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Christopher Mattrick, District Ranger

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Green Mountain National Forest

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March 12, 2023

RE: Telephone Gap Integrated Resource Project

Dear Mr. Mattrick:

I am writing to submit comments regarding the Telephone Gap Integrated Resource Project (TGIRP), with most of these comments referencing the detailed version of the Notice of Proposed Action and Opportunity to Comment, herein referred to as the Scoping Document.

Biodiversity is the overriding theme of these comments, primarily because biodiversity is not addressed in the Scoping Document. As described in Section 1.4: "[hellip].the Telephone Gap project is guided by management direction in the Forest Plan approved by the Regional Forester in February 2006. The Forest Plan is a programmatic document authorized by an Environmental Impact Statement - Record of Decision that identifies the desired balance of multiple uses to meet public needs (my underline) while providing the management framework for protecting, restoring, and enhancing natural resources on NFS lands."

What the public needs most at this critical time are solutions and actions on the existential crises of biodiversity loss and climate change. The public has no choice but to follow the direction of their governments when it comes to addressing these two crises, and the people want to believe their governments are doing the right thing. But federal and state government natural resource agencies are not addressing these crises, in fact they are trying to ignore them.

More importantly, as evidenced throughout the TGIRP Scoping Document, management actions are proposed that will diminish biodiversity and exacerbate climate change impacts. This is because there is no recognition in the 2006 Plan that biodiversity and climate mitigation have any roles in "protecting, restoring, or enhancing

natural resources on NFS lands". Therefore, it is premature for the Forest Service to be suggesting the following:

"It is important to balance the role forests have in countering greenhouse gas emissions through their carbon sequestration and storage capacity with the need to address declining forest health and lack of habitat diversity within the project area."

This statement seems to suggest that the values that forests provide in mitigating climate change, through carbon sequestration and storage, must be balanced with management actions that lessen the forests' ability to perform these climate mitigating services. Likewise, management actions proposed to address the "lack of habitat diversity" will result in a significant lessening of biodiversity. Because of these inconsistencies, it is vital that a revised GMNF Forest Plan, or an amendment to the 2006 Plan that addresses biodiversity and climate mitigation, be completed before any decisions concerning the TGIRP are rendered.

The word "biodiversity" appears only once in the 2006 Forest Plan, referenced in the Glossary as a synonym for "biological diversity", a phrase that is also used only once - in Section 8.6 Existing and Candidate Research Natural Areas, which begins with the following paragraph:

The emphasis for an existing or candidate Research Natural Area (RNA) is preservation and protection of ecologically significant natural features, high-quality representative ecosystems, and/or unique areas. In combination with other RNAs in the nation, these form a national network of ecological areas for research, monitoring, education, and maintenance of biological diversity.

By assigning the "maintenance of biological diversity" to RNAs, the Forest Service gives the public a false impression that the agency has done its due diligence in addressing biodiversity. But, the biodiversity of the GMNF is much more than a few special sites, it is the entire forested landscape.

Biodiversity is every species found in the GMNF, but outside of RNAs the biodiversity the Forest Service is most interested in is the small subset of animals that are collectively called "wildlife". Maintaining wildlife is accomplished by habitat management, which is a major focus of the Scoping Document. The word habitat appears 122 times in the document, and it is "increasing habitat diversity" that is the justification for many of the proposed actions. The Scoping Document provides a fair amount of detail regarding the benefits of these proposed actions, but very little data about the costs.

My comments will focus on the ecological costs associated with the proposed actions, and the ways in which misinformation and bad science are presented in the Scoping Document to purposely minimize these costs. Throughout the Telephone Gap scoping process, and with other similar FS projects, the agency insists that plans and decisions are based on the most current science. But the question needs to be asked, which science? The applied sciences of forestry and wildlife management are primarily concerned with maximizing the yield of natural resources, and accordingly much of the scoping document seems to take on the appearance of a business plan.

Maintaining biodiversity requires application of the sciences of ecology and conservation biology to determine not how natural ecosystems are to be managed and exploited, but how they should be stewarded to achieve their greatest ecological potential. One example of this management/stewardship dichotomy is the Habitat/Ecosystem debate which is evident in the first sentence of Section 2.1:

Much of the GMNF experienced forest removal followed by intensive agricultural and pastoral use in the late 19th and early 20th century changing the natural forest habitat types across the landscape.

The basic definition of habitat is, the place where a plant or animal lives. Essentially, every species has a habitat, and everywhere is habitat for something. Thus, we can speak about wolf habitat, or columbine habitat, or Habitat for Humanity, but the term loses its meaning when disparate species are lumped together under broadly-defined

habitat types. For example, early successional habitat is a meaningless term because it includes so many different habitats.

Rather than habitat type, it is more accurate to say natural forest ecosystem. "Habitat" and "habitat type" are modern inventions that resource managers use to categorize and pigeonhole management objectives. Hence, the analysis of Habitat Management Units (HMUs) that are based on forestry-guided objectives designed to maximize the resource, and not based on the more holistic objective of maximizing ecosystem services.

It is pointless in this stage of the scoping process to discuss every instance in which the natural sciences have been misinterpreted. Instead, I will address several broad issues that can only be rectified by analysis in an environmental impact study. Each comment below is prefaced by a citation from the Scoping Document which is written in red to facilitate review of this letter.

Page 7. To develop site-specific composition and age class objectives, a habitat management unit (HMU) analysis was completed for the Telephone Gap project area. This type of analysis applies broader Forest Plan habitat type composition and age class objectives at the site-specific scale. Site-specific composition and age class objectives (HMU objectives) are based on the long-term tendencies of ecosystems found in the project area, also referred to as the potential natural vegetation (PNV). The difference between the existing forest habitat composition and age class distribution and the HMU objectives (see Tables 3 and 4) is the basis for identifying potential management activities to achieve desired forest habitat conditions within the project area. Habitat type objectives are applicable to all NFS lands while age class distribution objectives are only applicable where NFS suitable lands are managed using even-aged silvicultural systems.

For example, the northern hardwood habitat type represents 76 percent of all NFS lands within the project area; however, northern hardwoods are expected to only occupy about 23 percent of the landscape based on its long-term ecosystem tendency. Although the Forest Plan habitat type objective at the forest-wide level is 30 to 40 percent northern hardwoods, the HMU analysis indicates this habitat type within the project area should be 15 to 25 percent. To focus where vegetation management can be considered, about 93 percent of suitable lands within the project area are occupied by northern hardwoods and can be actively managed to alter habitat composition.

I don't believe it is necessary at this time to pick apart the HMU analysis, except to say that as described here and in supplementary material, there is no discussion of how this analysis was actually conducted. No citation of references to the methodologies employed, no data to judge the results. The only thing provided is passing reference to Potential Natural Vegetation without acknowledgement of the methodology used to compute this index, or the assumptions made. It should be noted that POV has its detractors (See: Chiarucci. et.al. 2010. The concept of potential natural vegetation: an epitaph? Journal of Vegetation Science 21: 1172-1178.) and the HMU analysis must be rigorously documented if it continues to be used to support management actions that are primarily based on predictions of future forest conditions.

For example, if I understand the second paragraph correctly, the northern hardwood forest habitat type, the signature ecosystem of this region, is supposedly on a declining trajectory and "expected to only occupy about 23 percent of the landscape"; and, because this is predicted to happen, at some unknown time in the future, the Forest Service intends to speed up the process by "altering the habitat composition" of existing northern hardwood stands because that habitat type makes up 93% of the suitable lands within the project area. This decision demands a considerable amount of analysis and discussion that can only be conducted by an unbiased assessment in an environmental impact study.

Page 10. Regenerating/Early Successional Habitat

There is a need to increase the amount of the regenerating age class (0 to 9 years old). The regenerating age class and the first five to ten years of the young age class are described by the Vermont Conservation Design

collectively as "young forest".

Clearcutting a 5-acre swath of forest creates a very different ecosystem than a "forest". Vegetation ecologists define "forest" as an ecosystem dominated by trees >16 feet tall and covering >10% of the canopy. Therefore, the "young age class" and "young forest" descriptors used in the Scoping Document are incorrect. A clearcut provides ground zero for a series of short-lived plant communities (moss/lichen, herbaceous, low shrub, tall shrub) until enough trees have attained the dimensional requirements to be a forest, and at that point in time becomes a young forest.

Fifty-four Vermont Species of Greatest Conservation Need and four categories of insects (bumble bees, butterflies, moths, Carabid beetles) require or depend heavily upon young forest or old field/shrub habitat to maintain healthy populations.

There is a considerable amount of information needed to evaluate this statement. Vermont's SGCN list covers the entire state of Vermont and many species identified with young forest and old field/shrub habitats are relatively common in lower elevations, and even at the edges of National Forest boundaries, along roads where old fields, shrubby areas, and groves of trees abound.

Table 1 below includes a list of birds identified with shrubland and young forest habitats that are identified as Species of Greatest Conservation Need (SGCN) in the six New England State Wildlife Action Plans. The list is derived from:

Gilbart, M. 2012. Under Cover: wildlife of shrublands and young forests. The Wildlife Management Institute.

Table 1. Birds listed Species of Greatest Conservation Need in 2015 New England State Wildlife Action Plans.

Species NE States G-Rank* VT BBA 81/07**

American Woodcock All 5 122/131 +7

Whip-poor-will All 5 30/7 -77

Rusty Blackbird All but CT 4 27/20 -26

Northern Bobwhite MA 4

Golden-winged Warbler MA,NH,VT 4 5/14 -7

Prairie Warbler All 5 4/7 +75

Yellow-billed Cuckoo CT,ME,RI 5 24/27 +13

Olive-sided Flycatcher MA,NH,VT 4 86/46 -47

Blue-winged Warbler All 5 4/9 +125

Field Sparrow All 5 112/68 -39

Ruffed Grouse All but ME 5 172/170 -1

Black-billed Cuckoo All 5 134/103 -23

Canada Warbler All 5 142/98 -31

Yellow-breasted Chat CT,RI 5

Brown Thrasher All 5 135/72 -47

Willow Flycatcher CT,RI,ME 5 47/79 +68

Blk-and-White Warbler CT,ME,MA, 5 171/171 0

Eastern Towhee All 5 115/54 -53

Veery CT,ME,NH, 5 176/174 -1

Eastern Kingbird CT,ME,RI 5 174/167 -4

Chestnut-sided Warbler All but NH 5 172/176 +2

American Redstart ME,RI 5 178/172 -3

Spruce Grouse ME,NH,VT 5 2/1 -50

Nashville Warbler MA,RI 5 124/118 -5

Rose-breasted Grosbeak CT,RI,ME 5 179/170 -5

Alder Flycatcher CT 5 115/151 +31

Gray Catbird RI,CT 5 177/165 -7

White-eyed Vireo CT 5

Indigo Bunting CT,RI 5 158/168 +6

Mourning Warbler ME,MA 5 102/106 +4

Hermit Thrush RI, CT 5 155/171 +10

Magnolia Warbler CT 5 129/118 -9

Tennessee Warbler ME 5

*G-Rank. A numerical rank assigned to all species by Natureserve that can be used to determine priorities for conservation action. Ranks are assigned from 1 (most imperiled) to 5 (secure). More detailed information about G-ranks can be found at https://www.natureserve.org/classifying-biodiversity

**VTBBA 81/07. Results from two Vermont breeding bird atlas projects in 1981/2007, based on number of sample blocks (n = 180) recorded breeding. Also shown is percent change.

There are several points to be made concerning this table. First, only species highlighted in yellow (15 species)

are listed SGCN in Vermont. Among the birds not listed in Vermont are 12 that are secure in Vermont and therefore do not warrant SGCN status. It should also be noted that most of the species listed in Table 1 are ranked G5 by NatureServe and considered secure enough not to warrant any specific management actions.

Secondly, there is a relatively large number of birds identified SGCN in other New England states that are among the most common of Vermont's breeding avifauna. Among these are, black-and-white warbler (171 atlas blocks), veery (174), eastern kingbird (167), American redstart (172), rose-breasted grosbeak (170), gray catbird (165), indigo bunting (168), and hermit thrush (171); again, these numbers are based on a total 180 blocks.

It is important to note! The listing of ruffed grouse (170) and chestnut-sided warbler (176) as SGCN in Vermont raises suspicions about the manner in which some species are listed SGCN. There are no recognized scientific criteria for SGCN listing, it's merely the decision of committees made up of natural resource managers. The ruffed grouse is a resource species that explains its listing; but, the chestnut-sided warbler is truly one of the most common and widespread breeding birds in the state, but it also happens to share similar habitats as the ruffed grouse.

Critical to the habitat management issue is an understanding that the Vermont Wildlife Action Plan identifies SGCN from ALL of Vermont's natural habitats, including mature forests. Several SGCN birds identified as forest interior specialists, including black-throated blue warbler, blackpoll warbler, and wood thrush, are likely currently inhabiting the Telephone Gap project area. It should not take much thinking to understand that management actions implemented to support early successional and young forest SGCN species will have a detrimental impact on mature forest SGCN species.

Likewise, the four categories of insects (bumble bees, butterflies, moths, and Carabid beetles) that include SGCN species identified with early successional habitats are groups that also include SGCN species of mature forests. Without this recognition, and without mentioning the actual listed SGCN species, this citation is meaningless. But, it raises an important point - what are the SGCN species are going to be managed for? The answer to that question is complex, but should not be answered without a comprehensive biological survey to determine which SGCN currently inhabit the project area and could be subject to adverse impact from management actions.

Various timber harvesting methods can create temporary openings in the forest canopy providing early successional habitat. These openings also contribute to the vertical and horizontal vegetation structure across the overall forest landscape, increases landscape resiliency, and once created allow for the establishment or planting of tree species which may not be able to regenerate without full sunlight.

The HMU objectives for the regenerating age class range from 693 to 2,537 acres.

From the perspective of a conservation biologist, it is difficult to understand how creating more than 700 acres of openings within a forested landscape contributes to resiliency, or creates vertical and horizontal structure. The Forest Service needs to clearly define these terms and objectives because the learned opinion of most ecologists would be that clearcutting patches of forest decreases landscape resiliency, increases a forest's susceptibility to invasive species and pest invasions, creates higher fluctuations in temperature and humidity, destroys biodiversity, severely inhibits nutrient cycling, and diminishes carbon sequestration and storage. Suggesting that clearcutting is a suitable substitute for natural disturbance is absurd for the simple fact that all the trees are removed from the site by humans. A natural disturbance would leave those trees on the ground to feed the next generation.

Page 10. Oak Habitat

There is a need to increase oak habitat on sites where some amount of northern red oak currently occupies a part of the forest composition. Although no northern red oak dominated stands occur on suitable lands, stands

where some oak is part of the habitat composition can be treated to increase its natural regeneration in the overall forest composition where conditions would support its growth. Oak requires frequent disturbance such as fire or cutting to establish seedlings and out-compete other tree regeneration. Without action, these stands will gradually lose their oak component. Silvicultural treatments can replicate the disturbance process to promote oak regeneration and release subsequent growth into the forest canopy. Increasing the occurrence of northern red oak in areas where it is suited would increase resilience of the project area to future climate conditions.

It seems apparent from this paragraph that the primary reason for this management action, to increase the percent of red oak, is for silvicultural purposes. Again, it is based on predictions associated with climate change, that the percent of Northern red oak in the GMNF will increase. Although the title "Oak Habitat" suggests this action is related to wildlife habitat management, there is no indication as to what species would benefit from this action. There also needs to be a clear explanation of how increasing the occurrence of red oak increases resiliency to future climate conditions.

Page 10. Climate Change

Extreme weather events, range expansion of forest pests, shorter winters, and drier and hotter summers are examples of stressors related to climate change. The forested landscape within the Telephone Gap project area is currently affected by climate-related stressors which are predicted to increase in the future.

"The forested landscape within the Telephone Gap project area is currently affected by climate-related stressors", and those stressors will be magnified by the management actions proposed in this Scoping Document. Carving holes in the forest of 5 or more acres opens the forest interior to higher fluctuations in temperature and humidity, greater susceptibility to invasion by exotics and pests, and reduction in soil carbon sequestration.

Tree species currently found within the Telephone Gap project area are predicted to experience increased vulnerabilities resulting from changing climate trends including, but not limited to, changing growth and dormancy patterns, phenological changes, increasing and new forest pest and pathogen agents, and varying precipitation rates. Trees which are less suited to future climate conditions are likely to experience additional stresses, while tree species best adapted to future climates are likely to be more resilient to stresses and potentially sequester carbon at a greater rate.

Again, the reliance on predictions to drive management actions.

Page 20. Tree Planting

Out of the total 8,200 acres of proposed supplemental tree planting, 901 acres are proposed to be planted with species which are best adapted to future climate conditions. Tree species which are native to Vermont but not currently located within or near the Telephone Gap project area would be planted to expand the range of these species: Tree species could include bitternut hickory, shagbark hickory, tulip poplar, American chestnut, white oak, or chestnut oak.

Once again, planting trees "best adapted to future climate conditions" involves a fair amount of prognostication. Described here is the concept of assisted migration, which is a highly selective process based on the objectives of the facilitator, in this case the forester, and is often done with little thought about the potential consequences of artificially "expanding the range" of a species. Tree species that are "predicted" to decline with climate change will not all-of-a-sudden disappear from the forest. When individual trees die their places will eventually be taken by other species already present in the same forest, and maybe/maybe not new species that are slowly expanding northward.

8. Biodiversity Inventory

The Forest Service hosted a citizen science-based biodiversity inventory (called a BioBlitz) within the Telephone Gap project area from April 27, 2020, through September 30, 2021. The BioBlitz was intended to bring experts and amateurs together to collect data and develop a comprehensive list of plants, animals, fungi, and other organisms occurring within the project area. This effort involved more than 230 participants including Forest Service staff, community members, natural history professionals, citizen scientists, and visitors to the area who collected and reported observations. Approximately 4,000 observations of approximately 1,060 species were compiled. Although observation of rare plants or animals previously unknown in the project area could have resulted in changes to proposed management activities, no such observations were recorded through this effort.

I commend the Forest Service for hosting the Telephone Gap Bioblitz. I have personally coordinated and participated in many Bioblitz events, and understand how valuable they are in connecting people and biodiversity. However, I also understand the limited value of Bioblitz in providing meaningful inventory data for judging the environmental impacts of land management activities. It is therefore difficult to understand why the Telephone Gap Bioblitz is included in the Scoping Document. Although purporting to be a "comprehensive list of plants, animals, fungi, and other organisms", the number of species reported (1,060) is well below what should be expected in Telephone Gap - it is likely that there are more than 1000 species of beetles alone.

However, this section is titled "Biodiversity Inventory" and apparently good enough to decide that changes to the proposed management activities would not be necessary. However, as explained above, there is a considerable need for a comprehensive biological inventory of the Telephone Gap project area. NOT simply a list, but at a minimum this inventory should determine the locations of all SGCN species within the Telephone Gap region.

Inventory Recommendations:

Having participated in a number of team-oriented biological surveys, I can offer the following general guidelines for conducting a biological inventory in the Telephone Gap area.

1. All SGCN species should be inventoried and mapped following standard survey/sampling protocols on both suitable and unsuitable lands.

2. Surveys should be conducted by recognized experts in each organismal group that includes SGCN - plants, mammals, birds, herptiles, fish, bees, moths and butterflies, and beetles. Each organismal group has scientific committees that govern acceptable survey methodologies.

3. Surveys for some insects will be facilitated by locating populations of associated plants. For example, the West Virginia White (Pieris virginiensis) should be searched for at populations of its host plants, the toothworts (Dentaria/Cardamine).

4. In addition to the plants cited in the list of Regional Forester Sensitive Species, inventory should include additional plants that provide specific SGCN insect needs. These include the above-mentioned toothworts, and other spring ephemerals that provide food for a number of insects active during the brief early spring period before foliage leaf-out.

5. Surveys need to be conducted during appropriate periods. For example, breeding bird surveys are generally conducted during the month of June, with supplemental surveys (e.g., owls) at other times of the year. A general guideline is to survey at least once each season.

Summary

1. The 2006 Green Mountain Forest Plan does not provide guidance regarding how the Forest should be managed to preserve biodiversity and mitigate the impacts of climate change. It is imperative that an amendment to the 2006 Forest Plan be prepared that addresses these issues, and that this amendment is thoroughly vetted through an environmental impact statement process.

2. Because the Telephone Gap Integrated Resource Project has been conceived without guidance from the Forest Plan regarding biodiversity/climate, an environmental impact statement is warranted for this project.

3. A critical element of any EIS is a biological inventory, and for the Telephone Gap project an inventory is vital in determining which SGCN taxa are currently inhabiting the Telephone Gap project area, and how these taxa will be impacted by all phases of the project.

Respectfully submitted,

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