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Comments: Tim Reed, District Ranger John Hull, Silviculturalist Stearns Ranger District Daniel Boone National Forest 3320 Highway 27 North Whitley City, Kentucky 42655 RE: Jellico Vegetation Management Project - Draft Environmental Assessment May 24, 2024 Dear District Ranger Reed and Mr. Hull, The Kentucky Herbalism Alliance (KHA) is an organization that seeks to educate its members and the public on the ethical and responsible stewardship and clinical use of medicinal plants. KHA is first and foremost an organization that holds plants and their ecosystems in the highest regard. These comments should not be interpreted in any way to suggest or encourage illegal harvest in the National Forest. KHA supports the use of a permitting system required to harvest medicinal plants for personal use (with the exception of ginseng, which is prohibited) in the Daniel Boone National Forest (DBNF). The Kentucky Herbalism Alliance is opposed to the Proposed Action as well as Alternative One. In addition to concerns about severe harvest methods, landslide and soil erosion risks, neither proposal plans to cut the forests in a manner that will create favorable conditions for shade-dominant medicinal plants to thrive, much less target species that were directly mentioned in the Draft EA like white oak. In the last 2 years, several of our members have spent a significant amount of time in the Jellico project area observing medicinal plant species in order to assess population health and species composition. Numerous populations that would be irreparably damaged if the proposed logging were to be implemented. We will not put specific stand information in these public comments in order to protect the plants from illegal harvest, but in some cases the forest floor is continuously covered with culturally and medicinally important plants. We are happy to provide these locations to the Forest Service staff. While the purpose and need of the project focuses on young forest creation, we fundamentally disagree with the types of logging the agency has proposed to achieve these results. It is clear that this proposal was developed to maximize timber harvest volume while overlooking larger impacts to biodiversity and forest health in the project area. Additionally, the Biological Evaluation provided in the Draft EA does acknowledge the threats to ginseng and other plants that tend to occur in rich, mesic sites, explaining that "[Project actions generally would make the sites less suitable for most of the species by drying them out and increasing light]" (p. 92). However, it downplays the extent to which they are impacted, stating that ginseng, goldenseal, and yellow wood were only found in "[low numbers]" in the project area. However, there are very few areas in the DBNF in general where these plants are found in large numbers. In fact, their low numbers should justify additional caution to prevent impacts. The information below contains a brief review of two medicinal plant species that are particularly threatened by this project. Ginseng While we are unaware of research that has studied the impact of logging in a way that matches the severity proposed by the Jellico project, research on less intensive logging methods has demonstrated that "[timber harvest negatively impacts survival of American ginseng]"¹ These authors go on to explain that "[ginseng populations could benefit from silvicultural management techniques that minimize forest floor disturbance and mimic old-growth canopy structure]" (emphasis added) Both the Proposed Action and Alternative 1 include heavy harvests in mixed mesophytic cove forests where ginseng is present. The Forest Stewards Guild (with whom the Forest Service has a partnership) explains that "[extensive changes in ginseng habitat caused by historic wide-spread clearcut logging likely played a role in its decline]" (emphasis added). Instead of clearcuts or heavy regeneration harvests (like the ones proposed in the Jellico project), the Forest Stewards Guild recommends using silvicultural approaches that mimic natural disturbance patterns such as intermediate treatments (e.g. thinnings) and uneven-aged selection regeneration treatments (e.g. single tree selections). This management approach creates small canopy gaps that encourage the growth of American ginseng and other shade-intermediate species. Harvesting should limit disturbance to the forest understory and when available, more site sensitive harvesting equipment and approaches that reduce ground impacts are preferred.² (emphasis added) We have observed that small (and not so small) canopy gaps already exist in the project area, creating early seral habitat and raising the question whether this project is needed at all. Because the DBNF is so concerned about ginseng population health that it has prevented harvest permits for at least the last 8 years³, we recommend following the above guidance in order to ethically steward the remaining populations. It makes no

sense that the Forest Service would destroy ginseng habitat while also trying to rebuild populations by suspending its permit program. Precise data on how many plants are harvested each year from the wild is difficult to obtain, and is surely more than any official figure. However, using the best available data, we know that at least 37,702 lbs of fresh black cohosh root were sold from the wild from 2004-2010. 2,804,381 lbs of dried black cohosh root were wild harvested from 1999-2010, with an annual average of 233,698 dried lbs. While black cohosh remains relatively abundant in Kentucky, we list the numbers above to demonstrate the large quantity that is being wild harvested and to reinforce the need to steward existing populations in the face of such harvest pressure.

1 J.L. Chandler, J.B. McGraw. (2015). Variable effects of timber harvest on the survival, growth, and reproduction of American ginseng (*Panax quinquefolius* L.) [ScienceDirect. Retrieved May 23, 2024, from <https://www.sciencedirect.com/science/article/abs/pii/S03781127150005842> Forest Stewards Guild (n.d.) American Ginseng and Timber Harvests. Accessed 23 May 2024 from <https://foreststewardsguild.org/wp-content/uploads/2021/04/Ginseng-one-pager.pdf> Ginseng Harvesting Prohibited in Daniel Boone Forest (2022). Retrieved 23 May 2024 from <https://www.fs.usda.gov/detail/dbnf/news-events/?cid=FSEPRD10575964> Dentali, S. and M. Zimmerman. (2012). American Herbal Products Association Tonnage Surveys of Select North American Wild-Harvested Plants, 2006-2010. Retrieved from https://unitedplantsavers.org/wp-content/uploads/2016/05/Tonnage_06-10_Report_FINAL.pdf The Forest Service states that "Many NTFP species are understory herbs that are shade tolerant and associated with later successional stages (e.g., American ginseng, black and blue cohosh)." This means that these medicinal species are associated with mature and old forests that can provide the necessary shade. In contrast, regeneration harvests (clearcuts, shelterwood, deferment harvest) are designed to initiate new forest stands by removing mature forest canopies and can complement certain NTFP resources in naturally regenerated forests. The size of gaps in the canopy, their orientation, and the length of time over which the canopy is removed as well as retention of previous stand structure by retaining group reserves all can influence site conditions and NTFP growth. Clearcut systems release tremendous amounts of growing space, creating open site conditions that benefit a broad suite of shade-intolerant species. Removal of the entire mature canopy strata over a relatively short period of time can result in full-sun conditions (Smith et al. 1997). This light environment can benefit shade-intolerant berry producing shrub species, however these benefits often are ephemeral without continued management as canopy species reestablish and shade the site (Reynolds-Hogland et al. 2006). Similarly, these conditions can promote establishment and growth of nonnative invasive plant species and/or aggressive native species that have potential to outcompete target NTFPs. Clearcut openings can increase soil temperatures, change moisture regimes, and cause physiological stress and mortality to shade-tolerant NTFP species (Bazzaz 1979, Hicks and Chabot 1985, Meier et al. 1995). NatureServe lists black cohosh as S3, "vulnerable" and says "This species has been identified as a priority for conservation by many entities including the US Forest Service, and the US Fish and Wildlife Service." While wild harvest remains the greatest threat "habitat conversion and development are significant direct threats" Other significant threats include habitat fragmentation and displacement by exotic species (Homoya pers. comm., Penskar pers. comm., Frye pers. comm.). "We have seen the numerous invasive species that move in after large disturbance, including Japanese honeysuckle, amur honeysuckle, tree of heaven, princess tree, and autumn olive, all of which are found in the project area. Additionally, we are not aware of any monitoring currently underway by the DBNF to see how these culturally important plants respond after logging. The Forest Service must explain how their proposal will mitigate impacts to these culturally important plants, conduct monitoring to ensure there is no population loss, and modify its proposal to remove regeneration cuts."

5 USFS Southern Research Station (2018). Assessment of Nontimber Forest Products in the United States Under Changing Conditions. Retrieved from https://www.srs.fs.usda.gov/pubs/gtr/gtr_srs232.pdf

6 NatureServe Explorer Black Cohosh. Accessed 22 May 2024 at https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.154359/Actaea_racemosa As Forest Service Botanist David Taylor says, "Our job is to ensure the health, diversity, and productivity of our Forest for generations to come."

7 With medicinal plants only becoming more culturally and economically important, the Forest Service must consider these impacts and take a broader view of forest health.

Sincerely, Lauren Kallmeyer
Kentucky Herbalism Alliance