Data Submitted (UTC 11): 9/5/2020 6:00:00 AM
First name: Clinton
Last name: Nagel
Organization: Gallatin Wildlife Association
Title: President
Comments: Dear Forest Service Reviewing Officials:

Please accept the Objection comments in the attached below in behalf of the Gallatin Wildlife Association. If you have questions on any necessary providing material, please ask.

Thank you,

Clinton Nagel

Subject: The following objection pertains to the Custer Gallatin National Forest (and perhaps the National Forest Service as a whole) over proposed actions or lack of them on the issue of climate change and mitigation practices as instilled in the Custer Gallatin National Forest (CGNF) 2020 Final Forest Plan, Publication No. R1-19-07. Since many components of the 2020 Forest Plan are either directly or indirectly related, we will also object on the basis of Climate Change, Carbon Sequestration, Forest Health and the Watershed.

Original comments submitted June 3, 2019:

https://cara.ecosystem-management.org/Public/Letter/1928211?project=50185

Responsible Official:

Mary Erickson, Forest Supervisor, Custer Gallatin National Forest

Standing:

Since Day 1, the Gallatin Wildlife Association (GWA) has been involved in the public forum process concerning the revision of the Custer Gallatin National Forest Plan. We[rsquo]ve attended open houses and publicly commented when told to do so over the past several years. We[rsquo]ve done so because we have a high level of interest, not in a self-centered approach as what[rsquo]s in it for me, but because of our concern over the future of wildlife and wildlife habitat. Our changing climate is very much an ecological driver of wildlife and wildlife habitat and perhaps one that is beyond the control of the Forest Service. During this process, we have become dismayed in what we perceive to be a land-grab by special interest and individuals to get something out of this for them. We are trying to be better than that. Our Objections are sincere. Our previous dates of submission were the following.

March 3, 2018 June 1, 2019 August 13, 2019 October 28, 2019

We will restate what we[rsquo]ve previously stated in our premise of Species of Conservation Concern and on the issue of wilderness. We understand the rationale the Forest Service wants to extoll when they desire objections need to be substantive. You definitely have that right to qualify, expect and set that criteria. But if you do so, then we as a people, as citizens should also have the right to expect the same in return. Those return comments should contain the utmost scientific and rationale dialogue in response to our opposition. We feel so far, the rational and scientific dialogue has been lacking.

The Gallatin Wildlife Association (GWA) has always supported the alternative that we thought best supported the hope and future for wildlife and their respective habitat. We support active climate change measures for the betterment of all wildlife issues and for the health of the planet. In case of the Draft Revised Forest Plan, climate change was not a specific component warranting public comment. However, GWA feels Alternative D mitigated the effects of climate change more than any of the other alternatives. Even though Alternative D is not perfect in many regards, overall, it presents the premise that could become effective and workable to achieve that final goal. But it never seemed to get the serious attention or support that it warranted. As a wildlife advocacy organization, we object to what seems to be a lack of determination and scientific consideration given to maintain the biological diversity and ecosystem integrity of the Greater Yellowstone Ecosystem.

Rationale:

GWA[rsquo]s rationale for making this objection is based upon what we feel is an omission by the CGNF to fully address climate change to the degree required. We[rsquo]re not saying the CGNF fails to recognize climate change or global warming[rsquo]s existence, because they obviously do. The Final Environmental Impact Statement (FEIS) mentions it 645 times in their document, but there is a difference between acknowledgement of it and using it as a premise to base all other management decisions.

And this is where we disagree with the Forest Service. The general philosophy of the National Forest Service has changed over time to a point where they have strayed far beyond their original purpose. GWA believes the U.S. Forest Service, as well as individual forests such as the CGNF, need to change their paradigm when it comes to climate change. There is a whole new science (within the last few decades) that places a new and more critical emphasis on the protection of our forests. Our forests and every forests of the world have a new role to play in keeping our planet in equilibrium from the release and capture of carbon, one we think scientists are just beginning to understand. The forest[rsquo]s role in fighting or mitigating climate change is more important or just as important than a source of wood for construction materials. The forest[rsquo]s ability to sequester carbon, especially old growth forests, is an important factor to consider as our planet seems to be out of balance. This requires a paradigm shift; from one of a utilization rationale to one of protection. This gets us back to the original purpose of our national preserves and forests which was formulated during the late 19th century as to why a civil society needed to protect our nation[rsquo]s forests. People at that time saw value in protecting the forests and the watershed for the benefit of society, beyond the traditional uses. The sooner we instill that new purpose in our

management practices, our world and our country will be better off.

Strategic Plan:

We believe the 2020 Final Forest Plan fails to live up to the intent as required in their USDA Forest Service Strategic Plan FY: 2015-2020. On page 7 of the FEIS, Section 1.8.1 entitled National Strategic Planning, or in the Strategic Plan1 itself, it lists Strategic Objective A as: Foster resilient, adaptive ecosystems to mitigate climate change. The strategic plan can be accessed online at:

https://www.fs.usda.gov/sites/default/files/strategic-plan[2]-6_17_15_revised.pdf

On page 11 of that document, under the banner of Means and Strategies of Strategic Objective A, there is this statement.

[ldquo]Develop and apply detection, prediction, prevention, mitigation, treatment, restoration, and climate adaptation methods, technologies, and strategies for addressing disturbances such as wildfire, human uses, invasive species, insects, extreme weather events (e.g., storms), and changing climatic conditions.[rdquo]

Where in the 2020 Final Forest Plan has there been a development or application of climate adaptation methods? What we see is the same old Forest Service policies used over the past century or so. The only difference we see is the emphasis placed upon mechanized and motorized recreation. GWA does not see the commitment, the commitment we think necessary to make a fundamental change in the forest of today in spite of references to it.

Shouldn[rsquo]t we see a Component of Climate Change?

GWA has raised the question in our comments of June 2019, why is there no component on climate change? We recognize climate change is beyond the sole capability of the U.S. Forest Service, let alone the forests of the CGNF. One forest is not going to alter, manage, or even mitigate climate change in a substantial way on a global scale. But utilizing the right practices could alleviate conditions in the forest from getting worse. But the use of the right practices on the CGNF in alignment with other land-use management agencies around the world could have the capacity to perhaps mitigate climate change to some degree. It is obvious that the CGNF won[rsquo]t be successful alone, but help from consistent policies from a global effort can surely make a difference. On page 109 of GWA[rsquo]s submitted comments of June 2019, we raised these two questions.

1.
Shouldn[rsquo]t climate change be in and of itself; its own component?

2. Shouldn[rsquo]t there be standards and guidance in how the forest is going to address climate change as it pertains to species of flora and fauna?

If there was an actual component of climate change, it would have made the issue easier to measure whether it[rsquo]d be success or failure. For then, we could have had standards and guidance in our actions. As a result, Alternative F and all alternatives cannot offer us that assurance.

Climate change and the 2012 Planning Rule:

We would like to repeat here some comments from our 2019 submission.

GWA: There must be something totally amiss in either how we are interpreting or how we are reading the DRFP. We say that because GWA sees a total disconnect between the DRFP and the DEIS and between the DRFP and the 2012 Planning Rule. We opened this discussion on climate change with words right out of the mouth of the DEIS. But we aren[rsquo]t seeing the appropriate concern in the draft plan itself. The 2012 Planning Rule specifically addresses climate change. On page 21176 of Federal Register2 / Vol. 77, No. 68 / Monday, April 9, 2012 / Rules and Regulations, there is this:

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5362536.pdf

[ldquo]Forest Service scientists have been studying and assessing climate change effects on forests and rangelands. Forest Service Research and Development provides long term research, scientific information, and tools that can be used by managers and policymakers to address climate change impacts to forests and rangelands. Climate change related activities are carried out within research stations covering the whole country. In 2009, the Agency issued guidance for climate change considerations to provide the Agency with the support needed to incorporate climate change into land management planning and project-level NEPA documentation.[rdquo]

This allows us to ask one last question in our rationale. This question comes from page 108 in our comments of June 2019 submission, but has been slightly altered to reference Alternative F.

1. Why aren[rsquo]t we seeing [ldquo]Agency issued guidance[rdquo] on climate change being adapted into this policy, the 2020 Final Forest Plan?

These are the reasons why we have suspicions over how these references to climate change will really make a difference on the ground since we fail to see the underlying premise being carried out by the CGNF. Let it be said, as it is said on page 63 of the FEIS:

[ldquo]In all alternatives, climate change is anticipated to increase the frequency of large wildfires and increased smoke impacts.[rdquo]

In other words, climate change is going to have negative impacts on all aspects of our natural forests. If there will be wildfires, there will be impacts on vegetation, wildlife, wildlife[rsquo]s habitat and food supply, watershed and forest health.

We Object Because:

We object to Alternative F of the 2020 Final Forest Plan because of what we see is a lack of coherent climate change policy. There needs to be a sustaining intricate balance of our carbon and water cycles across the globe and until man has restored that balance, there will be negative impacts on these natural cycles and ecosystems.

Climate Change, Carbon Sequestration, Forest Health and the Watershed:

All of these facets of our natural world are directly and indirectly related in simple and complicated ways. Of those relationships, it is these first three that will determine the quality of the watershed.

Our Watershed:

The final end product, our watersheds, reflect the workings and impacts of what has happened on the natural landscape through time. The health of our watersheds provides hints and insights to the health of our natural systems. With that said, we found this statement in the FEIS on page 119.

[ldquo]Overall, alternative D would provide the greatest ecological benefit to aquatic species habitat, riparian areas, and watersheds.[rdquo]

[ldquo]Plan objectives that improve ecological conditions for aquatic species habitat, riparian areas, and watersheds are highest in alternative D and lowest in alternative E. Alternative D would move toward the

watershed, aquatic, and riparian desired conditions faster than the other alternatives, and alternative E would move toward the watershed, aquatic, and riparian desired conditions slower than the other alternatives.[rdquo]

This is of no surprise, of course, for it is one of the reasons GWA had preferred Alternative D from the beginning. Obviously, there are other considerations to be taken into account when the FS considers a Forest Plan, considerations other than just the quality of the watershed. But let[rsquo]s face it; the protection of our watersheds is one of the reasons the Forest Reserve concept in the 1890s became established, even before the existence of the Forest Service.

And then there is this paragraph (divided into three here) found on page 111 in the FEIS under the title of [ldquo]Effects of Land Allocations for Recommended Wilderness, Backcountry Areas, and Eligible Wild and Scenic Rivers[rdquo].

[ldquo]Many watersheds in the Absaroka Beartooth; Madison, Henrys Lake, and Gallatin Mountains; and Bridger, Bangtail, and Crazy Mountain geographic areas that support the healthiest populations of native trout and other aquatic species, currently have their headwaters protected through lands managed as Congressionally designated wilderness areas (Lee Metcalf and Absaroka Beartooth) or inventoried roadless areas.

These areas are the building blocks of a conservation network. Naturally functioning headwaters have a large influence on the function of downstream reaches (Vannote et al. 1980, Meyer et al. 2007) and would be particularly important as refuge habitat for cutthroat trout, and other species, in light of potential effects of climate change (Isaak et al. 2015).

The best remaining trout habitat conditions are found in wilderness and unroaded landscapes (Rhodes et al. 1994, Kershner et al. 1997). Across the west, roadless areas tend to contain many of the healthiest of the few remaining populations of native trout, and these are crucial to protect (Kessler et al. 2001). Roadless areas are a source of high-quality water essential to the protection and restoration of native trout. The high-quality habitats in roadless areas help native trout compete with non-native trout because degraded habitats can provide non-natives with a competitive advantage (Behnke 1992). Roadless areas tend to have the lowest degree of invasion of non-native salmonids (Huntington et al. 1996).[rdquo]

Alternative D was not chosen by the Forest Service and because of that, GWA believes that the CGNF watershed is poorer for it. The quality of a watersheds streams and waters are an indication of the quality of the watershed. The more impact from man, no matter what the source, we will degrade the quality of the watershed and thus the quality of the watershed[rsquo]s waters.

Of course, our watershed will not only be impacted by climate change but by further intrusions of man whether it

be recreational, timber harvesting, road construction or grazing. All of these activities will have an impact on soil compaction, erosion, invasive weeds, and on and on. In our previous and original comments, GWA submitted a lengthy comment on the impact all of these actions will have on our watersheds. None of them are to be taken lightly.

GWA will provide a new piece of scientific research here from the U.S. Forest Service Rocky Mountain Research Station in Moscow, Idaho, there is this table and conclusion.

Reference provided here.

Elliot, J. William3, Page-Dumroese, Deborah, Robichaud, Peter R, The Effects of Forest Management on Erosion and Soil Productivity, U.S. Forest Service RMRS, Moscow, Idaho.

https://forest.moscowfsl.wsu.edu/smp/docs/docs/Elliot_1-57444-100-0.html#:~:text=In%20forest%20conditions%2C%20surface%20runoff,of%20the%20surface%20litter%20cover.&text=Erosion%20generally%20decreases%20productivity%20of,of%20nutrients%20in%20eroded%20sediment.

TABLE 12.1
Typical Effects of Forest Disturbances on Productivity
PracticeImpactProductivity response
RoadsArea removed from productionUp to 30% of forest area losta
FireOrganic matter loss
Disease reductionLong-term effects not measured; observed loss of organic matter leading to growth reduction from water and nutrient stressb
CompactionReduced water availability and increased runoffHeight reduction of 50%c or more
Volume reduction up to 75%d
Tree harvestLoss of organic matter and site disturbanceUp to 50% reduction if site is severely compactede

a Megahan and Kidd, 1972.
b Harvey et al., 1979.
c Reisinger et al., 1988.
d Froehlich, 1978.
e Amaranthus et al., 1996.

The first paragraph of the stated Conclusions states the following.

[ldquo]In our overview of the impacts of forest management activities on soil erosion and productivity, we show that erosion alone is seldom the cause of greatly reduced site productivity. However, erosion, in combination with other site factors, works to degrade productivity on the scale of decades and centuries. Extreme disturbances, such as wildfire or tractor logging, cause the loss of nutrients, mycorrhizae, and organic matter. These combined losses reduce long-term site productivity and may lead to sustained periods of extended erosion that could exacerbate degradation.[rdquo]

All these actions that will be talked about here will affect the quality of our watershed and forest health. They are intertwined.

Ecological Integrity and Climate Change:

One of the concerns and goals that GWA is striving for on the CGNF is to protect the ecological integrity which the forests currently possesses. Of course, one way to maintain that integrity is to hold on to inventoried roadless and wilderness areas when possible. It is that integrity that helps determine a forest[rsquo]s health. On page 165 of the FEIS under the title of Ecological Integrity, there is this statement.

[ldquo]Assumes that ecological systems that retain their native species and natural processes are more resistant and resilient to natural and anthropogenic stresses over time (including climate change).[rdquo]

[ldquo]Ecological integrity has emerged as a key component of ecological restoration and adaptation to climate change (Suding et al. 2015) and a useful framework to guide management of terrestrial ecosystems (Carter et al. 2019).[rdquo]

This highlights our position. In order to mitigate the climate change affects upon our forests, we need to maintain the forests ecological integrity. An example of our concern can be found in the quote below, on page 119 of the FEIS. As this statement refers to problems pertaining to two species of conservation concern, GWA wonders why this explanation is not used for other species that may be considered in that regard. A stressor such as climate change will affect all other species if it hasn[rsquo]t already. If the Forest Service is concerned about climate change reaching beyond their authority to manage, why not maintain the ecological integrity as much as possible?

[ldquo]Due to the small size of the populations and their limited habitat on the Custer Gallatin the Westslope cutthroat trout and the western pearlshell mussel are vulnerable to stressors beyond the authority of the Forest Service to manage; most notably the risk of non-native trout and climate change effects. In this case, the plan must provide direction that will contribute to maintaining long term persistence of the species within their range.[rdquo]

Along the same lines, when you talk about biological integrity, you are also referring to the biological diversity of the ecological system. You[rsquo]re most likely not going to have one without the other. With that there is this statement found in page 106 of the FEIS.

[ldquo]As climate change continues to increase air and water temperature, western pearlshell and westslope cutthroat trout would be negatively affected because increased temperatures would also limit the extent of the temperature sensitive westslope cutthroat trout thereby even further limiting the extent of the western pearlshell.[rdquo]

This kind of logic can and should be applied to other species on the forest. Which is why GWA has asked for additional species of conservation concern to be considered and acted upon favorably.

Hopefully we can begin to see how so many facets of our National Forests are connected, which is why we become so frustrated when we see the truth and know the truth, but we don[rsquo]t act upon the truth.

The Acknowledgement of Climate Change:

These following passages from the FEIS are simply stated here to showcase the point that the Forest Service is acknowledging the future effects of climate change upon the forest. Passage found on page 140 in section 3.5.3 Environmental Consequences [ndash] Effects Common to All Alternatives.

[ldquo]Conservative future climate scenario models predict that the effects of warming trends result in a lengthened growing season, decreased number of days with snow on the ground, earlier peak snow occurrence, and increased water stress for all sites in the study, which represent temperature and precipitation spectrum in the forests of the Rocky Mountain Region (Boisvenue and Running 2010). Mountain ecosystems can shift upslope, reducing habitat for many subalpine and alpine tundra species. Mountain tree line is predicted to rise by roughly 350 feet for every degree Fahrenheit of warming (Environmental Protection U.S. Environmental Protection Agency 1997).[rdquo]

And then there is this found on page 167, Climate Change Considerations and Assumptions:

[ldquo]In addition, to better understand the effects of climate change at a more local scale, the Custer Gallatin Plan Revision Team collaborated in a series of workshops with a diverse team of scientists and land managers from universities, government agencies and non-governmental agencies to specifically review and assess the

revised plan[rsquo]s approach to climate change. The results of this effort are discussed in more detail below and are also available at Hansen et al. (2018).[rdquo]

This is the admission that the Custer Gallatin Plan Revision Team has had training and scientific presentations to the effects of climate change. The question is: was this science based? The litany of passages from the FEIS stated below appears to be a reasonable presentation of what most scientist would expect from climate change. GWA[rsquo]s position is the science presented here seems to dictate a more active participation in mitigating these effects than what the actual 2020 Final Plan indicates.

Page 60 - Effects Common to all Alternatives

[ldquo]Climate change would likely increase smoke emissions for each alternative. Higher temperatures are anticipated to result in decreased snowpack, earlier springtime snow melt, and longer fire seasons would increase the frequency and area burned by wildfires.[rdquo]

Page 167 - Climate Change Considerations and Assumptions

[ldquo]Climate change is expected to continue and have profound effects on the Earth[rsquo]s ecosystems in the coming decades (IPCC 2007). Description and analysis of these effects relied on a broad array of recent scientific literature and in particular a recent meta-analysis of climate change and potential effects published for the Northern Region Adaptation Partnership (Halofsky et al. 2018c;a).[rdquo]

Page 172 [ndash]

[ldquo]While there is high uncertainty in projections of future climate and vegetation response, there is high agreement that some trends are likely, and these should be considered by management.[rdquo]

Page 179 [ndash]

[ldquo]Climate strongly influences fire regimes. Historically, extended periods of warm and/or dry conditions tended to be associated with larger, higher severity, and more widespread fires. Shade intolerant, fire resistant species may still have developed into mid and late successional stages where low severity regimes were maintained; as did shade tolerant species in areas spared from fire. Periods of cool or moist climatic conditions

tended to be associated with smaller and less severe fires.[rdquo]

Page 216 [ndash]

[ldquo]The potential effects on intermittent stream ecologies from these aspects of climate change could decrease runoff with more perennial streams becoming intermittent streams, losing hydrologic connectivity and reducing habitat for species dependent on perennial flow.[rdquo]

Page 289 [ndash]

[ldquo]The effect may be due to direct climate-related factors, such as increased temperature and greater drying of forest fuels; or indirectly, related to potential changes in forest composition and structure due partly to climate change. These climate-induced changes in fire regimes could have substantial impacts on ecosystems, with associated effects to communities and economies (Littell et al. 2009b).[rdquo]

All of these statements are profound in their own right and alarming as well. To think our forests are in danger of drastic change, to the point that we may not recognize them as we do now is perhaps life altering for some, simply just mind boggling for others and no doubt, some are in a state of denial. But we ask that Forest Service officials, other wildlife and land-management agencies, political leaders of the county, state and country to think of how all these climate change effects will impact wildlife. This should be the alarm.

In laying out these acknowledgements, GWA asks the question: exactly what is the Forest Service planning to do to mitigate these impacts. We don[rsquo]t see it in the 2020 Final Forest Plan.

Timber Harvesting and Forest Health:

The following paragraph seems to indicate a disconnect between the Forest Service[rsquo]s philosophy of timber management and the science which states caution should be the guiding rule. This paragraph is found on page 304 of the FEIS.

[ldquo]In general, management activities (such as timber harvest) would initially directly reduce carbon stocks on

the national forest, though minimally. However, this initial effect would be mitigated or even reversed with time, reducing the potential for negative indirect and cumulative effects. These short-term losses and emissions are small relative to both the total carbon stocks on the forest and national and global emissions. Further, the proposed activities would generally maintain and improve forest health and supply wood for forest products, thus having positive indirect effects on carbon storage. The Custer Gallatin National Forest will continue to be managed to maintain forests as forests and the many ecosystem services and co-benefits the forests provide, including carbon uptake and storage. The following management strategies are available under all alternatives and influence carbon uptake and storage potential:[rdquo]

This explanation seems to minimize or rationalize the negative effects of timber harvesting and forest health projects. Yet, the FEIS has laid out in fairly explicit terms some of the environmental damage which has already done and what is potentially yet to come. In addition, GWA has provided science in our original comments back in June of 2019 that contradicts this minimalization. As long as there is this attempt to accentuate the positive (as one-sided as it may be) of timber harvesting and forest health projects and ignore the science which counters those claims, we don[rsquo]t see much progress being made in the attempts to counter climate change. For there will always be the impetus for timber harvesting and production.

Then there is also this statement found toward the bottom of page 304 of the FEIS.

[ldquo]Decrease forest densities and fuel conditions to reduce the risk of large, stand-replacing disturbance from insect, disease, and fire. Although this strategy initially reduces carbon stocks, it can lower risk for greater carbon stock losses and emissions in the future (Wiedinmyer and Hurteau 2010).[rdquo]

This statement is also making the claim that it is better to do these treatments now rather than later because in the long run, over time, there will be greater reward in terms of carbon sequestration. The trouble with these policies is that they are based upon some assumptions of the future and ignoring the realities of the present.

First, Climate change is a problem now. It will be in the future as well, but it is a problem now and if we are serious in mitigating climate change before the agency becomes (as the Forest Service claims) vulnerable to stressors beyond the authority of the Forest Service to manage; we should act now; not kick the can down the road.

Second, there will always be the push for more logging, whether it be for harvesting or for production. When is a good time to make a change? By reacting later rather than now, we are just pushing the problem for future generations.

Basically, what GWA is asking for is a change in the Forest Service[rsquo]s premise; a change in the

agencies[rsquo] philosophy. We know this will be a hard sell, but one that is needed in order for there to be a positive change in the management of the resource and for the health of the planet.

GWA makes this statement.

[ldquo]If concerned citizens are wondering why there seems to be this disconnect between what the Forest Service does and what they say (in terms of climate change and the need for timber harvesting); I think that can be explained by excerpts from their own FEIS[hellip][hellip]The Forest Service is using their own science sources that allows them to rationalize their desired and traditional actions. Needless to say, these are different than the sources we rely upon. Their sources provide cover to the policies they proclaim.[rdquo]

We believe the following sentence best explains the Forest Service[rsquo]s position, a position found on page 304 in the FEIS.

[ldquo]This approach to management of forests for purposes of contributing to climate change mitigation is supported by a number of scientific sources (Ruddell et al. 2006, Hurteau et al. 2008, Reinhardt and Holsinger 2010, Ryan et al. 2010, Wiedinmyer and Hurteau 2010, North and Hurteau 2011, Schaedel et al. 2017).[rdquo]

They continue this line of thought on page 307 in the FEIS.

[ldquo]Plan components in the action alternatives are designed to provide for ecological integrity and resiliency to disturbances. Potential negative effects may be mitigated and completely reversed with time as the forests regrow. Over the longer term, the activities allowed by the plan are likely to increase carbon storage and reduce emissions, by reducing disturbance risk and storing carbon in wood products. The management mechanisms applied in all plan alternatives are consistent with internationally recognized climate change adaptation and mitigation practices identified by the IPCC (Intergovernmental Panel on Climate Change 2007b).[rdquo]

There is a problem with this line of thinking. This assumes that our forests are going to regrow back as we know them now. With climate change occurring at a faster and faster rate of acceleration, there is no assurance our forests are going to be recognizable as they are now. New science is beginning to show this.

We urge the Forest Service read and analyze these scientific journals and articles as they provide a new perspective on our reality of reclaiming our forests. We ask that the Forest Service especially look at references 5, 6, and 7.

1.
https://www.cpr.org/2020/09/01/colorado-wildfires-forests-regrow-climate-change/#:~:text=Because%20Of%20Climate%20Change%2C%20Some%20Won't%20Grow%20Back%20The%20Same,-By%20Michael%20Elizabeth&text=Baby%20trees%20don't%20thrive,covered%20in%20a%20lush%20forest.4

1. https://www.bbc.com/future/article/20200521-planting-trees-doesnt-always-help-with-climate-change5

1. https://www.newscientist.com/article/2196213-forests-are-becoming-less-able-to-bounce-back-from-wildfires/6

1. https://www.forbes.com/sites/jamesconca/2020/05/31/climate-change-driving-forests-to-smaller-and-younger-trees/#508f157827877

1.
https://www.pnas.org/content/116/23/113198

2.
https://fireecology.springeropen.com/articles/10.1186/s42408-019-0032-1#:~:text=Conclusions,source%20trees%20survived%20the%20wildfires.9

3.
https://academic.oup.com/bioscience/article/70/8/659/585906610

To summarize our point, it can best be stated in the Abstract of reference 7.

[ldquo]Changing disturbance regimes and climate can overcome forest ecosystem resilience. Following high-severity fire, forest recovery may be compromised by lack of tree seed sources, warmer and drier postfire climate, or short-interval reburning. A potential outcome of the loss of resilience is the conversion of the prefire

forest to a different forest type or nonforest vegetation.[rdquo]

Climate Change[rsquo]s New Paradigm:

GWA has been stating for awhile that there needs to be a new paradigm or premise practiced by the Forest Service as it develops management policies related to climate change. We are glad to see we finally have some support for the cause as shown in the following reference below.

GWA has presented many sources of scientific research on the subjects of climate change and carbon sequestration in our original comments. But we would like to add one more here and showcase an article captured in the Proceedings of the National Academy of Sciences (PNAS). The article published in the May 2, 2017, Vol. 114, no.18 edition entitled [ldquo]Adapt to more wildfire in western North American forests as climate changes[rdquo] by Schoennagel11, Tania. Et al; tells us that we need to change our premise, change our paradigm when it comes to wildfires. A couple of passages from the article.

Page 4583:

[ldquo]Our key message is that wildfire policy and management require a new paradigm that hinges on the critical need to adapt to inevitably more fire in the West in the coming decades. Policy and management approaches to wildfire have focused primarily on resisting wildfire through fire suppression and on protecting forests through fuels reduction on federal lands. However, these approaches alone are inadequate to rectify past management practices or to address a new era of heightened wildfireactivity in the West (11[ndash]14).[rdquo]

Page 4584

[ldquo]A paradigm shift now in approaches to WUI development and management of fire and fuels can yield tremendous benefits to society later.[rdquo]

Page 4586

[ldquo]Managing forest fuels is often invoked in policy discussions as a means of minimizing the growing threat of wildfire to ecosystems and WUI communities across the West. However, the effectiveness of this approach at broad scales is limited. Mechanical fuels treatments on US federal lands over the last 15 y (2001[ndash]2015) totaled almost 7 million ha (Forests and Rangelands, https://www.forestsandrangelands.gov/), but the annual area burned has continued to set records. Regionally, the area treated has little relationship to trends in the area burned, which is influenced primarily by patterns of drought and warming (2, 3, 20).[rdquo]

[ldquo]Therefore, roughly 1% of US Forest Service forest treatments experience wildfire each year, on average. The effectiveness of forest treatments lasts about 10[ndash]20 y (75), suggesting that most treatments have little

influence on wildfire.[rdquo]

These statements highlight the need for the Forest Service to take a second look at how they and society view wildfires. Science is proving that perhaps there are alternatives in how land-use management agencies apply wildfire science on public land. The answer may not be the traditional application of those applied over the last century.

Carbon Sequestration:

The FEIS, which is what we consider the heart and soul of the 2020 Final Forest Plan, mentions the climate-related topic of carbon sequestration 19 times out of a 594-page report. The term is only mentioned 5 times in the actual 2020 Forest Plan. In the Introduction of Section 3.8 on page 298 entitled Carbon Storage and Sequestration, the Forest Service makes this statement.

[ldquo]The Forest Service recognizes the vital role that our nation[rsquo]s forests and grasslands play in carbon sequestration. Accordingly, carbon storage and associated climate regulation has been identified as a key ecosystem service provided by the Custer Gallatin.[rdquo]

Then in the paragraph below, there is this claim.

[ldquo]Carbon sequestration is one way to mitigate greenhouse gas emissions by offsetting losses through capture and storage of carbon. The relationship between climate change and other resources is addressed throughout this analysis. In the context of global atmospheric carbon dioxide (CO2), even the maximum potential forest management levels described by the plan alternatives would have a negligible effect on global emissions and climate.[rdquo]

It is interesting that the Forest Service is making the argument that the CGNF does provide a service of carbon storage and climate regulation and those methods mitigate greenhouse gas emissions, but on the other hand, they state that based upon a global scale those effects by the CGNF are negligible. This is most likely true on the global scale, but when forests are considered on a cumulative scale, we predict so too would be the benefits of carbon storage and climate regulation [ndash] cumulative.

On page 306 under the section [ldquo]Effects from Fire and Fuels Management[rdquo] in the FEIS, there is this statement.

[ldquo]Fire, (both natural and human ignitions) pose the greatest potential for short-term reductions in carbon sequestration by removing vegetation as well as causing carbon emissions. However, fire is also a primary mechanism for restoring and maintaining native vegetation with conditions consistent with the natural range of variation, thereby contributing to carbon sequestration potential over the long term.[rdquo]

On page 306, under [ldquo]Effects from Timber Management[rdquo]

[ldquo]Plan components for timber management would allow for the short-term, localized reduction of carbon sequestration through the removal of living vegetation. The magnitude of this is greatest in alternative E and least in alternative D, but the difference between alternatives relative to effects on carbon is negligible.[rdquo]

The Forest Service is basically saying that no matter what the alternative chosen for the CGNF, the effects of carbon sequestration upon the global climate is negligible. Perhaps this can best be reflected within the Conclusions on page 307 in the FEIS.

[ldquo]A large body of science agrees that future climate conditions will include increasing average annual temperatures over the coming decades, which will have impacts to natural resources.[rdquo]

[ldquo]Potential negative effects may be mitigated and completely reversed with time as the forests regrow. Over the longer term, the activities allowed by the plan are likely to increase carbon storage and reduce emissions, by reducing disturbance risk and storing carbon in wood products.[rdquo]

[ldquo]Carbon stocks on the Custer Gallatin National Forest would likely continue to increase or remain stable under all plan alternatives in the foreseeable future. Natural ecosystem processes, including forest growth (succession) and small-scale disturbances (for example fire, insects, harvests) would continue to influence carbon stocks and emissions, but they are not expected to substantially change current trends in carbon over the span of the plan.[rdquo]

What the Forest Service is saying is that the best way to mitigate the negative effects of climate change upon the forest is to conduct business as usual and let the forest regrow. This literally changes nothing. We[rsquo]ve already argued this point above in that there is no guarantee that the forests will regrow back to the level as they occur now. This plus the truthful fact that young saplings in a restructured forest don[rsquo]t contain nearly the amount of carbon sequestration potential that old-growth forests do.

The Desired Condition found on page 49 of the 2020 Final Plan basically sums it up best under the Carbon Storage and Sequestration element.

[ldquo]Carbon storage and sequestration potential is sustained by biologically diverse and resilient forests, woodlands, shrublands, and grasslands that are adapted to natural disturbance processes and changing climates.[rdquo]

To GWA, this sounds like a plan saying it is business as usual. It seems like the Forest Service is saying the forests are self-mitigating when it comes to carbon sequestration. We know this isn[rsquo]t true, not when it comes to man[rsquo]s management. If the forests were allowed to become themselves without interference from man, this would be more likely.

But this is not the complete science. GWA has presented several pieces of research in our original comments on this subject and we will mention a few of them here to counter this notion that the Forests will take care of themselves as long as man helps through prescribed burning, fuel reduction projects and timber harvesting or production.

First, we would like to highlight the fact that older trees sequester more carbon than younger growing trees. In a paper by Natural Resources Conservation Service12: Alaska Forestry Technical Note 1 dated April 2008, Carbon Sequestration and Forest Land Thinning, there is this statement.

[ldquo]An important consideration in the carbon sequestration abilities of forest is that forests composed of larger older trees sequester more carbon than younger forests composed of smaller trees, in healthy fully stocked forest stand conditions.[rdquo]

And then there is this point. From GWA[rsquo]s previous comments.

GWA: [ldquo]In an article in Earth Island Journal, [ldquo]Logging Is the Lead Driver of Carbon Emissions from U.S. Forest - If we want to effectively mitigate climate change, it[rsquo]s time for bold action to protect forestlands.[rdquo] (Smith, Danna; Hanson, Chad; and Koehler, Matthew, 2019)13 There are these outtakes:[rdquo]

[ldquo]But the promotion of logging to supposedly curb carbon emissions is just part of the Administration[rsquo]s ongoing alignment with industry and troubling pattern of climate science denial. Carbon emissions from logging in

the US are ten times higher than the combined emissions from wildland fire and tree mortality from native bark beetles. Fire only consumes a minor percentage of forest carbon, while improving availability of key nutrients and stimulating rapid forest regeneration. Within a decade after fire, more carbon has been pulled out of the atmosphere than was emitted. When trees die from drought and native bark beetles, no carbon is consumed or emitted initially, and carbon emissions from decay are extremely small, and slow, while decaying wood helps keeps soils productive, which enhances carbon sequestration capacity over time.[rdquo]

[ldquo]Consider this: About 28 percent of tree carbon is contained in branches, and this is emitted when they are burned after logging operations. An additional 53 percent of the carbon in trees removed from forests is emitted as waste in the manufacturing and milling process. Overall, about two-thirds of the carbon in trees that are logged for lumber quickly become greenhouse gas emissions.[rdquo]

This is just the beginning of our defense as to why climate change needs to be a component of the 2020 Final Forest Plan. The science is out there. Times are changing, but the Forest Service needs to adjust to a new time. They need to alter their premise, their paradigm about how to manage forests. These forests have a greater capacity for good than ever, but they are not managed like it. We seriously and aggressively urge the Forest Service to view their role through a new lens.

The Proposed Solution:

We understand and recognize GWA[rsquo]s suggestion that the Forest Service change the paradigm in how they view mitigation policy on climate change is out of character for a single National Forest to enact. The CGNF and the Forest Service as a whole need to change internal policy. But the case can be well defended with the science and education. The correct solution would be to listen to the science and the conditions on the ground. But we as society need to ask some tough questions. What[rsquo]s best for the forest? What[rsquo]s best for the watershed, the wildlife that live there? What are the best sustainable options? What[rsquo]s best for the planet and the climate that all life needs? What[rsquo]s the best solutions to maintain water quality, to mitigate climate change? For these answers we choose a management policy to protect the watershed, the water quality, all the life that inhabits the ecosystem and one that can be counted on to be cumulated toward a global goal of a healthier planet.

For those reasons, GWA preferred Alternative D, yet even there this alternative was not the best management option. Because even here, Alternative D was manipulated by the old paradigm of the last century. Alternative F, the preferred Alternative of the Forest Service is worse on the watershed because it does not protect the watershed, the water quality and the wildlife to the degree necessary. Alternative F opens the landscape up to too many disturbances. It allows the forest floor to be dried out by timber thinning, harvesting, and production. It allows the landscape to be introduced to invasive weeds through mechanical and motorized recreation and road construction. All of which, of course, would have disastrous effects on the wildlife.

No, the Forest needs a change over to a new direction. This is what we were hoping for to meet the 21st century. Instead we got more of the same, in some cases worse, we fear.

To start, the Forest Service should return the 2020 Final Forest Plan back to the drawing board with a new component of Climate Change. The plan needs to have Objectives, Guidelines, Desired Conditions and Goals. You need to specifically state how actions of the CGNF are going to address the threats of this climatic episode. The facts of the FEIS need to come out in the 2020 Final Forest Plan, not be hidden from the public[rsquo]s main view. This would be a start. As much of a driver, Climate Change is and is purported to be by the Forest Service, the CGNF needs to act like it is the serious threat they say it is.

The link between Objections and prior Formal Comments:

GWA[rsquo]s original former comments match and support our comments made here during this Objection. We have consistently believed that wilderness and intact forests, were the best ways to counteract climate change. All of our systems are connected and because of that connectivity, it is the only right way to protect our wildlife. We have used some of the same references we used in our original comments of June 2019, but we also provide a few new references. There are more. GWA carried over much of the same arguments we made at that time because we feel they did not get a fair hearing. We believe they deserve that.

All along we are trying to protect and preserve the integrity and biodiversity of the resource. For if we do that, then we protect and maintain the watershed, the wildlife habitat, the water quality and it makes the totality of the ecosystem a greater force to mitigate climate change.

We feel we presented enough science and logical arguments to prove our case that the Forest Service needs to change course, change its paradigm, change its premise. The Forest Service must see that they have a greater threat, but also that they have a greater opportunity than just provide recreation for a public with an insatiable appetite for thrill seekers. There is a greater purpose here and we want the Forest Service to own that. There is a greater good and a greater value to be had for the Greater Yellowstone Ecosystem.

During this review process, we urge that the Forest Service look at the full totality of our comments.