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Andrew Pickens District
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October 19, 2021

RE: FY 2022 AP Prescribed Burning, File Code 1950

Robbie,

I am submitting the following comments on behalf of the Chattooga Conservancy, regarding your proposal for implementing prescribed burning on 8,662 acres of Sumter National Forest lands on the Andrew Pickens Ranger District (APD) for the fiscal year of 2022. The proposal consists of 16 burn units across the landscape, with the purported purpose of restoring upland oak-hickory and mixed pine-oak-hickory forests in order to maintain a mix of forest serial habitats, and the creation and maintenance of woodland habitat. Two-thirds (5,828 acres) of the total area proposed for prescribed burning is in the Chattooga River watershed.

The mission of the Chattooga Conservancy involves working with the Forest Service to promote and restore the natural ecological integrity of the Chattooga River watershed ecosystems, to ensure the viability of native species in harmony with the need for a healthy human environment. The proposal for prescribed burning in 2022, on the face of it, seems to be in line with our mission to promote the restoration of "natural ecological integrity." However, we have many concerns that, in actuality, this proposal will do harm to the ongoing recovery of a healthy native ecosystem in the Chattooga watershed.

- **Background Comments**

Natural History & Fire History The history of the role of fire in the evolution of the mixed hardwood-dominated forests that exist today in the Andrew Pickens District (APD) involve both natural and human-initiated fire. The natural fire regime in terms of frequency and intensity in these forests is defined by fire patterns that occur in a mosaic of both low and high severity, with fires intervals of several decades. *Aboriginal burning in the fall, to gather American chestnuts, had no major effect much beyond village sites and trails.*

Historically, probably up to 10% of the landscape between and within stands of old-growth forest trees was maintained in early successional habitat by ungulates including elk and deer, as grasslands and open shrubby canopy gaps, with beaver meadows along bottomland streams. The multi layered, uneven age old-growth forests provided habitat for the diverse array of species that have evolved in the Southern Blue Ridge Providence. Although fire is an important component of the natural processes that helped create and maintain these diverse forests, in the APD *it is secondary* to high rainfall, soil type, elevation,

latitude, natural disturbance, orientation towards the tropical weather patterns, and the absence of glaciation during the last Ice Age.

However, catastrophic fires fueled by logging slash left from the massive logging operations that occurred between 1900-1930, and subsequent "heritage burning" by landowners to perpetuate open grazing land for free-range cattle, favored the propagation of fire-adapted forest species such as pine. Fire exclusion practiced by the Forest Service since the logging boom years has had minimal effect on the recovering forests of the APD, because of the long fire intervals in our native forests in the Chattooga River watershed, which exist in a temperate rain forest, and are not fire-adapted.

Currently, the older forests on the APD have recovered from the ravages of the turn of the century logging boom remarkably well, and are moving through natural processes toward a more diverse forest, in multi-serial layers of dominant, co-dominant, understory and herbaceous layers, and are naturally propagating through gap-phase stand reproduction processes, where natural disturbance such as wind throw, tornadoes, ice storms, insects and disease, create openings to let in sunlight favoring early successional species.

Beyond artificially maintaining wildlife openings, to provide traditional early successional habitat in addition to what is naturally occurring in old-growth canopy gaps, to make up for the loss of keystone species such as elk that historically maintained these habitats, little in the way of management is required to restore these native forests.

Climate Change Unfortunately climate change, due to human-caused global warming, will radically alter forest ecosystems. Habitats, with their associated plants and animals, will consequently need to migrate to cooler places or higher elevations and more northerly latitudes as the climate becomes warmer. National forest management will play a key role in helping plants and animals adapt to climate change, and to mitigate its effects. Conservation biologists advise that managing public lands for restoring a network of native forests to old-growth conditions connected across the landscape is our best bet to fight climate change. These core old growth areas and connecting corridors will allow native habitats and their associated species to migrate, while old growth forests will sequester carbon to mitigate the effects of climate change.

- **FY2022 Prescribed Fire Proposal Comments**

Fire management will be an important factor in restoring native forest ecosystems, protecting communities in the wildland-urban interface, and addressing climate change. Yet the proposal for prescribed burning in FY 2022 by the Andrew Pickens Ranger District runs counter to both of these stated goals. Our comments and concerns are as follows:

Biased Research

The Forest Service is biased toward unnatural forest tree management that favors regenerating tree crops of commercially viable species, particularly pine. This is evident in forest planning documents that

classify most of the district as mixed hardwood/pine, and shortleaf pine, pitch pine and Virginia pine, altogether totaling 53% of the forest (Sumter National Forest 2004 FEIS, 3-248). Most scientists agree that the existence of a high percentage of fire and disturbance-adapted species on the Andrew Pickens Ranger District, including pines, is the result of the heavy disturbance during the early 1900's logging boom and the subsequent frequent fires in logging slash, followed by "heritage burning" to maintain free-range grazing, which occurred during the first three decades of the 20th century. The Forest Service and collaborating academics further speculate that "The existence of these pines and other fire-adapted species implies a long history of burning in the Appalachian region, but the extent of such vegetation before the industrial logging phase is not well known." (*Fire History of the Appalachian Region*, General Technical Report SRS-219, January, 2017, Chapter 1, p.4.)

But Forest Service logic then extends the presumption that the presence of fire-adapted species can be attributed to aboriginal burning, before the European influence. On this point scientists are split, with in-house studies from the Forest Service Experiment Stations taking the position of frequent burning by native Americans, while the conclusions of other scientists (Williams, C. E., 1998) suggest that fire activity was limited before European settlement, and did not increase until European populations had risen and expanded their influence in the middle of the 19th century. (Ibid., Chapter 1, p. 5). Supporting evidence for the Williams' model is the fact that Native American populations were drastically reduced prior to the European settlement in the backcountry of upstate SC in the early 1800s. After 1817, when the Cherokee ceded the last strip of land in upstate South Carolina, there were almost no Native Americans living in this area. In fact, Cherokee villages were almost completely abandoned many years before, by the signing of the Declaration of Independence in 1776. Burning by Native Americans during an important stage of forest development in the Andrew Pickens District could not have played a key role, because there were very few Native Americans occupying the area at that time.

In addition, prescribed burning does not prevent catastrophic wildfire. Noted fire ecologist George Wuerther, in a recent article entitled "The Problems of Prescribed Fire," (*The Hill* 7/09/2021) points out that the recent Labor Day Wildfire on the western slopes of the Cascade Mountains in Oregon "…charred hundreds of thousands of acres of forest that had been previously treated with prescribed burns for fuel reduction." Wuerther also points out that extreme weather conditions, including drought, high temperature, low humidity and wind, drive wildfire—regardless of prescribed burning for fuel reduction. He goes on to say that in most all cases, wildfires were controlled when extreme weather conditions changed. In other words, the fires were brought under control because it rained, and/or the wind let up, not because of prescribed burning. The clear take away is that prescribed burning did not stop wildfire.

We believe the Forest Service's position that the forests of the Andrew Pickens District are mostly fire-adapted, with a frequent fire cycle, targeting large areas sometimes in excess of 1,000 acres, is based on biased, in-house research that seeks to support the paradigm of fire-driven ecosystems, because this produces a higher percentage of merchantable tree species. This bias towards crop trees is driven by agency culture, that is rooted in prioritizing timber production to meet politically motivated timber targets.

Whereas the position of the Chattooga Conservancy is based on science and common sense—that the fire-adapted component of our forest in the Chattooga watershed is confined to the pine-hardwood forests of dry south and southwest facing ridges, with most of the other forest areas dominated by mixed hardwoods, in an overall landscape heavily influenced by high rainfall and more mesic conditions, with a fire regime of low and medium intensity natural fires, on a much longer fire return interval. Therefore, frequent prescribed burning is an unnatural fire regime that does not favor native forest restoration in the Andrew Pickens Ranger District.

Negative Impacts to Flora & Fauna

The proposed FY 2022 prescribed burning may cause harm to native plants and animals. Prescribed burning that may extend through April may cause direct mortality to ground-nesting birds, including wild turkey, which begin nesting around April 1st. It will also impact fire-sensitive amphibians and reptiles such as the imperiled green salamander, which is known to exist in the proposed burning area and that is a candidate T & E species for listing by the US Fish & Wildlife Service. Other species of Plethodons (the lungless salamander family) would be impacted and likely experience mortality in the proposed large swaths of burning units. It may also affect the small whorled begonia, a federally-listed threatened species, that is known to exist in the proposed burn areas near Burrells Ford, and native brook trout as discussed in more detail concerning soil erosion.

Negative Impacts to Soils

Prescribed fire in areas with heavy fuel loads on steep slopes and erodible soils will result in soil erosion and sediments entering streams, thus harming aquatic species. There is ample evidence that certain prescribed burning areas in the APD have left areas denuded down to the bare mineral soils. This is precisely the case regarding the proposal for prescribed burning on the steep slopes of Pig Pen Branch on Chattooga Ridge, near Morton and Crane Mountains. The slopes are thick with rhododendron and mountain laurel on steep terrain. Prescribed fire guidelines for the Sumter National Forest warn that prescribed fire in this fuel type on steep mountainous slopes could result in hot fires that reach the forest crown. There is no doubt that if this occurs, the result will be sediment entering Pig Pen Branch. It is ironic that the Forest Service is currently working with the South Carolina Department of Natural Resources and Naturaland Trust to restore native brook trout in Pig Pen Branch, while simultaneously proposing prescribed burning in an area very likely to burn hot enough to cause erosion and sedimentation into one of the only remaining native brook trout streams in the Andrew Pickens District.

Proliferation of Invasive Species

Prescribed fire aids the spread of non-native invasive species such as *Elaeagnus sp.* including autumn olive, Russian olive and silverthorn. The proposal for prescribed burning on the Garland North, Back 90 and Turkey Ridge Tracts includes areas that have experienced an explosion of *Elaeagnus*, that is clearly linked to when the APD began aggressive clearcutting of these areas as prescribed in the Loblolly Project, coupled with frequent prescribed burns.

Elaeagnus is considered by the US Department of Agriculture as one of the most harmful non-native invasive species. Until recently, the Forest Service had been maintaining wildlife openings planted with

Elaeagnus in wildlife food plots. Indeed, the Forest Service maintained a large wildlife opening populated with *Elaeagnus* on Turkey Ridge Road. Finally, after two years of repeated requests by the Chattooga Conservancy, the *Elaeagnus* patch was eradicated. However, prior to eradication the *Elaeagnus* patch provided an ample seed source for surrounding areas such as the Garland North Tract. The Garland Tract, consisting of a fairly recent land acquisition of open agricultural land that has been subject to frequent prescribed burns, has been the perfect medium for the spread of *Elaeagnus*, which seems to thrive on low intensity grassland fires. We are certain that if prescribed burning in this area continues without addressing the proliferation of *Elaeagnus*, the spread of this invasive species will continue to threaten the restoration of native habitats. Further, the hand and bulldozer fire lines necessary for prescribed burning in wildlands near the Chattooga National Wild & Scenic River provide an ideal seed bed for other invasives such as Japanese knotweed (*Polygonum cuspidatum)* and Japanese stiltgrass (*Microstegium vimineum)* to propagate and spread within the wild and scenic river corridor.

Burn Blocks within the Chattooga Wild & Scenic River Corridor

We are fundamentally opposed to the needless intrusion of management activities—such as prescribed burning—within wild and scenic sections of the Chattooga River corridor. Areas within the Chattooga's protected river corridor should be left untrammeled, and dominated by natural landscape processes and natural disturbance regimes. Specifically for the FY2022 prescribed burning proposal, this includes the large 1,375-acre Ridley Mountain and 1,182-acre Fall Creek burn blocks.

Negative Impacts to Air Quality

Frequent prescribed burning may result in significant negative health impacts. A study published in *Medical Journal of Australia* on April 20, 2020, and entitled *Study: Negative Health Impacts of Prescribed Burn 'Significant,'* concluded that, "…although the smoke from individual prescribed fires was much lower than that associated with severe brush fires, their cumulative impacts were similar because of the much greater frequency of prescribed burning." The APD's large scale prescribed burning program oftentimes creates negative air quality conditions in the surrounding communities on private land.

In addition, prescribed fire emits a large amount carbon into the atmosphere, contributing to and stoking the dire impacts of global warming and climate change. In the near future, the greatest threat to our native forests will be climate change, so the last thing we need is to institute greater use of a management tool that exacerbates the problem—especially when it is not needed.

Negative Impacts to Archaeological Sites

Even though the scoping letter mentions protection for archaeological sites, no specific protection plan was disclosed or described. We are aware of an archaeological site in one of the proposed burn units that is covered in leaf litter. If this site is allowed to burn, it will be subjected to the threat of considerable damage.

Lack of Monitoring Data

Chattooga Conservancy staff has participated in several Fire Learning Network meetings and other forums, where the topic of monitoring the effects of prescribed burning across the landscape has been

discussed. Land managers have openly admitted scant to no resources for conducting a robust monitoring program to fully document the effects of current large scale prescribed burning programs. Please share post burn monitoring results for the recent past (approximately 10 years), and accompanying narrative, of the APD's prescribed burning program.

Other

What is the Forest Service's reasoning, and intended justification, for the relatively small, 14-acre burn block on the top of Round Mountain? Noted are other small burn blocks for populations of coneflower; what is the specific issue with Round Mountain?

Conclusion

The latest science confirms that managing our public lands by restoring a healthy native forest, that is allowed to attain old-growth characteristics, is more efficient in carbon sequestration than creating stands of younger age class crop trees. Further, if this old growth native forest is restored, and is buffered and connected across the landscape, it is our best hope to allow plants and animals to migrate to new and more favorable habitat as the Earth's climate changes. The consequences of climate change, where we will see longer and more sustained periods of both drought and rainfall, are evident and inevitable. Longer periods of drought mean that wildfires will increase in intensity, immediately affecting the populations who live in the wildland/urban interface. If prescribed burning will not stop wildfires during extreme weather conditions, the best solution In the Andrew Pickens Ranger District, which is highly fragmented by private lands, is to initiate homeowner education programs aimed at teaching people how to build homes and design landscaping to be less susceptible to wildfire.

The APD's prescribed fire proposal for FY 2022 is simply out of line with the natural fire regime on this landscape in the temperate rain forest of the Chattooga River watershed. The proposal calls for fire cycles that are much more frequent than our natural fire regime. Consequently, the prescribed burns may cause damage to soils, while causing harm to human health, individual species of plants, animals and entire ecosystems, lower water quality, pollute the air, help spread non-native invasive species, and contribute to climate change. And if prescribed burning will not protect us from wildfire during more frequent periods of drought, that also raises the question of its validity.

It is our opinion that solid scientific evidence exists that frequent prescribed burning is *unnatural* in the Andrew Pickens Ranger District, and indeed it may cause harm to ecosystems and human health, is reason enough for due reconsideration—before proceeding with any of these proposed prescribed burns.

We appreciate this opportunity to submit comments on the APD's FY2022 prescribed burning proposal, and look forward to your response.

Nicole S Hayler

Nicole Hayler