb more parking and provide facilities for human waste. Perhaps a marketing campaign could encourage recreationists to visit other areas of the USFS, along the lines of the Tourism Association's mountain biking app.
7. Additionally, we would encourage strategies to increase recreational use of Mt. Crested Butte, given that CBMR has developed facilities (parking, bathrooms, trails) to manage large numbers of people.
8. We perceive that there has been a noted uptick in permitted special events, including during periods of time that are already too busy. We note that during peak use in July and around holidays, the Crested Butte community is beyond capacity to address emergency responses, handle human waste, manage parking, and provide enough beds. We would encourage a strategy for permitting special events that spreads impacts out geographically and temporally.
9. Page 25 suggests that skiing will grow over the next 50 years. It is unclear that the report is internally consistent (e.g., pg. 43 and 44). There is a substantial bit of research that suggests considerable uncertainty about our snowpack over that time period. References are:

Wobus C, Small EE, Hosterman H, Mills D, Stein J, Rissing M, Jones R, Duckworth M, Hall R, Kolian M, Creason J. Projected climate change impacts on skiing and snowmobiling: A case study of the United States. *Global Environmental Change*. 2017 Jul 31;45:1-4.

Dawson J, Scott D. Managing for climate change in the alpine ski sector. *Tourism Management*. 2013 Apr 1;35:244-54.

10. Page 47—there is downscaled climate information available through the National Center for Atmospheric Research as well as through the Department of Energy. Here is a reference to such downscaling work done on the GMUG.

Pribulick CE, Foster LM, Bearup LA, Navarre-Sitchler AK, Williams KH, Carroll RWH, Maxwell RM 2016. Contrasting the hydrologic response due to land cover and climate change in a mountain headwaters system. *Ecohydrology* 9:1431-1438

11. We are curious about the basis for the statement that mountain biking is slowly losing ground to dirt bikes.

Renewable and Nonrenewable Energy Resources, Mineral Resources and Geological Hazards Assessment

1. We recommend closing the East River Valley, Slate River, and Washington Gulch to mining and mineral leasing given the intensity of use for ranching, recreation, and research.
2. We had a hard time reading map 7. RMBL has conducted an avalanche study of the corridor between Mt. Crested Butte and Gothic and we can provide another copy of the report if that would be helpful.

Infrastructure

1. On page 6, there is a statement that the USFS does not post speed limits because of a lack of enforcement. However, we note that Mt. Crested Butte has historically had a presence quite close to the corridor up to Gothic and has previously been willing to enforce speed limit violations. We recommend that the USFS take an approach to establishing speed limits that takes into account proximity to urban areas and associated enforcement, as well as intensity of use.
2. On page 7, would it make sense to reference scientific infrastructure on private lands embedded in public lands?

Land Ownership Adjustment Strategy

1. It appears that providing trail easements to the USFS can significantly undercut the ability of private landowners to manage the impacts of the public on their property. The USFS tightly controls what can be done on trail easements, but lacks resources to respond to emerging problems even as they limit what the private landowners can do to address those problems. Establishing stronger collaborative relationships with private landowners might accelerate the ability of the USFS to obtain and ensure access to public lands.

Specially Designated Areas

1. We appreciate the reference to RMBL on page 17 in the discussion of RNA's. However, it leaves the impression that much of our work is on the RNA when in fact, very little research is conducted there. Maybe this language could be moved elsewhere with a more global analysis provided?
2. Wilderness provides unique research opportunities, in part because most high elevation sites are in wilderness. Management of wilderness for research has at times been arbitrary and not driven by wilderness legislation. Research activities which have trivial or non-existent impacts on wilderness are highly regulated and/or disallowed while recreation has had enormous impacts (you can't walk off the trail at the West Maroon Trailhead without stepping in human feces). Research use in wilderness should be encouraged when it does not impair wilderness values.
3. On page 28, there is a statement that the trails in the RNA are limited to those needed for education and research purposes. However, the report also states that the USFS is supporting camping in the Gothic RNA and there are trails associated with that camping.
4. On page 39, 9 out of 10 groups supported a special interest area for research around Gothic in the previous planning discussion.
5. On page 41, we have provided language for a congressionally designated special interest area.
6. On page 44, Gunnison County has provided written support for a special interest area around Gothic.
7. We suggest removing RNA status from the Gothic RNA. Our experience is that the primary consequence of the designation is to restrict research opportunities. Ironically, the Gothic RNA hosts camping and recreation that have had long-lasting and permanent impacts on the RNA (e.g., a boyscout jamboree with large numbers of tentsites was permitted in the Gothic RNA, there are permanent campsites, and offroad driving has caused noticeable damage), while research which has little to no impact is either not allowed, or requires extensive permitting. We are unaware of any information that supports the Gothic RNA as containing unique habitat or vegetation that is otherwise unrepresented on public lands.
8. In similar fashion, we support maintaining a special area designation for the Iron Fen, but not designation as an RNA. The Iron Fen does contain unique habitat, as well as a plant species, that is worth conserving. We believe the unique nature of the area provides research opportunities that would be foreclosed by designation as an RNA, and which might provide important information for long-term management of the area. The current special area designation appears to provide an appropriate balance between protecting the area and allowing research. Given that the RNA designation would not seem to provide any additional protections, we would like to see management remain unchanged.

We are happy to provide clarification on any of our comments/suggestions. We appreciate the breathtaking scope of the forest plan and the large amount of information to digest and integrate. Please let us know if we can be of any assistance.

Sincerely,

A handwritten signature in black ink that reads "I. Billick". The signature is written in a cursive style with a horizontal line under the first letter "I".

Ian Billick, PhD
Executive Director