



BOARD OF COMMISSIONERS

HILARY COOPER

KRIS HOLSTROM

JOAN MAY

January 29, 2018

Grand Mesa, Uncompahgre and Gunnison National Forests
Attn: Plan Revision Team
2250 South Main Street
Delta, CO 81416

Submitted Via email: gmgforestplan@fs.fed.us; and Via online comment form with attachment:
<https://cara.ecosystem-management.org/Public//CommentInput?Project=51806>

RE: Grand Mesa, Uncompahgre and Gunnison Forest Plan Revision #51806 Draft Forest
Assessments: Air Quality Assessment & At-Risk Species Assessment

Dear Responsible GMUG officials,

San Miguel County (SMC) appreciates the opportunity to provide comments for both the Air Quality and At-Risk Species draft assessments as part of the GMUG Forest Plan revision.

As with previous draft assessment reviews, members of the Board of County Commissioners and County staff kept in mind the questions that the GMUG said it hoped public comments would be focused on in the November 2017 USFS Guide to the draft assessments:

- *Are we on the right track with the information highlighted?*
- *Did we capture what's going well and what's not going well, or are we missing any critical pieces?*
- *And most importantly, do the potential needs for change reflect the major issues that we should concentrate on in plan revision?*

In addition, with respect to the At-Risk Species Draft Assessment, SMC remembers GMUG staff looking for feedback to these questions during the summer 2017 poster session/public meeting in Telluride:

- What plants, fish, animal, and invertebrate species are important to you on the Grand Mesa, Uncompahgre and Gunnison National Forests?
- What do wildlife, fish or plant species you feel may qualify as an SCC? Do you have evidence to validate your concern?
- Do you have any resource conflict concerns that you feel might be impacted by SCC?
- What species are unique to the GMUG and what are your management concerns or habitat conditions that you've observed?
- Are you interested in becoming a Citizen Scientist and helping monitor SCC species?

COMMENTS BY DRAFT GMUG ASSESSMENT TOPIC AND DOCUMENT:
Planning Topic 2: Air, soil, and water resources and quality

a. Specific Comments on Draft Assessment: Air Quality

- **Comment** – The draft assessment states that there is extensive information from air quality emissions inventories, pollution impact modeling, and air quality planning at a regional scale (page 1). It states the BLM 2015 CARMMS study is the only comprehensive dispersion modeling of cumulative impacts from regional sources of pollution. However, the BLM 2016 CARMMS study (March 2016, https://www.blm.gov/sites/blm.gov/files/uploads/program_natural%20resources_soil%20air%20water_airco_quick%20link_CARMMS1.5.pdf) is relevant to western Colorado and should be reviewed and incorporated into this assessment. It appears the CARMMS 1.0 analysis was done in 2015 and the CARMMS 1.5 analysis performed in 2016 builds on the 1.0 analysis.
- **Comment** – A collaborative effort should be made to build on the lichen sampling data collection and analysis work in the future (referenced on page 1).
- **Comment** – GMUG benefits from having academic institutions and local governments that have co-funded scientific studies in the past and present. In response to the GMUG statement on page 2, that there is no comprehensive Forest emissions inventory to estimate emissions from Forest permitted operations, a long-term air quality monitoring plan should be collaboratively developed with a regional task force to leverage knowledge and possible resources so that with a reasonable number of strategically placed monitoring stations there could be data gathered in the future. For example, GMUG could engage Rocky Mountain Biological Laboratory, Mountain Studies Institute, Western State Colorado University, Fort Lewis College and Mesa State University, and local governments, to develop and collaborate on getting funding for a GMUG-wide monitoring plan. Monitoring stations placed across the GMUG could provide information about air quality conditions and trends to filter what is a direct result of activities allowed by the Forest plan vs. coming from outside the region and non-federal non-forest sources.
- **Comment** – San Miguel County has collected PM-10 air quality data for more than a decade and can make this data available from a monitoring station on a County facility located within the Town of Telluride. San Miguel County also has participated in a radionuclide baseline study with Towns of Ophir and Telluride, Mountain Studies Institute, CU Boulder, EPA, to measure baseline concentrations of trace metals and radionuclides associated with uranium ore in water bodies and Aeolian particulates. Mountain Studies Institute can provide data and reports on their findings, which should be incorporated into this assessment and considered best available science.
- **Comment** – Table 2 (page 5) should include the units for the analytes.
- **Comment** – It is unclear of the source and vintage of the data presented in Tables 4-7 (pages 9 and 11). It appears these are from existing signed or draft BLM resource management plans. However, similar to U.S. planning, these plans are developed over many years. Understanding the original data source and date is important.
- **Comment** – San Miguel County is concerned about mercury, ozone, nitrogen, sulfur and other pollutants from air pollution. High mercury levels have been identified in several water bodies and nitrogen within rain and snow is increasing. The nearest ozone monitoring stations (page 15) are at Canyonlands N.P., Mesa Verde N.P, and Gothic (which has no data values gathered). It would be desirable to have functional stations to measure ozone in the

higher altitudes across the GMUG, such as near Lizard Head or Liberty Bell areas within eastern San Miguel County.

- **Comment** – It appears that the author of reference for lichen research performed in 1999 in the San Juan and Rio Grande National Forests should be referenced as “St. Clair”, not “Clair” (<http://gis.nacse.org/lichenair/doc/SanJuanRioGrandeNF.pdf>) on pages 18 and 26.
- **Comment** – Visibility analyses have been conducted for the Class I areas of West Elks, La Garita, and Weminuche Wildernesses and Black Canyon National Park. Jetstream and wind dispersion vary across the GMUG which stretches from the southwestern and southeastern San Juan Mountains, across the Cimarron range to the North Fork and West Elk mountains. Wilderness areas within and adjacent to San Miguel County are managed as Class II areas. It would be desirable for visibility baseline and trends to be captured for these areas. While visibility in Class II areas is mentioned as being expected to increase (page 24), monitoring to prove it is important. Recently, the Nucla power plant was targeted for closure due to air quality concerns in Rocky Mountain National Park on the other side of the Continental Divide. Understanding air quality impacts from sources beyond the GMUG and activities within the GMUG can only occur with an appropriate monitoring network across the GMUG and GMUG counties.
- **Comment** – The draft assessment generally cites good air quality within the GMUG and forecasts of improving air quality in the future, based on expected vehicle emissions reduction and industrial improvements. However, the trend of increasing OHVs within the high country of the GMUG should be incorporated as dust from the increased speed, and a number of these vehicles in the alpine loop roads has the potential to increase particulates.
- **Comment** – On page 24, the assessment states : “...recent ozone monitoring data in cities in proximity to the GMUG area during the last several years shows ozone levels remain just below the established health standard of 70 ppb...projected fossil fuels development will increase air pollution for several criteria air pollutants and AQRVs in Class I and Class II areas, possibly offsetting the gains in air quality forecasted by state planners from improving vehicle emissions efficiency and industrial processes.” The draft assessment also acknowledges (page 24) that climate change could increase air pollution. Where we know from experience and other resources that the increase in average annual and average low temperatures is already more pronounced at higher altitudes in Colorado than at lower altitudes, there should be a monitoring plan implemented to document if there indeed is the CARMMS predicted trend of lowered emissions and especially monitoring of ozone levels on the GMUG, especially at higher elevations.
- **Comment** – The draft assessment should consider trying to explain the agreements or differences between the CARMMS report and the NDAP data in Appendix C of the draft assessment which seems to show that there are exceedances of critical loads for nitrogen and mercury in the vicinity of the GMUG.

COMMENTS BY DRAFT GMUG ASSESSMENT TOPIC AND DOCUMENT:

Planning Topic 5: Threatened, endangered, proposed and candidate species, and potential species of conservation concern present in the plan area

- a. **Specific Comments on Draft Assessment: Wildlife, Fish, and Plants- Identification and Assessment of At-Risk Species with Overviews of Terrestrial Species, Plant Species and Aquatic Species.**

Assessment of At-Risk Species

- **Comment** – SMC agrees that Wilderness and Roadless designations are important tools to conserve important high-functioning habitat with less fragmentation and more connectivity (page 1).
- **Comment** – This assessment is part of the process to determine Species of Conservation Concern (SCC) for the GMUG plan area. The references used were listed as the Regional Forester’s sensitive species list; species listed in NatureServe as G/T1, G/T2, S1, or S2; and other niche sources. SMC suggests that GMUG also specifically reference and consult with Colorado Parks and Wildlife on the development of the list of SCCs (page 2).
- **Comment** – GMUG should also confirm NatureServe rankings accuracy compared to what is found in CNHP references, and ask for any nuances specific to the GMUG from Colorado Natural Heritage Program (CNHP).
- **Comment** – Per CNHP expert botanist, the following should be considered by the At-Risk Species Assessment and for the SCC list:
 - **The following species should be considered due to NatureServe ranks, and are known to occur on the GMUG.**
 - Girgensohn's Peatmoss (*Sphagnum girgensohnii*) G5S1. Known as Taylor Park Exclosure.
 - Baltic moss (*Sphagnum balticum*) G4S1.
 - Flat-leaved bog moss (*Sphagnum platyphyllum*) G4G5S1.
 - A liverwort, no common name. *Jungermannia rubra* (G2G4 S1S2), a liverwort, with 2 populations on the GMUG (Wager Gulch Iron Fen and Ophir Iron Fen). Wager Gulch Iron Fen has impacts from road maintenance.
 - Reindeer lichen (*Cladina arbuscular*) (G5 S2), a lichen, 3 locations on the GMUG including Wager Gulch Iron Fen with impacts.
 - Mud sedge (*Juncus bryoides*). G4S1. Found in the Wager Gulch Iron Fen, and known only from iron fens. The single occurrence on the GMUG is vulnerable (“small and isolated populations are susceptible to negative impacts from genetic drift and stochastic events.”)
 - Balsam groundsel (*Packera paupercula*) G5S1. The single occurrence on the GMUG is vulnerable (“small and isolated populations are susceptible to negative impacts from genetic drift and stochastic events.”) (*Packera paupercula* is listed twice—the second species should be *Pellaea breweri*.)
 - Alpine Arnica (*Arnica Alpina* var. *tomentosa*) Specimen from Taylor Peak on the GMUG. Threats to this location are expected from a mine and roads.
 - Hamatocaulis moss (*Hamatocaulis vernicosus*) G5S1S3. This species has been documented in two fens in the GMUG. (Joanna Lemley, CNHP, personal comm.) Fen species should be given special consideration.
 - **The following species should (or must) be considered due to NatureServe ranks, and although have not been documented on the GMUG, are known to be present within one mile of the GMUG. We recommend that the GMUG model the habitat for these species and survey the potential habitat.**
 - Parish’s alkali grass (*Puccinellia parishii*). Known from state land within one mile of the GMUG near Miramonte Reservoir. The area surveyed by CNHP for this plant did not include the adjacent Uncompahgre National Forest, as it was funded by the state.

- Juniper tumble mustard (*Thelypodopsis juniperorum*). G2S2. This species has been documented within one mile of the GMUG. One occurrence is mapped as a quarter section which touches the GMUG on the northeast corner.
 - Clawless draba (*Draba exunguiculata*) G2S2. This species has been documented within one mile of the GMUG at Cottonwood Pass, on the border of GMUG and San Isabel forests.
 - Rollins' twinpod (*Physaria rollinsii*) G1S1. This has been found near the GMUG in sagebrush habitat. There is abundant potential habitat on the forest and should be surveyed.
 - Boreal rockcress (*Draba Borealis*) G4G5 S2. This species has been documented within one mile of the GMUG.
 - Red alumroot (*Heuchera rubescens*) G5S1. The only two occurrences in Colorado are within one mile of the GMUG on the Uncompahgre Plateau.
 - Little penstemon (*Penstemon breviculus*) G3S2. Documented within one mile of GMUG.
 - Cushion bladderpod (*Physaria pulvinata*) G1S1. Documented on state land at Miramonte Reservoir, within one mile of GMUG. The area surveyed by CNHP for this plant did not include the adjacent Uncompahgre National Forest, as the survey was funded by the state.
 - Brandegee's milkvetch (*Astragalus brandegeei*) G3G4 S1S2. Found within one mile of the GMUG.
 - Flatleaf bladderwort (*Utricularia intermedia*) G5S1. Found within one mile of the GMUG.
 - Hamatocaulis moss (*Hamatocaulis vernicosus*) G5S1S3. This species has been documented within one mile of the GMUG. Fen species should be given special consideration. One of the fens on the GMUG has impacts from a drainage ditch.
- **We recommend including all fen species that are on the “should consider” list or that have been found in GMUG fens, including those not ranked for Colorado:**
- Baltic moss (*Sphagnum balticum*) G4S1.
 - Flat-leaved bog moss (*Sphagnum platyphyllum*) G4G5S1.
 - Flatleaf bladderwort (*Utricularia intermedia*) G5S1. Found within one mile of the GMUG.
 - Hamatocaulis moss (*Hamatocaulis vernicosus*) G5S1S3. This species has been documented within one mile of the GMUG. Fen species should be given special consideration.
 - *Jungermannia rubra* (G2G4 S1S2), a liverwort, with 2 populations on the GMUG (Wager Gulch Iron Fen and Ophir Iron Fen). Wager Gulch Iron Fen has impacts from road maintenance.
 - *Saxifraga hirculus* (G5 SNR). Observed at Hobbs Fen on the GMUG.
 - *Cladina arbuscula* (G5 S2), a lichen, 3 locations on the GMUG including Wager Gulch Iron Fen with impacts.
 - Mud sedge (*Juncus bryoides*). G4S1. Found in the Wager Gulch Iron Fen, and known only from iron fens.
 - Spiny shield lichen. (*Cetrarei aculeata*) G5 SNR Known from Taylor Park Exclosure.
 - Austria Timmia moss (*Timmia austriaca*) G5 SNR. Known from Wager Gulch Iron Fen.
 - Marsh felwort (*Lomatogonium rotatum*) (G5 S2) Observed at Hobbs Fen on the GMUG.

- Girgensohn's Peatmoss (*Sphagnum girgensohnii*) G5S1. Known as Taylor Park Exclosure.
- **Comment** – SMC appreciates that GMUG recognizes the economic value of non-native fish and big game. While these species may not be required to be considered SCCs, they are clearly species of special interest, and there should be standards, direction, and guidelines in the plan for these species to allow for adaptive management and integrated resource management for these species.
- **Comment** – San Miguel County shares public concerns captured by GMUG regarding recreation impacts, especially motorized recreation, on wildlife; concern for wildlife and if there will be a rapid enough species migration to provide resiliency for species affected by the significant loss of habitat due to wildfire or climate change.
- **Comment** – With respect to an idea suggested by the public (page 5), San Miguel County encourages the GMUG to learn about the International Dark Sky Association and initiatives to keep dark skies dark. There are many examples of dark sky tourism and economic benefits. <http://www.darksky.org/>. Designation of GMUG as a dark sky forest should be explored with local communities and counties, some of which do already have “dark sky” regulations in their jurisdictions.
- **Comment** – SMC agrees with the GMUG opinion that pollinator decline is a significant issue of concern (page 6). Native plants and pollinators likely co-developed and are co-dependent on a particular style(s) of pollination offered by specific native pollinators attracted to specific plants. Monitoring and mitigation should be incorporated into the plan. Citizens should be trained and mobilized to help collect data and assist in possible species conservation efforts. Xerces Society is an excellent reference.
- **Comment** – SMC agrees that there is a concern for alpine uplands which are experiencing increasing recreational use by motorized and non-motorized uses, and are vulnerable to climate change.
- **Comment** – Where invasive species are known significant stressors for certain ecosystems, SMC desires that certified weed-free hay is required for all parties, not just recreational livestock but all livestock (commercial/grazing permittee), as invasive such as cheat grass degrade habitat, compete with sensitive plant species and can increase fire risk. If this is impractical forest-wide, it should at least be applied in Wilderness, lands with wilderness characteristics, Roadless areas and sensitive species’ habitat that is especially vulnerable to invasive weeds, such as sagebrush shrub land.
- **Comment** – SMC supports the expert comments of Colorado Parks and Wildlife (CPW) to add or delete specific species from certain habitats generally between pages 10-37 of the assessment and in Appendices.
- **Comment** – SMC supports that the plan should contain desired conditions and management guidelines for wetlands and fens (page 73). However, given the number of imperiled species and species of concern found only within fens, the vulnerability of fens to climate change and disturbance, as well as their importance for carbon sequestration and groundwater systems, they should be protected from anthropogenic and livestock disturbances.
- **Comment** – SMC appreciates the GMUG acknowledgment of the importance of montane-subalpine meadows for carbon sequestration and pollinators.
- **Comment** – Climate change modeling is predicting habitat changes for the year 2060 for those terrestrial ecosystems that are forest types within the upper San Miguel Basin, should incorporate the data and analysis performed for the Upper San Miguel Basin Forest Health Landscape Assessment in 2017: <https://www.sanmiguelcountyco.gov/501/Forest-Health>.

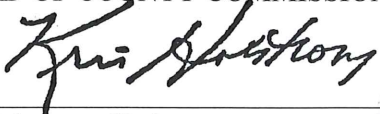
- **Comment** – The riparian and wetland ecosystem integrity (page 24) should be broader than just looking at vegetation condition and function, the hydrologic regime and floodplain connectivity, lack of anthropogenic stressors and physical sensitivity. First, a case can be made that many alpine and subalpine streams are vulnerable to recreation and anthropogenic stressors from recreation, habitat fragmentation, and grazing or mineral activities. Second, some “isolated” wetlands may be connected by complex hydrologic regimes that recharge groundwater systems until they intersect streams and modeling those are likely beyond the scope of this analysis. Important headwaters also occur above the tree line, so it is unclear how this assessment will consider those or fens.
- **Comment** – Fens should be monitored and on-going fen studies that are leveraging resources from Colorado universities, local governments and institutes should be supported. The assessment (page 25) states, “fens are expected to be low to moderately vulnerable to climate change (high confidence; Neely et al. 2011)”, followed by “Fens face uncertainty over time.” This is awkward. Fens may be highly vulnerable to repeated low snowpack years. Fen functionality should be monitored for trends and management standards and direction should be incorporated into the plan to maintain or increase functionality. Compression or removal of peat soils is something that can be caused from anthropogenic disturbances that can be avoided through plan direction. Similar to air quality monitoring; fen monitoring should be explored by a task force to coordinate strategic studies and leverage resources.
- **Comment** – There are additional fen research and data that should be considered by this assessment, for fens in the San Juan Mountains including the lands within Mountain Village and the Telluride Ski Area. San Miguel County appreciates the work of the San Juan Fen Partnership, which is a collaborative group of stakeholders, including the USFS, overseeing ongoing scientific fen research, monitoring and analyses, and public outreach. Dr. David Cooper of Colorado State University and Mountain Studies Institute can be contacted for fen data going back to the late 1990s/early 2000s.
- **Comment** – Climate change discussion (page 36) – we appreciate the inclusion of the brown-capped rosy finch in the species list as a species highly or extremely vulnerable to climate change. We are aware of the ongoing banding and resighting research being conducted to obtain a better understanding of movement patterns and connectivity of breeding populations, the Bird Conservancy of the Rockies in collaboration the Denver Museum of Nature and Science, the University of California at Santa Cruz, Colorado Parks and Wildlife, the US Fish and Wildlife Service, and the US Forest Service have started placing color bands on birds at wintering and breeding grounds. Bird Conservancy of the Rockies is outreaching the need for citizen scientists to enter resighting information into the citsci.org database. We appreciate that the brown-capped rosy finch is included in Table 4 on page 55 in the list of DRAFT potential species of conservation concern in the draft assessment. SMC desires that it be included as a final SCC species along with incorporating ongoing research in the final assessment and Forest plan.
- **Comment** – Climate change discussion (page 37) should consider that cavity nesting birds will be likely to migrate upslope as temperatures warm and will need large enough cavities for replacement habitat, which may be a slower process than the warming. Thus birds like the purple marten should be considered vulnerable to climate change.
- **Comment** – Plan direction for management of roadless areas to retain and even improve habitat connectivity for at-risk species should be considered in the plan to counteract the combined risks of habitat fragmentation (page 39) and climate change.
- **Comment** – Undermining (page 41), while mining activities are subject to certain regulatory laws, it is important for the plan to consider that impacts to be sensitive or at-risk species can occur outside of the mining envelope due to increased dust, noise, traffic, storm water runoff, etc.

on access roads that might be miles away from the mining itself. Cumulative offsite impacts from all types of mineral development, including energy, should be considered.

- **Comment** – Under non-hunting risk factors (page 43), consider aerial recreation including winter aerial recreation as a risk factor. Consider drones as a risk factor for Gunnison sage-grouse and other species. Cliff-dwelling species may be impacted by rock climbing. Gunnison sage-grouse should also be considered at risk with “illegal off-road/trail motorized vehicle use.”
- **Comment** – Page 70, SMC appreciates the comment acknowledging that protection of native species environments can provide economic values to citizens and local service providers. This could be expanded to recognize that ecosystem services include benefits to a whole range of environmental health benefits such as cleaner air and water and reduced need for treatment or reduced occurrences of illnesses such as asthma.
- **Comment** – Page 71, please recognize that the GMUG Forest plan should also have consistency with local plans, such as county codes and regulations. For example, SMC has protections for GuSG, wetlands, floodplains, and geohazard areas and requires hauling permits on county roads; GMUG routes eventually connect to county roads or roads owned by other jurisdictions. Please consider that there will be a USFWS species status assessment for the GuSG forthcoming during the plan revision process that the plan should incorporate when it is available.
- **Comment** – Page 73, in Needs for Change, please consider new modes of recreational travel and recreation activities that have developed since the last plan revision, both in snow and non-snow seasons. Also, the number of forest users has increased dramatically, presenting new habitat impacts from sanitation (or lack of), human concentration areas (trailheads, dispersed camping), and recreation.
- **Comment** – Page 74, SMC agrees that conflicts between wild and domestic species need to be considered.
- **Comment** – Page 74, in consideration of areas not suitable for winter travel, disruption to snowpack and watershed (such as through increased dust on snow, edges accelerating pre-growing season melting/runoff), and resource damage (risk of compression/damage to fens, damage to plants when snowpack inadequate) should be incorporated with consideration of wildlife/sensitive species impacts.
- **Comment** – Pages 106-107 regarding lynx habitat: we are aware of work USFS lynx biologist J. Squires and CPW biologist J. Ivan are doing on monitoring and modeling of spruce beetle infestations on lynx habitat to detect the change and measure dense horizontal cover. It appears that this work might be the subject of the 2013 study referenced on page 107, but we are not sure. It is our understanding that the work of this ongoing study will examine larger blocks of the landscape where there are larger areas of high-quality sites clustered together to guide management response at a scale that is reasonable. Please incorporate ongoing studies into the assessment and Forest plan.

Sincerely,

SAN MIGUEL COUNTY, COLORADO
BOARD OF COUNTY COMMISSIONERS



Kris Holstrom, Chair