White River National Forest

Forest Supervisor, c/o Brett Crary

900 Grand Ave

Glenwood Springs, CO 81601

Via web submission: <https://cara.ecosystem-management.org/Public/CommentInput?Project=59419>

April 6, 2021

Dear Brett,

The following are the comments of Rocky Smith et al on the White River National Forest’s (WRNF) proposed Aspen Management Project, as described in the Notice of Proposed Action (NOPA) available on the project web page.

I. INTRODUCTION

We have numerous problems with a project of the magnitude proposed, as discussed throughout this letter. We are glad to see that some of the most impacting methods, like use of coppice (units for which could be more than 40 acres) and temporary road construction, will not be used in roadless areas. These prohibitions should be retained in any aspen management proposal.

But we strongly question the need for a project of this magnitude - 10,000 acres of “harvesting activities” and another 10,000 acres of “broadcast burning” per decade. NOPA at 17. Part of the reason for the project is the purported loss of aspen acreage due to fire suppression and subsequent replacement by conifer. NOPA at 2, 16. However, with increasing fires due to a warming climate, aspen acreage will likely increase without any manipulation.

Even with aspen’s generally quick regeneration and growth, cutting and burning have impacts, including: fragmentation of wildlife habitat, soil compaction, production of slash that needs to be treated, impacts to scenery, etc. At most, it would seem appropriate to focus aspen cutting on certain localized areas where aspen stands are unraveling, rather than proposing to treat aspen across the landscape.

II. LARGE SCALE TREATMENT OF ASPEN IS NOT NECESSARY OR DESIRABLE

With normal disturbance processes, primarily fire, the acreage of aspen naturally fluctuates over time. In the absence of disturbance, conifers become established under some seral aspen stands and gradually convert the stands to conifer. Then fires or other disturbances occur, resetting the ecological clock to the earliest stages, which is aspen if a root system for this species still exists in or adjacent to the area burned.

Due to human disturbance, aspen coverage on the WRNF probably was at or near an historic high after the early settlement era of roughly 1870 to 1910, when there was much human activity, including logging and deliberately ignited fires, that affected aspen. This followed a period of low disturbance that lasted from 1706 to 1870. WRNF Forest Plan FEIS at D-23.

Activity during the early settlement era resulted in large areas of forested ecosystems regenerating in a short time period:

Much of the aspen… on the White River National Forest…was established by the fires associated with the early European settlement of the forest.

Id. at D-20, D-21. The FEIS also notes that a “large acreage of timber removal” was responsible for regenerating many stands. Id. at 3-78. About 50-60 percent of the WRNF’s aspen stands are believed to have regenerated during this early settlement period. Id. at D-24.

The Forest Plan analysis of aspen concluded as follows:

Based on the high magnitude of the disturbances that occurred within a relatively short period of time, at the end of the [19th] century, existing seral aspen is thought to be at the high end of [the historic range of variability] for overall coverage of the landscape of the White River National Forest.

D-34.[[1]](#footnote-1)

Since then, aspen acreage may have decreased, as the NOPA observes:

…fire suppression over the past few decades has likely resulted in a greater amount of conifer and a lesser amount of aspen across the WRNF.

NOPA at 2; see also id. at 16.

But this decrease should be considered a “normal successional pathway” for aspen stands on the WRNF. FEIS at D-33. Areas now succeeding to conifer probably were conifer-dominated historically. But at the time of the WRNF plan revision (2002), aspen still covered 426,000 acres, or 18.7 percent of the WRNF. Plan FEIS at D-15. This is a significant aspen acreage. Even under the least disturbance scenario (not likely - see below), there would still be plenty of aspen on the WRNF for the foreseeable future, especially with about 50 percent of the WRNF’s aspen stands stable. (See more below.)

With global climate change, fires will become more frequent due to the longer time periods each year with warm and dry conditions suitable for fire spread. Indeed, the Grizzly Creek Fire in 2020 burned 32,631 acres, “consuming a mix of oak brush, conifer and Aspens (sic)”[[2]](#footnote-2), much of which was on the WRNF. It is reasonable to assume that some aspen will regenerate in this burned area, and in some areas that burn in the future.

It should also be noted that stands converting from aspen to conifer are very diverse. They may support wildlife species that can have habitat in either aspen or spruce-fir forests. Logging these areas destroys this habitat.

Importantly, logging such stands may result in poor aspen regeneration. Aspen regenerate best in mollic soils. These soils are maintained by aspen leaf drop and subsequent decomposition each year. With conifer invasion, the leaf drop is reduced and mollic soil thickness decreases With conifers dropping needles, the soils become more acid, making them better suited for conifer regeneration. See Cryer and Murray, 1992, and Johnston, 2001.

The so-called “improvement” cuts, under which conifers “would be harvested where they occur within aspen clones, or within two tree lengths of aspen clones” (NOPA at 21), may be ineffective in achieving a goal of “creat[ing] a two aged aspen stand”. Ibid. If the conifer invasion is sufficiently advanced, the soils may not support much aspen regeneration. Also, if the aspen stand was capable of reproducing under itself, (i. e., it was a stable stand), it probably would already be doing so. Improvement cuts should not be done, especially if an analysis by a soil scientist shows insufficient thickness in the mollic soil layer. Such an analysis must be conducted before improvement cuts, if any, are approved.

Climate change is likely to affect aspen, but the effect is not likely to be entirely adverse to aspen coverage on the landscape. Increased temperatures may make lower-elevation stands more vulnerable to demise from sudden aspen decline (SAD)and/or other drought related impacts; however, more frequent fires and increased CO2 concentration (acting as an aerial fertilizer) may allow expanded coverage. Alternatively, aspen distribution could shift, decreasing in lower-elevation areas on south- and west-facing slopes, and increasing at higher elevations due to warmer soil temperatures. See Morelli and Carr, 2011. Regenerating lower elevation stands is likely to be fruitless if they will die from increasing drought stress within a few decades, as some models show. See, e. g., USDA Forest Service, 2016 at 16-17.

Efforts to maintain the very high acreage of aspen on the WRNF are thus unnecessary and unwarranted. Creating and maintaining age-class distribution by “diversif[ying] landscape-scale age class structure” (NOPA at 3) would require continuous treatment of the WRNF’s aspen stands. That would increase the frequency of disturbance and exacerbate the impacts discussed in these comments. See, e. g., USDA Forest Service, 2016.

It is especially inappropriate to cut stable aspen, which is discussed in the following section.

III. DON’T CUT STABLE ASPEN

According to the analysis in the NOPA (p. 3), the WRNF’s aspen is almost exactly 50 percent stable and 50 percent seral. The Forest Plan FEIS states that the WRNF “has many large aspen stands that show no historic or current conifer invasion”. Id. at D-33. Stable aspen, by definition, will likely maintain itself, as these stands can self-reproduce, and, unlike seral stands, do not need a triggering event like a stand replacement fire to regenerate.

We are especially concerned with the possible use of coppice, i. e., clearcutting, in stable aspen stands. NOPA at 21. Stable stands with less than 500 small trees per acre (see ibid.) will still likely maintain themselves. More seedlings may sprout if the stand is left alone. If coppice is used in stable stands, it must be limited to those stands with severe browsing damage where retention of the entire stand is in question, and only then where damage from browsing of the stands to be regenerated can be minimized.

IV. HOW REALISTIC IS IT TO BURN 10,000 ACRES OF ASPEN PER DECADE?

The proposed action calls for 10,000 acres of “broadcast burning” per decade. NOPA at 17. This term is not defined in the NOPA, but we commonly understand it to mean burning a sizable area, often with little preparation, i. e., mostly burning as is.

As is well known, aspen does not readily burn, as it has a live, moist bark. It would likely burn only under extremely dry conditions. During these times, any ignitions spread rapidly, as all vegetation is very dry if aspen is dry and burnable. Generally, it would not be safe to set “prescribed” fires under these conditions, as it would be very difficult or impossible to control any fires. Any fires in aspen under such conditions could easily escape into adjacent conifer stands or grass/shrublands and take off across the landscape.

V. PROTECT ROADLESS AREA INTEGRITY

From the maps at NOPA pp. 7-14, it is clear that a substantial portion of the possible treatment acreage is in roadless areas. Under the Colorado Roadless Rule (CRR) any cutting, sale or removal of trees is basically prohibited in upper tier roadless areas with two narrow exceptions. See 36 CFR 294.42(b). The proposed treatment areas appear to avoid upper tier roadless areas, except possibly for one area on the Eagle Ranger District near NFSR 600.

In non-upper tier roadless areas, tree cutting, sale, or removal can only be done if : the activity is consistent with the forest plan, “roadless area characteristics will be maintained or improved over the long term”, and one of the listed exceptions, mainly to protect at-risk communities and water supplies, applies. CRR at 36 CFR 294.42(c).

The roadless area characteristics are:

(1) High quality or undisturbed soil, water, and air;

(2) Sources of public drinking water;

(3) Diversity of plant and animal communities;

(4) Habitat for threatened, endangered, proposed, candidate, and sensitive species, and for those species dependent on large, undisturbed areas of land;

(5) Primitive, semi-primitive nonmotorized and semi-primitive motorized classes of dispersed recreation;

(6) Reference landscapes;

(7) Natural-appearing landscapes with high scenic quality;

(8) Traditional cultural properties and sacred sites; and

(9) Other locally identified unique characteristics.

CRR at 36 CFR 294.41.

Given the lack of need to cut aspen on a large scale, as discussed above, it is hard to see that any of the exceptions in 294.42(c) would apply or that any roadless area characteristics would be maintained or improved. At least in the short-term, some characteristics would be degraded if the proposed project is implemented.

While some of the most impacting activities would not be implemented in roadless areas, like coppice (NOPA at 21) and temporary road construction (id. at 22), burns in RAs may require “[i]ncidental cutting of trees, to prepare fire lines, mitigate hazard trees, or create favorable fuel profiles” (id. at 20). Though such lines would be constructed by hand crews (ibid,), fire lines resemble roads, and could provide motor vehicle access to portions of roadless areas, including public motorized access after the project was completed. The ground disturbed would also create areas where noxious weeds could get established or existing populations could spread.

We recommend that any fireline construction be minimized in roadless areas, and that any such lines be created by hand and be fully rehabilitated after completion of project activities in each respective RA burn unit. Rehab should be accomplished by ensuring that native vegetation is re-established on any firelines and other treated areas.

VI. PROTECT LYNX

While lynx prefer Engelmann spruce-subalpine fir forests, a study in Colorado found that lynx do use aspen forests:

Mature Engelmann spruce/subalpine fir forests with total canopy cover of 42–65%, of which 15–20% was contributed by conifer understory tree canopies, were the most commonly used areas, followed by mixed forests of Engelmann spruce/subalpine fir/aspen.

ILBT, 2013, at 52.

Some stands on the WRNF are converting from aspen to conifer. NOPA at 16. These stands may be or soon become good lynx habitat. Subalpine fir, the conifer tree species that typically establishes under aspen, often have crowns that reach to the ground. This can provide the horizontal cover needed for lynx to hunt its favorite prey, snowshoe hare.

Aspen stands with an understory of sapling sized or larger subalpine fir and/or Englemann spruce trees should generally not be treated, especially those at higher elevations. As discussed above, these stands may not regenerate to aspen very well because of soils.

VII. CUTTING ASPEN FOR BIG GAME WINTER RANGE “IMPROVEMENT” WOULD PERPETUATE THE PROBLEM OF DAMAGE TO ASPEN FROM OVERBROWSING

It is questionable if much winter range could be treated because:

Certain areas in the extreme lower elevations of the White River National Forest are used as winter or traditional range [by elk], but the vast majority of the winter range occurs off the [WRNF].

Forest Plan FEIS at 3-115; emphasis added.

Nevertheless, one of the priorities for the project is to “[i]mprov[e] winter range for elk and mule deer”. NOPA at 18.

However, id. at 16 states:

Browse has the potential to further reduce the extent of aspen on the White River National Forest. Heavy browse from elk can impede aspen regeneration, which is influenced by the change in historic predation. In addition, cattle and sheep browse can cause extensive damage to aspen sprouts.

Aspen shoots are a forage species highly desired by elk and likely by mule deer also. Cutting or burning aspen would likely create fresh regeneration, which would be very attractive to elk. Such areas might soon be heavily browsed. This use could continue for up to 10 years, depending on how fast the sprouts grow, i. e., until the trees were tall enough that the leaves were out of reach of the browsing animals. During this time period, elk could heavily browse many acres, damaging even medium sized clones. In some areas, probably not enough aspen could be treated to avoid this problem. Or if there was enough young aspen, the treatment areas would have to be very large, to the detriment of wildlife habitat, watershed integrity, roadless area characteristics (for units in roadless areas), etc.

Any improvement of winter range accomplished by treating aspen would only last during the period the elk or other animals could reach and consume the aspen leaves. As discussed above, this is not likely to be more than 10 years or so. To maintain this winter range, aspen would then have to be cut or burned again. Treating aspen on such a short rotation along with subsequent damage from browsing would exhaust each clone’s carbohydrate resources and would not be sustainable.

Regenerated aspen stands could also be browsed or trampled by livestock for several years after regeneration, increasing the damage to young aspen stands. Livestock would need to be excluded from areas recently treated, probably for 10 years, to minimize this damage.

If the intent of treatment was to improve winter range, then seral aspen stands, if any, at lower elevations (probably below 8000 feet or so) and on south- and west-facing slopes would be treated, as that is where winter range, if any exists in aspen on the WRNF, would be. (See quote from Forest Plan FEIS above.) These stands are the most vulnerable to demise from drought in a warming climate. They might not be able to withstand heavy browsing by elk and other animals.

The NOPA at 20 seems to indicate that stable aspen stands in winter range, up to 65,000 acres, might be burned. Stable aspen stands in winter range should not be treated for the reasons discussed in section III above. There is no reason to treat them because they are in big game winter range, as is discussed here.

Fencing could be used to exclude potentially browsing animals, both big game and domestic livestock, from recently treated areas. However, the amount of fencing needed to exclose 1000 acres each of aspen cut or burned each year would be impractical, both physically and financially.[[3]](#footnote-3) To be effective in excluding elk, fences would have to be at least six feet high. Such fences would also have to be maintained each year, as snow and other physical factors could damage them.

Treating aspen to improve big game winter range is not likely to result in improvement of much winter range, and any improvement could not be sustained. Treatment could also hasten the demise of some lower elevation aspen clones. It should be removed from the proposed action and from the purpose and need for any aspen treatment program or project on the WRNF.

IX. DESIGN TREATMENTS TO PROTECT OTHER WILDLIFE

Many wildlife species use aspen trees for nesting and/or foraging. Treatments must be designed to minimize degradation and destruction of habitat. Even though aspen often readily regenerates and grows rapidly (at least compared to conifers), mature and decadent aspen habitat will not return for several decades or more after treatment.

Aspen should not be cut just because it is decaying. A project objective for management areas in category 5 (except 5.5) and 7.1 is to “[c]onvert decadent and over-mature stands to young stands”. NOPA at 19. Aspen stands considered “decadent” should not in most cases be cut. Decaying aspen trees make excellent habitat for cavity nesting species. Once trees fall to the ground, they will slowly decay into new soil and while doing so, provide habitat for small mammals.

Purple martin (*Progne subis*) is one aspen-dependent species of concern in this regard, and generally. It is a Forest Service sensitive species in Region 2. Its conservation status rank in Colorado is S3, vulnerable. Wiggins et al, 2005, which also noted that

Purple martins are relatively rare breeders in the Intermountain West, and local populations may thus be particularly susceptible to forest management practices that affect their primary breeding habitat, mature aspen.

Id. at 3. Purple martin nest in cavities in mature aspen (ibid.), so retaining old, decaying trees is especially important.

Before any aspen stands are approved for cutting or burning, surveys for purple martin and other species must be conducted. Treatment should not occur near any purple martin populations. Where treatment is proposed, large openings (larger than say 40 acres) should not be created to avoid fragmenting habitat for this and other species. This is particularly important because the proposal places no limits at all on the size of openings, only limiting the total acreage in openings to less than 25% of the area within a given Level 6 HUC watershed, or a 3rd Order stream. NOPA at 18. With no site-specific information provided, the proposed action could result in dozens of 1000-acre clearcuts.

X. PROVIDING FOREST PRODUCTS IS NOT A REASON FOR CUTTING ASPEN.

Part of the purpose and need for the project is to “[p]rovide forest products to local businesses and industries.” NOPA at 17. Currently there is little use for aspen wood in the area. Using it for biomass, one possible use, is not appropriate, as that involves burning the wood that was cut, which increases air pollution, including carbon. This would thereby contribute to global warming. On the other hand, leaving the trees standing allows them to continue to remove carbon from the air and produce oxygen.

Only 30 acres and 120 cubic feet (500 board feet) of aspen per year was predicted to be cut by the Forest Plan FEIS under the experienced (expected) budget for each alternative considered. See id. at 3-600, 601. Thus the impacts of cutting 1000 acres per year has not been disclosed. See more below in section XIV.

Also, there is no indication of how much aspen would be cut commercially and contribute to the allowable sale quantity or the timber sale program quantity (TSPQ). Note that the approved TSPQ is only 124 million board feet per decade. Forest Plan Record of Decision at 27. If a significant commercial use could be found for aspen, cutting 1000 aspen acres per year for a decade could produce enough wood to use up most of, or even on its own exceed, the TSPQ.

XI. SLASH TREATMENT

NOPA p. 21 lists possible slash treatment methods, which include machine pile and burn. We strongly urge the Forest Service not to use this method. Numerous passes by machines to pile slash compacts soils. Burning large piles, or even medium-sized piles composed of larger (greater than about 3 inches in diameter) material results in a long-lasting, hot fire that damages soils by killing all micro-organisms and volatilizing nutrients.

We recommend that various other slash methods be used. Piles should be limited to about four feet high and be composed of material hand-piled if possible, or less than about three inches in diameter.

XII. FIGHT NOXIOUS WEEDS AND CONSERVE RARE PLANTS.

Disturbed ground creates ideal locations for introduction and spread of noxious weeds. Thus all prospective treatment areas should first be surveyed for noxious weeds. Any populations discovered should be eradicated to the greatest extent possible, and by non-chemocal means to the extent practicable.

For areas proposed for burning, it is especially important to eradicate cheat grass (*Bromus tectorum*) prior to any activity. This weed readily burns and reestablishes after fire. It easily dominates sites that have been burned.

Weed surveys can also be used to detect rare plant populations. Such populations must be protected. An area large enough to allow significant expansion around each population should be marked and avoided during project implementation.

XIII. ROAD USAGE FOR PROJECT ACTIVITIES.

The NOPA provides no specifics about which roads would be used to implement the project. Rather, it only states that “[e]xisting National Forest System Roads (NFSR) would be used to access treatment areas and remove forest products”, and that some maintenance or reconstruction could be necessary. NOPA at 22.

Roads providing access to the WRNF get much use for all sorts of activities, especially recreation. This is particularly true in the parts of the forest closest to the Front Range – the Dillon and much of the Eagle-Holy Cross Districts. Timber haul traffic on these roads can easily conflict with other traffic. Recreational and other non-project users of the WRNF need to know what to expect. Early identification of roads to be used and communication to the public is especially important when roads would be used for log haul. Log trucks are the most likely to have conflicts with other users.

The NOPA does not provide an estimate of how many miles of temporary roads might be needed to implement the proposed treatments. Temporary roads would be limited to 1 mile for each 100 acres treated. NOPA at 22. With up to 1000 acres harvested annually, that would mean up to 10 miles of road could be constructed each year. Further, because the NOPA states that one mile of temporary road could be constructed for every 100 acres of logging, NOPA at 22, the project could result in more than six miles of temporary road per square mile in some areas, an extraordinary density that, even after the roads are closed, may continue to degrade wildlife habitat and cause soil erosion.

It is very important not to proliferate the road system. Therefore, the project must contain a design criterion that requires all temporary roads used for treatment or access to treatment units to be closed and obliterated within a year or so of completion of treatment and any follow-up work.

XIV. PROPOSED NEPA DOCUMENTATION WOULD BE INADEQUATE

The WRNF proposes to document this project with an environmental assessment (EA). NOPA at 1. Is this forthcoming EA intended to cover all possible projects (up to 10,000 acres worth each of cutting and burning) for the entire first decade or even longer?

Apparently, additional NEPA, i. e., for implementation of specific treatments, is not contemplated.

After site-specific treatment areas are identified, public notification would be conducted. The Forest Service would accept public input appropriate for the size and complexity of a given treatment area.

NOPA at 18. In other words, the Forest Service might accept additional public input on specifically-proposed treatment areas, if it was considered appropriate, but in any case, there would be no disclosures of site-specific impacts.

Any public input would be at the whim of the Forest Service staff, unconstrained by any guidance, regulation, or law. Because this public comment would be provided outside the NEPA process, the public would have no way to hold the Forest Service accountable if the agency declined to respond to comments, ignored contrary scientific information, or declined to consider reasonable alternatives. In short, the Forest Service would have no obligation to care what the public had to say.

Since the treatment areas are not specified beyond the maps in the NOPA (pp. 7-14) showing 375,000 acres[[4]](#footnote-4) by ranger district, the impacts of project implementation cannot be accurately disclosed in one document, let alone an EA, at this time. As envisioned, the EA would serve as a programmatic document. Additional documentation would need to be done for each project, or groups of them, implementing the program. Cumulative impacts would not be disclosed in one overall EA done before any specific areas were proposed for treatment.

Other projects on the White River National Forest currently allow harvesting and burning of aspen, or are planning additional aspen regeneration activities. The acres proposed under the White River Aspen Management Project would be in addition to those other projects and would not be substituted by activities authorized under different decisions.

NOPA at 17. Since the treatment locations would not be known at the time the EA was completed, neither impacts from the proposed project nor cumulative impacts from various existing and separately-approved projects would not be disclosed. This violates NEPA.

Since impacts will vary depending on where proposed activities are implemented, various courts have required agencies to disclose site-specific impacts in NEPA documents prior to approval of projects. See, e. g.: *New Mexico ex rel. Richardson*, 565 F.3d at 706; *Oregon Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007); *City of Tenakee Springs v. Block*, 778 F.2d 1402 (9th Cir. 1995); and *Southeast Alaska Conservation Council v. U.S. Forest Serv.*, 443 F. Supp. 3d 995, 1007-15 (D. Ak. 2020) (finding that a Forest Service broad-scale proposal which provided no site-specific NEPA analysis violated NEPA and other laws).

Since impacts will vary depending on where proposed activities are implemented, various courts have required agencies to disclose site-specific impacts in NEPA documents prior to approval of projects. See, e. g.: *New Mexico ex rel. Richardson*, 565 F.3d at 706; *Oregon Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007); *City of Tenakee Springs v. Block*, 778 F.2d 1402 (9th Cir. 1995); and *Southeast Alaska Conservation Council v. U.S. Forest Serv.*, 2019 U.S. Dist. LEXIS 161639, 2019 WL 4602809, Case No. 1:19-cv-00006-SLG (D. Ak. Sep. 23, 2019).

To ensure compliance with NEPA, it would best to prepare an EIS for the overall project. Extraordinary circumstances are present, as roadless areas and lynx, a threatened species under ESA, could be adversely affected by implementation of the proposed project. EAs for individual projects or geographically adjacent ones could be tiered to the project EIS.

If the project proceeds as proposed and an EA or EIS is prepared, a draft document should be released for public comment prior to the start of the objection period. Interested parties deserve an opportunity to comment after reviewing the possible impacts of the proposed project.

We are also concerned that the agency fails to define the project’s duration. The project proposes to burn and log a total of up to 20,000 acres of aspen per decade. But the NOPA fails to disclose how many decades this project might continue. It makes little sense for the Forest Service to approve a project with no end date that may long outlive the Forest Plan the project purports to implement.

CONCLUSION

Large scale treatment of aspen as proposed is not warranted. With about 50 percent of the WRNF’s aspen being stable and a likelihood of increasing fire that will cause some aspen stands to regenerate, large-scale treatment is a waste of money and other resources. We recommend the project be dropped or considerably downsized to treating local areas where aspen clones appear to be dying out. Even these areas should not be cut unless browsing damage from elk and livestock use can be minimized.

For any project, roadless area characteristics and lynx habitat must be maintained. An EIS should be prepared, but even an EA should be released for public comment. All temporary roads used for the project must be closed and obliterated after use for the project. Additional public comment must be allowed before implementation of the project.

Sincerely,

Rocky Smith, Forest Management Analyst

1030 North Pearl St. #9

Denver, CO 80203

303 839-5900

2rockwsmith@gmail.com

Alison Gallensky, Principal Conservation Geographer

Rocky Mountain Wild

1536 Wynkoop St., Suite 900

Denver, CO 80202

(303) 546-0214 x 9

alison@rockymountainwild.org

Rosalind McClellan

Rocky Mountain Recreation Initiative

1567 Twin Sisters Rd.

Nederland, CO 80466

720 635-7799

Rosalind.mcclelan@colorado.edu

Robyn Cascade, Leader

Northern San Juan Chapter/Ridgway, CO

Great Old Broads for Wilderness

c/o 555 Rivergate Lane; Suite B1-110

Durango,CO 81301

970-385-9577

northernsanjuanbroadband@gmail.com

Matt Reed, Public Lands Director

High Country Conservation Advocates

716 Elk Avenue | P.O. Box 1066

Crested Butte, CO 81224

866 349-7104

matt@hccacb.org

Bayard Ewing, Chair, Conservation Committee

Colorado Native Plant Society

PO Box 200

Fort Collins, CO 80522

970-593-8595

conpsoffice@aol.com

Christine Canaly, Director

San Luis Valley Ecosystem Council

P.O. Box 223, Alamosa, CO 81101

(719) 589-1518 (office)

(719) 256-4758 (hm office)

info@slvec.org

Jane Pargiter, Conservation Director

EcoFlight

307 L AABC, Aspen, CO 81611

970 429-1110 ext. 2

Jane@ecoflight.org

**REFERENCES**

Cryer, Douglas H., and John E. Murray, 1992. Aspen Regeneration and Soils. Rangelands 14(4), August, 1992.

Johnston, Barry C. 2001. Multiple Factors Affect Aspen Regeneration on the Uncompahgre Plateau, West-Central Colorado. In: Sustaining Aspen in Western Landscapes: Symposium

Proceedings, June 13–15, 2000, Grand Junction, Colorado. USDA Forest Service Proceedings RMRS-P-18.

ILBT (Interagency Lynx Biology Team), 2013. Canada Lynx Conservation Assessment And Strategy. 3rd edition. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Forest Service Publication R1-13-19, Missoula, MT. 128 pp.

Kulakowski, Dominik, Thomas T. Veblen, and Sarah Drinkwater, 2004. The Persistence Of Quaking Aspen (*Populus tremuloides*) In The Grand Mesa Area, Colorado. Ecological Applications 14(5), 2004.

Morelli, Toni Lyn, and Susan S. Carr, 2011. A Review of the Potential Effects of Climate Change on Quaking Aspen (*Populus tremuloides*) in the Western United States and a New Tool

for Surveying Aspen Decline. USDA Forest Service, General Technical Report PSW-235.

USDA Forest Service, 2016. Spruce Beetle Epidemic and Aspen Decline Management Response, Final Environmental Impact Statement. Grand Mesa-Uncompahgre-Gunnison National Forest, May, 2016.

Wiggins, David A., 2005. Purple Martin (*Progne Subis)*: A Technical Conservation Assessment, Prepared For The USDA Forest Service, Rocky Mountain Region, Species Conservation Project.

1. See also Kulakowski et al, 2004, who found aspen coverage had increased since prior to the early settlement period in their study area, which included the Grand Mesa, and another part of the Grand Mesa-Uncompahgre-Gunnison National Forest that is just south of the Battlement Mesa area on the WRNF. They state that replacement of aspen by conifers thus “may be within the range of historical variation”. [↑](#footnote-ref-1)
2. See <https://inciweb.nwcg.gov/incident/6942/>. For the quote on what the fire consumed, click on “What caused the Grizzly Creek Fire?” [↑](#footnote-ref-2)
3. The NOPA contemplates fencing only for small clones. Id. at 22. [↑](#footnote-ref-3)
4. This aspen acreage is “aspen baseline habitat…where management activities could occur” under the proposed project. NOPA at 5. [↑](#footnote-ref-4)