KENTUCKY HEARTWOOD

Protecting the Beauty and Wellbeing of Kentucky's Native Forests

Jason Nedlo, District Ranger
761 South Laurel Road
London, KY 40744

RE: Pine Creek Forest Restoration Project

September 4, 2019

Dear District Ranger Nedlo,

Thank you for this opportunity to comment on the Draft Environmental Assessment (EA) for the Pine Creek Forest Restoration Project (Pine Creek project). These comments are being submitted on behalf of Kentucky Heartwood and the Kentucky Resources Council. We appreciate the care and detail that have gone into the development of this proposal and the analysis. There are quite a few things that we are pleased to see in this project. However, we also have some substantial concerns with some of the proposed actions and see some deficiencies in the analysis.

1. Supported Actions

We'd like to start by addressing the proposed Actions that we support or do not oppose. While Kentucky Heartwood generally opposes commercial timber harvest on national forest lands, we are supporting some of the commercial harvest prescriptions in this proposal, specifically Action 2.A: Commercial woodlands, Action 8.D: Utility Corridors, and Action 9.B: Roadside thinning. This is, for Kentucky Heartwood, an unprecedented position. These prescriptions arose from a good-faith, collaborative process utilizing appropriate expertise and good data with respect to conservative flora and historical ecology. We find that these prescriptions present a potentially effective means for restoring the increasingly rare, botanically rich wooded grassland and shrubland communities of the Cumberland Plateau (Cumberland barrens), and are a reasonable means to meeting the Forest Service's multiple-use mandate.

The following are the proposed Actions that we support or for which we have no major objections:

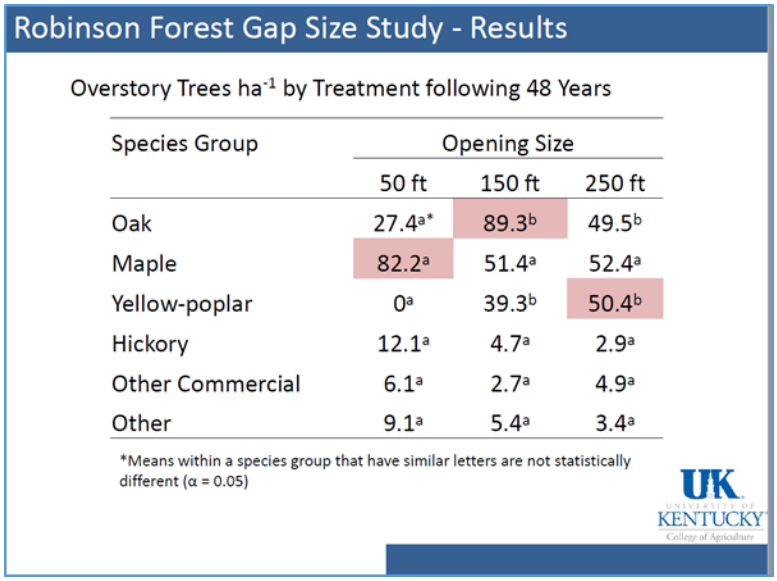
- Action 2.A: Commercial woodlands
- Action 2.B: Non-commercial woodlands
- Action 2.C Pine plantings
- Action 3: Planting of mast-producing trees
- Action 4: Shortleaf pine stand improvement
- Action 5: Midstory removal
- Action 6: Crop tree release
- Action 8.C: Maintain openings and edges
- Action 8.D: Utility Corridors
- Action 9.B: Roadside thinning
- Action 9.C: Rehabilitate user-made trails
- Action 9.D: Sheltowee Trace National Recreation Trail Re-Route and Maintenance

- Action 9.E: Install gates at NFS Roads 4117, 816A, and 4094 (qualified support, see comments below)
- Action 10: Prescribed fire (qualified support, see comments below)

2) Action 1: Young Forest/ Early seral habitat

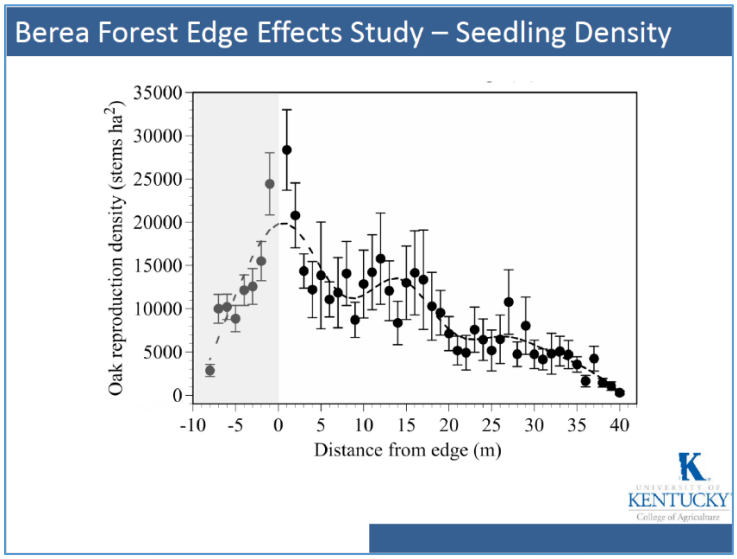
We appreciate that the Daniel Boone National Forest has finally admitted that regeneration cuts, absent substantial pre- and post-harvest site prep and ongoing management, will likely shift forests away from oak dominance. It has been a long-running narrative that without shelterwood harvest and clearcuts our forests will lose their oak component when, in fact, it's been these very harvest practices that have accelerated the loss of oak species in our forests. We've observed this phenomenon on tens of thousands of acres across all Districts of the Daniel Boone. At least, in this project, you are proposing the intensive management required to not lose oaks through the "regeneration" process. That said, we still assert that shelterwood cuts are largely outside of the range of typical natural disturbance events in our forests, and are not the optimal means for managing for early seral habitat or regenerating/recruiting oaks.

While even-aged systems have been the "go-to" tool for upland oak management, research from the University of Kentucky suggests that intermediate-sized group selection with adjacent thinning (i.e., femelschlag or expanding gap silviculture), along with midstory thinning, may be optimal for supporting oak recruitment. We note here (see attached document) information from a presentation by Dr. John Lhotka of the University of Kentucky. He presents data from Robinson Forest showing that group selection harvests of about 0.4 acres (150 foot gap) result in substantially better oak development after 48 years than larger group harvests of about 1.1 ac (250 foot gap), with the latter resulting in a greater abundance of tulip poplar. As Dr. Lhotka states, "Dominant and codominant oak density was maximized in 150 ft opening." He later states "An expanding-gap irregular shelterwood that uses intermediate gap sizes and midstory removal as a preparatory treatment around gaps may represent a novel silvicultural practice for increasing oak regeneration potential within the CHFR."



The same presentation by Dr. Lhotka illustrates research at Berea College Forest by Drs. Lhotka and Stringer showing that optimal oak regeneration and development occurs in the edge environment just outside of harvest areas. They show less successful oak recruitment occurring *within* the harvest area than in the 20 m *outside* of the harvest area (in uncut forest). This suggests that intermediate levels of harvest, or smaller harvests with greater

spatial distribution (more edge effects), would better assist in recruiting oaks than 20 to 40 acre shelterwood harvests.



While not optimal for all species, intermediate-sized group harvests can also provide suitable habitat for some species requiring young forest habitat. For example, King et. al (2001)[1] state:

> Our results indicate that the nesting success of early successional shrubland birds in clearcuts and groupcuts is similar; however, some species that are characteristic of large openings, such as those created by clearcutting, are absent from smaller habitat patches created by group selection.

There is also literature showing that Appalachian populations of ruffed grouse tend not to venture far into harvested areas, instead preferring young forest near the boundary with more mature woods. It has also been shown that female grouse with young broods are as likely to utilize patches of early successional habitat created from mature forest canopy gaps as they are young forest created by large clearcuts. For example, Jones (2005)[2] states:

> With respect to forest types, broods used mixed oak stands in the 0–5, 6–20, and >80-year age classes. Site conditions were submesic to subxeric with northern red oak and red maple dominant in the overstory and flame azalea, American chestnut sprouts, red maple, serviceberry, and northern red oak, in the midstory (Tables 3.9, 3.10). The 0– 5-year class was represented by use of 3–4-year-old group selection cuts and edges of 2 recently harvested irregular shelterwood (i.e., 2-aged) stands. Broods also utilized edges of 6–20-year-old mixed oak clearcuts, but seldom ventured into their interior.

We recognize that uneven-aged and group selection systems may not provide habitat for all species that rely on early seral habitat. However, that is a large part of why we are supporting the Forest Service's proposed Actions 2.A and 2.B (along with existing and proposed prescribed fire prescriptions) for creating – and maintaining –

[1] King, David, Richard M. Degraaf, and Curtice R. Griffin (2001) Productivity of early successional shrubland birds in clearcuts and groupcuts in an eastern deciduous forest. Journal of Wildlife Management 65(2):2001.
[2] Jones, Benjamin Colter, "Ruffed Grouse Habitat Use, Reproductive Ecology, and Survival in Western North Carolina. " PhD diss., University of Tennessee, 2005.

woodland habitats. These prescriptions will create larger scale, persistent early seral and shrubland habitat on 980 acres, avoiding perpetual tail-chasing of the balancing age classes model. Punctuating the developing, mid-aged, codominant forests of the project area with uneven-aged and intermediate-sized group selection methods, instead of relying on shelterwood prescriptions, offers an effective means of moving toward more within-stand structural complexity while also effectively managing for oak recruitment and functional early seral habitat for some species.

Of note, in our surveys of the proposed Designated Old-Growth addition south of Rock Creek Research Natural Area, we came across two large, natural canopy gaps of about 1 and 2 acres. Each of these natural, large gaps exhibited characteristics of high-quality, functional early seral habitat. In the surrounding mature and old-growth forest we saw abundant and fresh turkey and deer sign. These large gaps are more common in old-growth type forests because of the large amount of canopy removed when very large trees come down in a natural event. In effect, managing for actual old-growth is also managing for early seral habitat. But these characteristics aren't really emergent until around 150 years or so. Appropriate silviculture can mimic these disturbances in codominant stands of lesser maturity (e.g., stands 70 to 120 years old). Furthermore, the impending loss of mature and old-growth hemlock forests throughout the project area will certainly drive the creation a significant amount of functional early seral habitat at the patch and stand level.

3) Old-Growth

In our scoping comments we addressed several issue relating to old-growth, including detailed maps and rationale for larger designations including upland forest types. These comments were apparently ignored. There appears to be a pervasive misunderstanding of what old-growth is, despite the rather good language in the 1997 Region 8 Guidance for Conserving and Restoring Old-Growth Forest Communities on National Forests in the Southern Region (R8 Old-Growth Guidance) that is incorporated into the Daniel Boone Forest Plan. In general terms, it appears that DBNF staff are stuck in an antiquated successional view of old-growth, where forests develop without disturbance and gradually shift to dominance by increasingly shade tolerant species. It seems that some foresters use this to equate old-growth with mesophication. Modern (if the last 30 years can be considered "modern") understandings of old-growth are largely structural and community-specific, with old-growth dry-mesic oak forests, old-growth woodlands, and so forth. Again, the Daniel Boone Forest Plan incorporates the Region 8 Old-Growth Guidance, which addresses this issue.

As stated in our scoping comments, effectively limiting old-growth designations to areas below cliffline limits the variety of forest types allowed to develop, and exist, in an old-growth condition. We also need to point out that it is ecologically and scientifically flawed to equate areas that "will be allowed to naturally mature into older forests" (Affected Environment at 16) with forests that are, or function as, old-growth. You are asserting that immature forests (many of which are decades or even a century away from developing old-growth characteristics) are functioning effectively as old-growth because you're not proposing to log them in the near future. This is essentially the same as asserting that 100-year forests that might get knocked down by a windstorm in 30 years are providing functional early seral habitat. With all due respect, these assertions are deeply flawed, absurd, and misleading.

The Affected Environment document also makes what appear to be incorrect determinations in Table 4 about meeting the Forest Plan's Desired Future Condition (DFC) to "Maintain at least 8% of each old-growth type in patches greater than 300 acres in size." It's hard to tell how several of the listed old-growth types are meeting this DFC as asserted, especially without maps delineating areas. It appears that "scattered" units are being added together, which is not consistent with the Forest Plan.

For example, Table 4 states that the DFC for Dry and dry-mesic oak-yellow pine is met with "877 ac; scattered; most in SE, NE." We don't see an 877 block of POG or FOG for this forest type in our analysis of the data. Under the Proposed Action/Design Criteria for meeting this, Table 4 also states "Action 7 proposes adding 130 acres of DOG in the Angel Hollow Area." But, as we've pointed out before, the proposed DOG in the Angel Hollow area is entirely hemlock mixed-mesophytic forest under the cliffline. This is a particularly aggravating assertion, given that we provided a map in our scoping comments delineating an old-growth boundary for Angel Hollow that includes older upland forest community types in order to meet these objectives.

Table 4 also says that the DFC is met for Confier-northern hardwood forest with "374 ac, but scattered out along east side of IRMS unit." If this is the case, then the DFC is not met. For Dry-mesic oak forest and woodland, Table 4 states that the DFC is met with "524 ac; large block along Cumberland River." We're not sure where this is.

Please provide maps for all of these areas, and include a discussion on the actual stand ages and structural attributes of these forest blocks. Absent this information, the old-growth proposal and analysis is arbitrary.

4) Threatened and Endangered bat species

The EA states that "There are no known occupied (Northern long-eared or Indiana) bat maternity roost tress within the project area (EA-43). The Biological Assessment (BA) states:

> **Evaluated Species Survey Information**
>
> The PET and Sensitive species records for the London Ranger District of the Daniel Boone National Forest were reviewed during June, July, and August 2019.
>
> Cooperative Inventory of Endangered, Threatened, Sensitive and Rare Species, Daniel Boone National Forest, London Ranger District, May, 1994. USFS, TNC, KSNPC, and KDFWR – reviewed during June, July, and August 2019.
>
> The Kentucky State Nature Preserves Commission Heritage Database as of February 2004, reviewed during June, July, and August 2019.
>
> (BA at 25)

It doesn't appear that anyone has actually looked for maternity colonies in the project area, and certainly not in recent years. This is a substantial flaw affecting the analysis and any decisions being made.

The U.S. Fish and Wildlife Service (USFWS) wrote in a April 11, 2019 letter commenting on the recent Forest Plan Amendment Draft Environmental Assessment that:

> Little is known about the summer usage of the DBNF by Indiana bat. ***Limited survey efforts from over a decade ago have provided the location of some maternity colonies and roost trees.*** However, the DBNF has stated that some portion of the large number of bats that spend the winter in the large and medium-sized hibernacula on the DBNF are thought to remain in these areas throughout the summer (USFS 2003). Based on 2018 and preliminary 2019 winter bat count data, approximately 5,600 Indiana bats are estimated to hibernate on the DBNF during the winter (USFWS, internal data). In addition, the DBNF also indicated that Indiana bats from nearby hibernacula on Pine Mountain, Carter Caves, and in Campbell and Fentress Counties in Tennessee are thought to occur on the DBNF (USFS 2003). ***Based on this information, it appears likely that there are other Indiana bat and northern long-eared bat maternity colonies present that have not been documented.*** This

habitat and the individual bats occupying these areas could be adversely affected by future forest management actions if there are no protective standards proposed for potential summer habitat for either species. Therefore, we recommend developing conservation measures in the BA that would avoid and minimize adverse effects. Several such measures were discussed during the November 2017 science meeting, including identifying and avoiding potential primary roost trees during tree removal activities and limiting the amount of tree removal that can occur during the occupied timeframe, especially during June and July when non-volant pups are present. (emphasis added)

Both the Biological Assessment and Biological Evaluation make incorrect and arbitrary statements regarding the effects of green tree harvesting on Indiana and northern long-eared bats. The documents state "Foraging habitat will be altered and potentially improved with timber harvesting activities including haul roads, skid trails and landings" (BA at 40 and 41).

While Indiana and northern long-eared bates will sometimes use more open habitats for foraging, timber harvest that removes most of the forest canopy does not *improve* foraging habitat for either of these federally-listed bat species. See, for example:

- Menzel, Michael A.; Menzel, Jennifer M.; Carter, Timothy C.; Ford, W. Mark; Edwards, John W. 2001. Review of the forest habitat relationships of the Indiana bat (Myotis sodalis). Gen. Tech. Rep. NE-284. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 21p.

  "Canopy Cover of Stands The canopy cover in stands used by Indiana bats is described inadequately, though stand characteristics can be inferred from Gardner et al. (1991b), Kurta et al. (1996), and Callahan et al. (1997). Methods used by Gardner et al. to measure canopy closure best describe closure at the stand level. Of 48 roosts that they found in forested habitats, 32 were in closed-canopy forests, 12 were in intermediate forests, and 4 were in open-canopy forests."

- Womak et. al (2013), Resource Selection by Indiana bats During the Maternity Season. The Journal of Wildlife Management 77(4):707-715

  "A positive relationship of canopy cover with selection was the most frequently supported covariate for individuals and was supported in the population model. Increased use of areas with high canopy cover is consistent with others studies showing Indiana bats are found in areas with high canopy coverage… Indiana bats' small body size, low wing loading, and high echolocation frequency allow them to navigate well in high clutter environments such as closed canopy forest… In addition to being adapted to foraging in closed canopy forest, Indiana bats may be associated with high canopy cover forest for roosting habitat. Out of 48 Indiana bat roost trees in Missouri, 32 were in closed-canopy forest, 12 in intermediate canopy cover, and 4 in open-canopy areas… The probability a bat selected a point was greater for shrubland and forest habitats than agricultural habitat and increased with canopy cover. Therefore, practices that eliminate forest or greatly reduce canopy cover over large areas may have negative impacts on Indiana bats. Our study supports the premise that bats will use a broad array of vegetation types for foraging

Also see language and references relating to his in our comments on the Draft EA for the Forest Plan Amendment dated April 15, 2019 (attached), especially **3. Even-aged Management is Not Good for Indiana and Northern Long-eared Bats.**

5. Botanist's Report and rare plant impacts

For the most part, we appreciate the thoroughness and quality of the Specialist's Report Rare or Uncommon Botanical Resources and Non-Native Invasive Species For the Pine Creek Forest Restoration Project (Botanist's Report). We do have some concerns and additional information to provide.

5.A. Inadequate survey data

From our review of the Draft EA and associated documents, and conversations with staff at the Kentucky Office of Nature Preserves (KNP), it is our understanding that the surveys used to inform the project are all historical. It is also our understanding that the DBNF has contracted with KNP for surveys, but only to resurvey previously known rare plant occurrences. The FEIS for the Forest Plan recognizes that data for Rare Communities are incomplete, and states that these gaps in information will be filled during the analysis of individual projects. However, this has not been happening.

The Report states:

> Site level assessment begins with a review of current and historical data during the planning phase. Based on the review, additional assessment may be made during the implementation phase. (Report at 3)

Similarly, the Report states in several instances that impacts to rare flora will be limited through avoidance measures. For example:

> The information was also used to identify avoidance and minimization measures or modifications to the proposed action that would reduce or eliminate impacts or improve habitat for various plant species. (Report at 4)
>
> Since directional felling and avoidance would keep both vehicles and heavy brush off of the [Roundleaf] fameflower locations (5149), no direct effects are expected to the species. (Report at 44)
>
> Since directional felling and avoidance would keep heavy brush off of and reduce or prevent trampling in fameflower and sandwort locations, no direct effects are expected to the species. (Report at 46)

And from the Draft EA:

> Five early seral units occur in the general documented area of Curtis's goldenrod. No other rare plant species are documented from these units. Early seral habitat treatments would have adverse impacts on individuals or small populations of goldenrod by opening up an area to significant light and drier conditions, but it might survive in more open areas as long as shady, moist areas remain. Directional felling and caution can eliminate most of this concern. This is most likely to happen near cliff edge and less likely near a glade or outcrop which could be delineated as a no activity area. Other populations of Curtis's goldenrod are found in the IRMA. (EA-25)

Also, from the Effects Summary:

> 7) Wood lily in particular and associated sunny conservative species are avoided with equipment and herbicide application (Effects Summary at 52)

The avoidance measures presented for limiting impacts to rare plants species and rare communities are predicated on knowledge of their locations. But if surveys for new locations have not been carried out, then avoidance measures cannot be satisfactorily implemented. While the Botanist's Report states that "additional assessment

may be made during the implementation phase," and that "Some field surveys may be conducted prior to implementation" (Report at 4), we know that the only botanist on the forest (David Taylor) is rarely afforded the time to conduct such surveys, and other personnel are simply not qualified to identify rare plant species.

5.B. Notes on specific plant species and locations

- The Report states that Rattlesnake master (*Eryngium yuccifolium*) is not considered because "London outside KY range." We reviewed data in iNaturalist and found an occurrence uploaded by Tara Littlefield that may be in the project area. The specific location was obscured, with the data point presenting in the Cumberland River at the confluence with Fish Trap. This is near a powerline ROW on the Laurel County side, so it is highly possible that this species occurs in the project area.
- The Report states that large whorled pogonia (*Isotria verticiallata*) is not in the project area but will be considered. iNaturalist shows a location (affirmed as "Research grade") in a tributary of Hawk Creek just down from 1956 below Burnett Rd. near the Sheltowee Trace, in the project area.
- The Report states that dwarf ginseng (*Panax trifolius*) is not known in project area but will be considered. It is in project area, abundant along Hawk Creek per our observations.
- With regard to Stewartia ovata (Mountain camellia), the Report states "Species known from at least one unit proposed for WMA; designation likely to bring increase foot traffic and increase risk for unintentional damage to individuals" (Report at 57). However, we have noted this species in several areas within the IRMA (more information below).

These observations illustrate the problems of not surveying the project area prior to vegetation management.

5.C. Stewartia ovata

Stewartia ovata (Mountain camellia) is a geographically restricted (and lovely) small tree or large shrub. As noted above, the Botanist's Report only recognizes one site, in the proposed WMA, stating that potential impacts would largely be from increased foot traffic.

We have observed a very large population extending across all three stands proposed for shelterwood harvesting at the end of FR 4232 above Pine Creek. This stand also has some nice old-growth characteristics (old and large trees, den trees, active gap dynamics, etc.) These sites are upland sites (above the cliff break), contrary to the habitat description in the Report, which states "Species associated with resource element 2, would be expected on the slope units. Plants associated with resource element 3, could be expected on the upland sites."

We have also observed *Stewartia ovata* in both of the proposed shelterwood units on the east side of Pine Island Branch along FR 4117. We visited the more southern of these two stands with you on April 17, 2019 and pointed out several old-growth tulip poplar trees and some especially large black and northern red oaks as we walked the user trail created to access Pine Island Double Falls.

A recent doctoral dissertation, *Regeneration of Imperiled Hardwoods in the Eastern United States* (Granger 2017), describes microhabitat associations for S. ovata in east Tennessee. Granger states:

> Across inventoried sites, stewartia was found consistently under closed canopy stands primarily stocked with relatively large eastern hemlocks, eastern white pines, white oaks, red maples, and hickories. The presence of large conifer snags, heavy woody debris, and large diameter eastern hemlocks and eastern white pines indicate stands with characteristics typical of old-growth, low-disturbance forests.

> With mountain stewartia having unique niche preferences, the species may represent an indicator species for old growth forests and areas of high biological diversity. However, the species' unknown tolerance to disturbances such as adelgid-induced mortality in eastern hemlocks, altered fire regimes, and timber harvest practices provide a rich area for future research.

Stewartia ovata is associated in the Botanist's Report with resource element 2, despite it being found in more upland conditions in these particular sites. While careful thinning could potentially benefit these individuals and populations, shelterwood harvest would likely cause negatively impact through drying of the site, competition with dense regrowth following harvest, and damage from logging operations. This is a species that many resource specialists (including foresters) are likely to walk right by without any notice, making avoidance during the marking and harvesting phases of the project unlikely.

6) Action 9.E: Install gates at NFS Roads 4117, 816A, and 4094

We are generally supportive of road closures to protect natural resources. However, it is often the case the gates serve to block regular vehicle traffic while still permitting (albeit illegally) OHV/ATV access. In some cases, it appears that damage actually worsens as areas become accessible only to the off-roading crowd. If these roads are to be gated, then the Forest Service needs to make sure that access is suitably blocked from OHV/ATV access.

7) Sheltowee Trace National Recreation Trail

We generally support moving the Poison Honey Fork segment of the Sheltowee Trace off the road and into the forest (Action 9.D). However, part of the rationale for this does not make sense. The EA states:

> A re-route of the Poison Honey section of the Sheltowee Trace NRT was requested by the public because of concerns regarding the safety of recreationists along Poison Honey Road due to log trucks and heavy machinery. The proposed action has been modified to satisfy this request… The new trail would be constructed after the timber harvests are complete, using monies generated by the timber sale. If needed, the new trail could serve as a control line for future prescribed fires. (EA-19)

How can moving the trail off the road *after* log trucks are done using the road address safety issues created by log trucks on the road?

We are also concerned about closures on this, and any other, sections of the Sheltowee Trace NRT. The EA states:

> Temporary trail closures would occur during active tree felling for public safety, and signs would be posted. Some trails and roads would be closed for up to 1 month, or on and off for shorter term intervals during the implementation of some of the proposed silvicultural activities. This could potentially displace some hunters and trail users; however, there are thousands of unaffected areas on the Forest outside of the specific treatment area that are available for recreational use. Further, duration and length of trail closed at any given time during project implementation would be minimal and not all areas would be closed at one time. Closures would be sporadic in nature and unlikely to cause an impact. (EA-20)

While the temporary closure of some trails may not seriously impact most forest users (as they can go to other areas and trails), this is not the case for the Sheltowee Trace National Recreation Trail. According to the Sheltowee Trace Association, more than 200 people thru-hike or hike large sections of the Sheltowee Trace each year. A closure can create unsafe conditions where hikers either must bushwhack through uncertain terrain or ignore the closure and hike through an active logging operation.

The Multiple-Use Sustained Yield Act of 1960, Section 2, states:

> "In the administration of the National Forests due consideration shall be given to the relative values of the various resources in particular areas."

The Act goes on in Section 3(a), stating:

> (a) ''Multiple use'' means: The management of all the various renewable surface resources of the national forests ***so that they are utilized in the combination that will best meet the needs of the American people***; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and ***harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources***, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output. (Emphases added)

The Sheltowee Trace was designated a National Recreation Trail in 1979. It is special, and its uses as a National Recreation Trail, and a long-trail used by visitors from around the United States and globe, requires different consideration from that given to other recreational infrastructure and activities in the project area. Logging along Poison Honey Fork road is an unnecessary and significant conflict of uses, and of the sort meant to be avoided per the Multiple-Use Sustained Yield Act. It's also worth noting that the Forest Service logged over 300 acres is this general area between 1982 and 1992. It would be best to just leave this section alone.

8) Hemlock decline and cumulative impacts

Using DBNF inventory data, we estimate that there is approximately 5,000 acres of hemlock forests on national forest land in the project area. Approximately 1,150 acres of hemlock forests have been designated has Hemlock Conservation Areas (HCAs) for treatment to protect them from hemlock woolly adelgid (HWA), though, in reality, treated stands are usually only partially treated. However, even if all HCAs were treated, that would still leave around 3,850 acres of forest undergoing (with near certainty) severe mortality and canopy loss. The Draft EA and associated documents make hardly any mention of HWA. In section 3.9.3 Cove habitat, the Affected Environment document states:

> However, many hemlock stands are in decline due to infestation of hemlock wooly adelgid. (Affected Environment at 20)

That's the only reference we've found in any of the available documents. Decline and mortality of hemlocks is currently under way in the project area. Within the implementation period for the Pine Creek project it is a near certainty that there will be significant mortality with major effects on forest structure, quantity and quality of old-growth, and available early seral habitat. The EA addresses none of this.

9) Range of alternatives

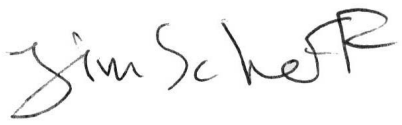
We see no discussion of any alternatives to the proposed action, including a No Action alternative. The Draft EA states:

> Several alternatives were considered, but dismissed from further analysis because they did not meet the need for action. These alternatives and the rational for their dismissal are in the project record. (EA-5)

This is the only reference to the development or analysis of alternatives in any of the publicly available documents. We provided several options and proposed modifications to the proposal that could meet the purpose and need, but no discussion of these is apparent in any of the documents that the Forest Service has made on the project website. The Forest Service should revise the EA to include a range of alternatives, including suggestions that we have made, that offer other approaches to meeting the purpose and need for the project.

Again, we thank you for this opportunity to submit comments on the Draft EA for the Pine Creek project, and look forward to continuing our dialogue.

Sincerely,



Jim Scheff, Director
Kentucky Heartwood
P.O. Box 1482
Berea, KY 40403