



# KENTUCKY HEARTWOOD

Protecting the Beauty and Wellbeing of Kentucky's Native Forests

Robert Claybrook  
Redbird District Ranger  
91 Peabody Road  
Big Creek, KY 40914

April 1, 2018

RE: South Redbird Wildlife Habitat Enhancement Project

Dear Ranger Claybrook,

Thank you for the opportunity to submit comments on the South Redbird Wildlife Habitat Enhancement Project. These comments are submitted on behalf of Kentucky Heartwood and the Center for Biological Diversity. This project presents a number of significant concerns with regards to federally-listed species, forest composition, and other issues that need to be thoroughly addressed in any future analysis.

## **1. Not collaborative, so please stop using that term**

Kentucky Heartwood actively participated in the early public input opportunities held by the Forest Service for the South Redbird project, including the public meetings on February 22 and August 24, 2017, February 20, 2018, and the field trip on May 2, 2017. The Forest Service loosely referred to these meetings as “collaborations.” As a result, the Forest Service listed Kentucky Heartwood as a “collaborator” in the scoping document. However, few (if any) of the comments, concerns, and constructive input provided by Kentucky Heartwood during those opportunities and by email are reflected in the scoping document. In fact, we see little in the proposed action that reflects any of the concerns we observed being raised during the pre-scoping opportunities outside of the clearly pre-determined, agency-driven emphasis on grouse management through large-scale, even-aged timber harvests.

We will address several of the specific issues and suggestions that were previously raised (and ignored) in the following sections of this letter. But it needs to be stated clearly here, at the outset, that the process was not collaborative in any sense of the term. It is clear from the proposed action that the Forest Service knew what type of management would actually be proposed through the NEPA process, and that the time, effort, and sincere input by Kentucky Heartwood and others was simply a veneer to sell the project. Following our experience with the Greenwood project on the Stearns District, we were promised emphatically by Supervisor Olsen and other forest leadership that future projects would be put together in a more genuinely collaborative, open manner. Frankly, we feel misled and used by the Forest Service.

It should also be noted here that the Forest Service, on February 23, opted to release for scoping an amendment to the Forest Plan that loosens logging restrictions implemented to protect Indiana bats. Scoping for the South Redbird project was published on March 1, and scoping for the Pine Creek project on March 22. In total, these projects cover management on nearly 80,000 acres of national forest land, including over 7,000 acres of commercial logging, and a major change in forestwide management for an

endangered species in critical decline. While the Forest Service has been making overtures about bringing the public into an open public lands process, this coordinated avalanche of significant proposals and comment deadlines belies the statements made to us and the public at large.

## **2. Kentucky arrow darter and Snuffbox mussel**

As the Forest Service notes in the scoping document, the project area includes a substantial portion of the designated critical habitat for the federally-threatened Kentucky arrow darter (*Etheostoma spilotum*). We expect a robust, transparent analysis of potential impacts to the Kentucky arrow darter, including consultation with the U.S. Fish and Wildlife Service. During the analysis for the Spring Creek project (which is encompassed by the South Redbird project), the Forest Service stated that there was no Kentucky arrow darter habitat in the project area, despite agency staff knowing this to be untrue. At this time, the Forest Service has little credibility on this issue. The Forest Service has a duty to take proactive measures to support the Kentucky arrow darter. We do not see that represented in the scoping document.

With regards to the Snuffbox mussel (*Epioblasma triquetra*), the scoping document states:

“Known populations of the snuffbox mussel occur in Elisha Creek less than a half-mile upstream of the project area boundary.”

However, the entirety of the Elisha Creek watershed is within the project area, so it is difficult to understand how this is the case.

While efforts to clean up the mainstem of the Redbird River are laudable, the fact is that the Redbird River itself is not habitable by these species on account of pollution from mining and oil and gas operations, and the tributaries on national forest land must be protected from any form of additional degradation.

The Forest Service has a proactive duty to work toward the recovery of these species. Addressing sewage in the Redbird River and adding culverts to a couple of logging roads is not sufficient toward this end.

## **3. Ruffed grouse emphasis**

It is clear that timber management for Ruffed grouse (*Bonasa umbellus*) populations is an emphasis in this project. While grouse are only briefly mentioned in the scoping document, the “need” to establish more young forest habitat for grouse was a predominant theme among state and federal agency personnel during pre-scoping meetings. While we recognize that Appalachian populations of grouse are declining, grouse are neither federally nor state-listed as threatened or endangered. Furthermore, in 2008 the Daniel Boone National Forest approved over 1,200 acres of timber harvest immediately north of the South Redbird project area. The “Group One” project also included a Forest Plan amendment to establish a 12,000 acre Ruffed Grouse Emphasis Area to be co-managed by the U.S. Forest Service and Kentucky Division of Fish and Wildlife Resources (KDFWR). Per the Goals and Objectives for Forest Plan Prescription Area 3.H.1 Ruffed Grouse Emphasis, the 12,000 acre area (minus riparian restrictions), is intended to be managed under 60-year even-aged timber rotations. In our conversations during the pre-NEPA “collaboration” meetings, we asked both district forester Jared Calvert and Zak Danks (Grouse coordinator for KDFWR) about the progress of management in the Group One project and Ruffed Grouse Emphasis area and no answers were forthcoming.

It is also notable that the Daniel Boone National Forest experienced a massive outbreak of the southern pine beetle between 1999 and 2002 that induced regeneration events on tens of thousands of acres across the forest. We are nearly 20 years out from that event, and therefore, based on conventional habitat assumptions, many sections of the DBNF should be experiencing significant increases in grouse numbers. Are there data to respond to this? If grouse have not responded to these widespread natural regeneration events, then what else is going on? Are there issues that need to be addressed with hunting pressure? If populations are crashing, then a 4 month grouse season, with a 4 bird/day limit may be inappropriate. Has West Nile virus been considered with regard to site-specific habitat modeling?

Furthermore, hemlocks are now dying in the Redbird district. The published scientific literature for the Appalachian region shows preferential use by grouse of mixed mesophytic forests on account of preferred and reliable forage (catkins, buds, etc.). How many acres of hemlock-mixed mesophytic forests are in the South Redbird project area? How many acres of openings in these mixed mesophytic landscape positions should we expect? It is plausible that the death of the hemlocks will reflect in a positive response in grouse populations due to increases in understory forage.

In terms of habitat, the relationship between young poletimber (forests ~15-20 years old) and grouse is well established. However, it has also been shown that reproductive female grouse in the central Appalachians preferentially use mature, closed canopy forests with little understory vegetation along with the presence of larger diameter trees and coarse woody debris for nesting.

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)<sup>1</sup> 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 subseric 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.

It's notable that the forest ages between 20 and 80 years were largely useless to grouse – the range of ages that dominate the South Redbird project landscape. It's also notable that canopy gaps in old-growth forests (>140 years) tend to be substantially larger and more frequent than those found in ~80 year-old forest which tend toward smaller gaps and an even, closed codominant canopy structure. Furthermore, it needs to be noted that broods “seldom ventured into (the) interior” of clearcuts, suggesting that large group selection harvests (or large gaps in old-growth forest) could meet the habitat needs of this species without sacrificing so many other values and the habitat needs of other species.

We'll also add here that home ranges for grouse in the central Appalachians tend to be much smaller than many of the areas proposed for harvest in the South Redbird project, some of which range from 210 to 360 acres. Grouse success in the central Appalachians appears to be associated with home ranges in the tens of acres that include mixed-mesophytic and riparian habitat, areas of closed canopy forest with open understories and coarse woody debris, and patches of poletimber. The massive zones of regeneration

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<sup>1</sup> Jones, Benjamin Colter, "Ruffed Grouse Habitat Use, Reproductive Ecology, and Survival in Western North Carolina." PhD diss., University of Tennessee, 2005.

harvests and thinning proposed may very well degrade grouse habitat by reducing the complexity of habitat components.

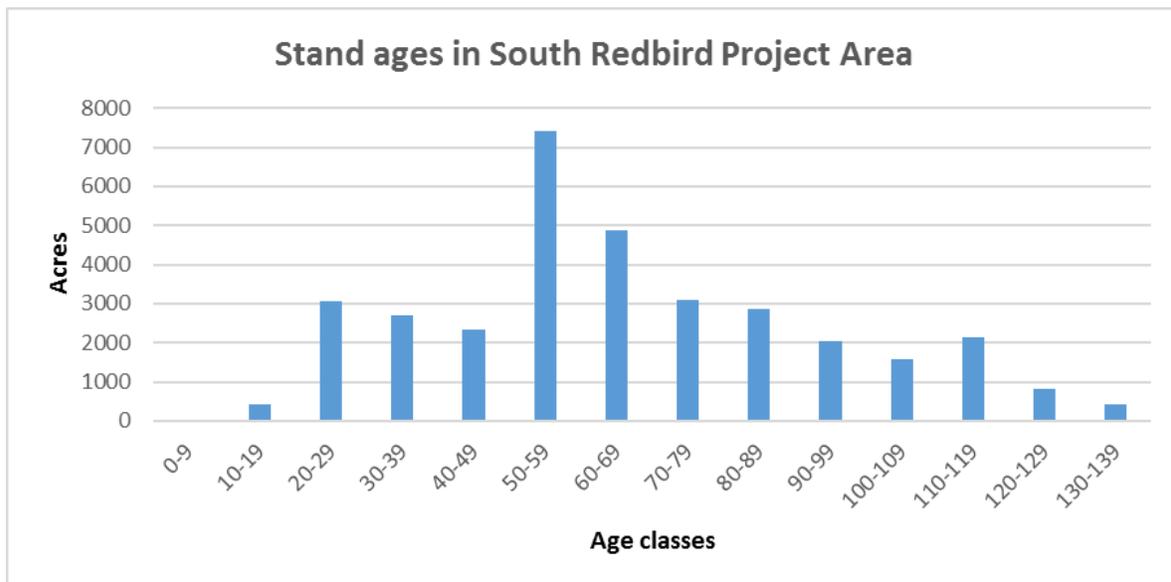
In order to address the habitat needs of grouse in a manner more consistent with the historical ecology of the area, Kentucky Heartwood suggested at multiple junctures during the pre-NEPA “collaboration” period that the Forest Service consider alternative silvicultural methods. Specifically, we suggested that the Forest Service consider demonstrated approaches that combine selective thinning aimed at promoting the complex and locally underrepresented forest structure associated with old-growth conditions along with large group selection cuts in suitable locations to provide for forage and future poletimber cover in a matrix of developing forest. Despite proposing 3,200 acres for logging, our recommendations are not reflected in any way in the scoping proposal.

#### 4. Forest ages

We submitted extensive and detailed comments regarding forest ages and old-growth form and function to the Redbird District on the Spring Creek project, which is within the South Redbird project area. Rather than repeat all of it here, we incorporate it by reference and ask that you review those comments.

Our analysis of the project area using DBNF data shows that the forests in the project area are, on the whole, very young. We note a few statistics here:

- 15% of the forest in the project area (4,965 acres) is over 100 years old
- 2% of the forest in the project area (700 acres) is over 130 years old
- 9% of the forest in the project area (2,924 acres) has been cut since 1990
- 18% of the forest in the project area (5,837 acres) has been cut since 1980
- 23% (1,157 acres) of all forests over 100 years old are proposed for regeneration harvests



Comparing the rather unnatural, even-aged condition of the forests on national forest system lands with multi-aged old-growth forests is a little “apples and oranges,” but we point below to data from a 2014 study from the nearby Lilley Cornett Woods Appalachian Ecological Research Station<sup>2</sup>. We cited data from Lilley Cornett Woods – one of the most extensively studied old-growth forest in eastern North America – in our comments on the Spring Creek project. Data from Lilley Cornett Woods are extremely relevant to understanding the natural ecology of the Redbird District and the forests in the South Redbird analysis area. Both forests are within the Dissected Appalachian Plateau Level IV Ecoregion, consist of similar slopes, elevations, and aspects, and are less than 25 miles apart.

As is apparent from the data, tree ages in Lilley Cornett Woods date to the mid-1600’s. Notably, the age data from the project area shows stand or canopy ages being less than 1/3 that of the oldest lived individuals in Lilley Cornett Woods. In other words, the data show that stand ages in Lilley Cornett Woods are up to or exceed 350 years, in contrast to the oldest stands in the South Redbird Project being only around 130 years old - and only a tiny acreage. The structural characteristics and processes associated with old-growth in the region do not emerge until around 130 years or more<sup>3,4</sup>. As such, old-growth structural associations are effectively non-existent in the South Redbird project area. These included large trees (including cavity trees), large snags and coarse woody debris, complex canopy structure, and, importantly, large gap formation.<sup>5</sup> Such associations need to be both conserved and enhanced in a deliberate, science-based manner. Reliance on landscape-scale regeneration cuts in the forests of the South Redbird project area represents a regressive, agronomic, and economically driven vision of forest ecology in the region.

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<sup>2</sup> McEwan et al. (2014). Fire and gap dynamics over 300 years in an old-growth temperate forest. *Applied Vegetation Science* 17 (2014) 312–322.

<sup>3</sup> Scheff, Robert (2012). The Development of Old-Growth Structural Characteristics in Second Growth Forests of the Cumberland Plateau, Kentucky, USA. Master’s Thesis, Eastern Kentucky University.

<sup>4</sup> USDA FS. 1997. Guidance for conserving and restoring old-growth forest communities on national forests in the southern region. Report of the Region 8 old-Growth Team. United States Department of Agriculture Forestry Report R8-FR, 56.

<sup>5</sup> It cannot be stressed enough that gap formation in well-developed older (>140 year) forests is functionally different than in younger forests. Large trees in older forests, upon falling, are more likely to take out larger patches of canopy trees, thereby creating functional patches of early successional habitat within the old/mature forest matrix. Smaller-canopied trees in codominant stands tend to create smaller gaps upon falling. These smaller gaps experience quick, lateral closure rather than the establishment of a new cohort at the patch scale.

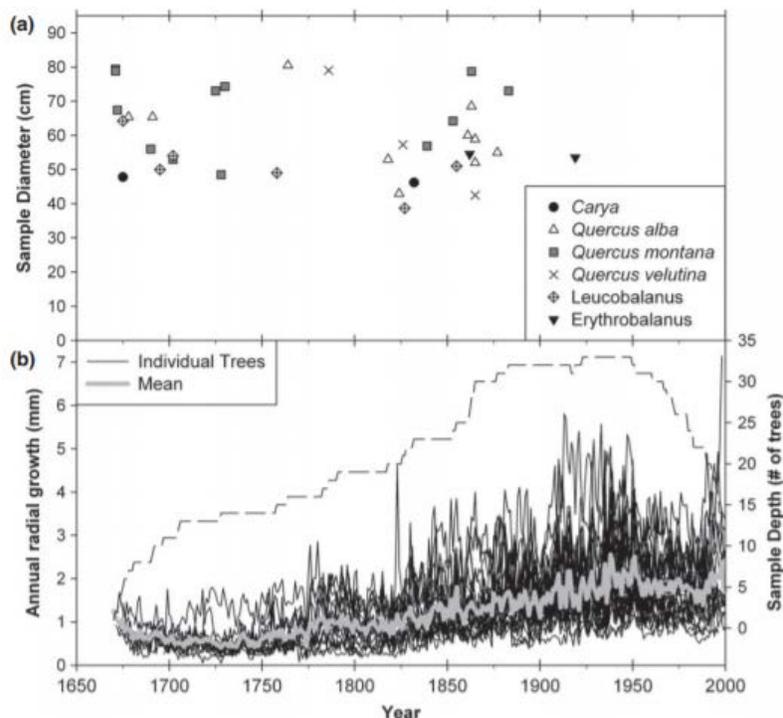


Fig. 1. Diameter and initiation dates (a) and annual growth (b) of tree cross-sections collected in an old-growth temperate deciduous forest, central Appalachian Mountains, USA.

## 5. Alternative silvicultural methods

Early in the process, we discussed with Jared Calvert the possibility of utilizing demonstrated, alternative silvicultural approaches to promote or enhance the within-stand structural diversity of forest stands in the South Redbird project area. While Kentucky Heartwood does not endorse the commercial sale of timber from our national forests, we believed that these methods would be worth considering as a more ecologically appropriate means for the Forest Service to meet multiple use objectives for harvesting timber.

In April, 2017, we emailed the following studies and reports to Mr. Calvert:

- **Accelerating the Development of Old-growth Characteristics in Second-growth Northern Hardwoods**, USDA Forest Service, Northern Research Station, General Technical Report NRS-144. Authors: Karin S. Fassnacht, Dustin R. Bronson, Brian J. Palik, Anthony W. D'Amato, Craig G. Lorimer, Karl J. Martin (February 2015).

- **Managing for late-successional/old-growth characteristics in northern hardwood-conifer forests**, *Forest Ecology and Management* 235 (2006) 129–142. Author: William Keeton (2006).
- **Restoring Old-Growth Characteristics**, University of Massachusetts-Amherst Extension. Authors: Anthony D’Amato and Paul Catanzaro
- **Pioneer Forest - A Half Century of Sustainable Uneven-aged Forest Management in the Missouri Ozarks**, USDA Forest Service, Southern Research Station, General Technical Report SRS-108. 2008.
- **The Vermont Forest Ecosystem Management Demonstration Project**, University of Vermont, Rubenstein School of Environment and Natural Resources. Presentation and summary of findings. Austin R. Troy, Allan M. Strong, Donald R. Tobi, Margaret Skinner from William Keeton. 2008.

Combining these methods with group selection cuts, as discussed above in section 3. **Ruffed grouse emphasis**, could help meet the purpose and need of the project while supporting the development of old multi-age forest structure on the landscape, and further limiting the risk of erosion and stream sedimentation on these steep slopes. Or you could just let things be. But we assert that the above represents an extremely reasonable approach, and we are mystified as to why it was wholly rejected by the Forest Service in the development of the scoping document.

## 6. Oil and gas infrastructure

Before any decision is made, the Forest Service needs to conduct a thorough analysis and mapping of oil and gas infrastructure, including access roads, wells, collection lines, pumps stations, and holding tanks. This infrastructure is found throughout the project area, and may be contributing substantially to water quality issues, invasive species infestations, and habitat fragmentation. In the Spring Creek project, which is within the South Redbird project area, the Forest Service refused to acknowledge the presence of an oil and gas road running straight up a steep slope, through a proposed shelterwood harvest unit, and terminating *in* Spring Creek. The Forest Service improperly relied on gaps in split estate authority to avoid consideration of on-the-ground facts. This is unacceptable. The Forest Service needs to do better in the South Redbird analysis.

Among other obligations, the *Candidate Conservation Agreement for the Kentucky Arrow Darter (Etheostoma spilotum)*, signed by former Regional Forester Tony Tooke in August, 2015, states:

“The DBNF agrees to:

“3. Work with the USFWS to inventory and map natural gas lines, oil wells, roads, other facilities, land ownership, and mineral ownership within Kentucky arrow darter watersheds on the DBNF.”

If the Forest Service has not done so, complying with the above language in the CCA should be a prerequisite to approving thousands of acres of logging in the project area.

## 7. Prescribed fire

The proposed action includes 7,400 acres of prescribed fire. We question why, when the Daniel Boone National Forest is already spread beyond capacity on approved prescribed burn areas, the Forest Service has chosen to add more burn units to the inventory<sup>6</sup>. We don't argue that fire is necessarily bad for all forest communities in the project area (it clearly is for some, e.g. beech-sugar maple forests), but fire is certainly less important here than in other portions of the Daniel Boone.

The Cooperative Inventory of Endangered, Threatened, Sensitive, and Rare Species, Daniel Boone National Forest, Redbird Ranger District<sup>7</sup> states that the available historical information on forest composition in the district suggests a relatively low influence of fire in the Redbird forests.

“Also, the lesser amount of *Pinus* in the RRD, and perhaps some of the *Q. velutina* group, may also be attributed to a lower fire frequency in previous centuries (see also Campbell et al. 1991). Two other successional species in the modern landscape -- *Juniperus* and *Robinia* -- were not listed by Barton (1919) at all in the RRD, in contrast to other DBNF counties.” (Report at 7)

McEwan et al. (2014)<sup>2</sup> state:

“Across all dates, the mean number of years between a detected fire was 9.3 (SD of the mean: 10.9). The composite fire record suggests that the study site experienced relatively infrequent fires in the pre-settlement period followed by an increase in burn frequency ca. 1870-1950 (Fig. 3). Only four fires were detected in the ca. 100 yrs from the beginning of the chronology to 1775 (Fig. 3).”

And:

“We detected many fewer fires in the 1700s and early 1800s than in the period from 1875 to 1950. Studies conducted in deciduous forests that have access to fire scars from prior to 1850 largely support these findings.”

Prior to Euro-American settlement, based on fire scar histories and historical accounts of vegetation, it appears that fire was an infrequent disturbance event on the landscape, and not a major driver of natural community composition at the landscape scale. This is quite different from some areas in the Stearns and London Ranger Districts (i.e., areas covered by the Cumberland River Fire Learning Network). It is entirely possible that the local pastime of arson is inducing more frequent fire return intervals than those that shaped the landscape. The Forest Service needs to take a hard look at fire in the project area, and consider the relative historical importance of fire in the area, and how committing to burn this

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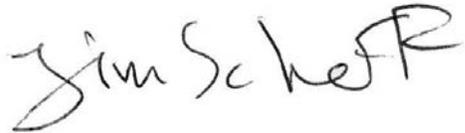
<sup>6</sup> As we have pointed out to the Forest Service on several occasions, more than 100,000 acres of land on the DBNF are approved for prescribed burning, but capacity has been limited to about 10,000 acres per year treated. The resulting average return intervals of one burn every 10 years is insufficient to maintain functional habitat for our more conservative fire-adapted species and natural communities, which often need fire every 2 to 3 years.

<sup>7</sup> Cooperative Inventory of Endangered, Threatened, Sensitive, and Rare Species, Daniel Boone National Forest, Redbird Ranger District. 1993. USDA Forest Service, The Nature Conservancy, Kentucky State Nature Preserves Commission, and Kentucky Department of Fish and Wildlife Services.

substantially increased acreage in the Redbird District would divert resources from areas in the Daniel Boone with much higher frequencies of conservative, fire-adapted species.

In general, we suggest (and request) that the Forest Service take a good look at the 1993 Cooperative Inventory both to see what rare species may be present, and what gaps in information have been previously identified and are in need of filling.

Sincerely,

A handwritten signature in black ink that reads "Jim Scheff". The signature is written in a cursive, slightly slanted style.

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