Data Submitted (UTC 11): 5/24/2024 4:00:00 AM
First name: Perrin
Last name: de Jong
Organization: Center For Biological Diversity
Title: Staff Attorney
Comments: Attached, please find the Center for Biological Diversity's comments on the Jellico Vegetation Management Project, with two attachments.
May 24, 2024Submitted Via Portal: https://cara.fs2c.usda.gov/Public//CommentInput?Project=63037Tim ReedStearns District RangerDaniel Boone National Forest3320 Hwy 27 NorthWhitley City, KY 42653Re: Jellico Vegetation Management Draft EA CommentsDear Mr. Reed,Below, please find the comments of the Center for Biological Diversity regarding the JellicoVegetation Management Draft Environmental Assessment ([ldquo]EA[rdquo]) for the Jellico VegetationManagement Project ([ldquo]Jellico project[rdquo]).The Draft EA Reveals that an EIS Must be PreparedIf any significant environmental impacts could possibly result from a proposed action, anEnvironmental Impact Statement ([ldquo]EIS[rdquo]) must be prepared, and an Environmental Assessment([ldquo]EA[rdquo]) is inadequate:NEPA requires federal agencies to prepare an environmental impact statement("EIS") for "every [hellip] major Federal action[] significantly affecting the quality ofthe human environment." 42 U.S.C. [sect] 4332(2)(C). An environmental assessment("EA") is made for the purpose of determining whether an EIS is required. See 40C.F.R. [sect] 1508.9. "If any 'significant' environmental impacts might result from theproposed agency action then an EIS must be prepared before agency action istaken."Grand Canyon Trust v. F.A.A., 290 F.3d 339, 340 (D.C. Cir. 2002) (citing Sierra Club v.Peterson, 717 F.2d 1409, 1415 (D.C. Cir. 1983)). See also, Idaho Sporting Cong. v. Thomas, 137F.3d 1146, 1149[ndash]50 (9th Cir. 1998) (stating that [ldquo]if substantial questions are raised as to whethera project . . . may cause significant degradation of some human environmental factor,[rdquo] an agencymust prepare an EIS (quoting Greenpeace Action v. Franklin, 14 F.3d 1324, 1332 (9th Cir.1992); LaFlamme v. FERC, 852 F.2d 389, 397 (9th Cir. 1988))).It is laughable that a proposed project with the following attributes could not possibly have asignificant impact on any environmental attribute:? 40 years of construction, operation, and maintenance of forest roads, skid roads, and skidtrails on landslide-prone slopes;? 40 years of logging, non-commercial tree cutting and other vegetative manipulations;? 40 years of herbicide applications potentially including any herbicide in existence;? Spanning 9,600 acres, the majority of federal land holdings across an entire mountainrange;? Spanning multiple Forest Plans for the Daniel Boone National Forest;? In close proximity to (between zero and approximately three miles upstream from) threeunits of occupied designated critical habitat for two federally-endangered aquatic species;? In close proximity to populations of a federally-threatened aquatic species; and? In an area used by 5 federally-listed or proposed bat species.Thus, for the above- and below-listed reasons, because the Jellico project is certain to result insignificant environmental impacts ? or, in the alternative, runs a substantial and credible risk ofresulting in significant environmental impacts ? the U.S. Forest Service ([ldquo]USFS[rdquo]) must completean EIS for this project.Scope of Affected Waterbodies a.k.a. [ldquo]Area of Project Influence[rdquo]The draft EA and its supporting materials suffer from systemic internal contradictions, resultingin abundant inaccurate, nonsensical, and patently self-contradictory statements of [ldquo]fact[rdquo] providedthroughout. This problem renders the draft EA (when combined with its supporting documents)so difficult to make sense of that it precludes meaningful public review. USFS must produce anEIS that clearly lays out the facts on the ground and the agency[rsquo]s analysis in a coherent manner,written in plain English. Nat'l Wildlife Fed'n v. Norton, 332 F. Supp. 2d 170, 183-84 (D.D.C.2004).One crucial example of the EA[rsquo]s incoherence is embodied in the agency[rsquo]s description of the[ldquo]area of project influence.[rdquo] This concept is used to analyze potential environmental impacts tovarious resources and species. However, every list of waterbodies within the [ldquo]area of projectinfluence[rdquo] given by USFS contradicts the other lists given by the agency, and none of these listsaccurately reflect the total scope of waterbodies subject to impacts from the Jellico project.To give the agency a head start on compiling an accurate list of waterbodies subject to the Jellicoproject[rsquo]s pollution, we hereby put the agency on notice that the following streams are subject todirect impacts from the project. Streams are listed together when one headwater stream flowsinto another receiving stream subject to pollution impacts. To illustrate our logic, in the firstexample given, Jackson Creek flows into Little Wolf Creek, which flows into Wolf Creek(designated critical habitat unit 12 for the Cumberland darter),

which flows into Clear Fork,which flows into the Cumberland River. All of these waterbodies are within the [ldquo]area of projectinfluence[rdquo] insofar as they are all subject to water pollution impacts from the Jellico project.? Jackson Creek/Little Wolf Creek/Wolf Creek (occupied designated critical habitat unit 12for the Cumberland darter)/Clear Fork/Cumberland River;? Indian Creek/Elk Creek (a.k.a. Elk Fork)/Clear Fork? Pigeon Roost Creek/Clear Fork? Bucks Branch/Jellico Creek? Rock Creek (occupied designated critical habitat unit 14 for the Cumberlanddarter)/Jellico Creek (occupied designated critical habitat unit 13 for the Cumberlanddarter)? Osborne Creek/Marsh Creek (occupied designated critical habitat unit 12 for theCumberland elktoe)? Ryan[rsquo]s Creek/Jellico Creek? Jellico Creek receiving direct pollution impacts from cut units into occupied designatedcritical habitat unit 13 for the Cumberland darterThe U.S. Environmental Protection Agency ([ldquo]EPA[rdquo]) has set a Target Distance Limit of 15stream miles to analyze how far downstream to analyze water pollution impacts from the sourceof pollution. 40 C.F.R. [sect] 300, App. A. The U.S. Fish and Wildlife Service ([ldquo]Service[rdquo]) hasdocumented an incident where sediment traveled 14 miles downstream, impacting designatedcritical habitat for the federally-endangered Guyandotte River crayfish. Exh. 1. Further, theService has assembled an agency guidance document which compiled studies demonstrating thatsedimentation and other water pollution travels up to 12 miles downstream to the degree that ittransforms entire assemblages of aquatic species. Exh. 2.Via Little Wolf Creek, Wolf Creek, and Clear Fork, the Cumberland River is approximately12.27 miles downstream from the closest cut unit in the Jellico project. Thus, the CumberlandRiver itself is a part of the [ldquo]area of project influence,[rdquo] and turbidity, sedimentation, and chemicalwater pollution impacts to this waterbody must be analyzed as a part of USFS[rsquo] NEPA review.No such analysis was provided in the draft EA.Occupied designated critical habitat unit 12 for the Cumberland darter, in Wolf Creek, isapproximately 1.5 miles downstream from the nearest cut unit via Little Wolf Creek. 77 Fed.Reg. 63,604 (Oct. 16, 2012). Thus, unit 12 is a part of the [ldquo]area of project influence,[rdquo] andturbidity, sedimentation, and chemical water pollution impacts to this species[rsquo] critical habitat ?and the population of Cumberland darters residing therein ? must be analyzed as a part of USFS[rsquo]NEPA review. No such analysis was provided in the draft EA.Occupied designated critical habitat unit 14 for the Cumberland darter, in Rock Creek, is as littleas zero miles from (adjacent to) cut units in the Jellico project. Id. Likewise, occupied designatedcritical habitat unit 13 for the Cumberland darter, in Jellico Creek, is as little as zero miles from(adjacent to) cut units in the Jellico project. Id. Thus, units 13 and 14 are a part of the [ldquo]area ofproject influence,[rdquo] and turbidity, sedimentation, and chemical water pollution impacts to thisspecies[rsquo] critical habitat ? and the population of Cumberland darters residing therein ? must beanalyzed as a part of USFS[rsquo] NEPA review. No such analysis was provided in the draft EA.Occupied designated critical habitat unit 12 for the Cumberland elktoe, in Marsh Creek, is justover three miles downstream from the nearest cut unit via Osborne Creek. 69 Fed. Reg. 53,136(Aug. 31, 2004). Thus, unit 12 is a part of the [ldquo]area of project influence,[rdquo] and turbidity,sedimentation, and chemical water pollution impacts to this species[rsquo] critical habitat ? and thepopulation of Cumberland elktoe residing therein ? must be analyzed as a part of USFS[rsquo] NEPAreview. No such analysis was provided in the draft EA.USFS Must Undergo Analysis of Impacts to Listed Species and Critical Habitat UnderNEPA and ESA SeparatelyUSFS attempts to defer its NEPA impacts analysis to listed and proposed species and designatedcritical habitat to the Section 7 ESA consultation and conference process. The BiologicalEvaluation ([ldquo]BE[rdquo]) claims that information on PETS species and effects determinations will bepresented in the Biological Assessment ([ldquo]BA[rdquo]), which will be available in the project file.However, today is the deadline for comments on the draft EA, and no such BA has beenprovided by USFS in the project file. Thus, USFS has not provided the commenting public withthe information required to understand the potential impacts of the Jellico project, and the draftEA cannot comply with NEPA in its current form.USFS must analyze impacts to all ESA-listed species and designated critical habitat within the[ldquo]area of project influence[rdquo] as part of its NEPA analysis process. This will need to be done in anEIS, as discussed above, but such analysis was also required of its EA. 40 C.F.R. [sect] 1501.5(c)(2).The agency[rsquo]s attempt to defer this analysis until ESA Section 7 consultation and conference isunavailing. The primary reason why Section 7 analysis may not serve as a substitute for NEPAanalysis of impacts to these species and their designated critical habitat is because the standardsof analysis under the ESA and NEPA are entirely different to the point of being in conflict withone another.Courts have held that [ldquo]a project need not jeopardize the continued existence of athreatened or endangered species to have a [lsquo]significant[rsquo] effect[rdquo] for the purposes ofNEPA.

Cascadia Wildlands v. U.S. Forest Serv., 937 F.Supp.2d 1271, 1282(D.Or.2013), appeal dismissed (Feb. 27, 2014); Klamath[ndash]Siskiyou Wildlands Ctr.v. U.S. Forest Serv., 373 F.Supp.2d 1069, 1080 (E.D.Cal.2004).13 In EPIC, theNinth Circuit recognized that species viability is the relevant standard forassessing a project under the Endangered Species Act, but the standard is adverseeffect under NEPA. Envtl. Prot. Info. Ctr. v. U.S. Forest Serv., 451 F.3d 1005,1012 (9th Cir.2006) ([ldquo]EPIC[rdquo]); see Forest Serv. Employees for Envtl. Ethics v.U.S. Forest Serv., 726 F.Supp.2d 1195, 1213 (D.Mont.2010).Or. Wild v. B.L.M., 2015 U.S. Dist. LEXIS 32584 at 28 (D. Or. 2015). As the court explained,the standard under NEPA for species-level impacts review in an EIS is whether the proposedaction would have a [ldquo]significant effect[rdquo] on a species. The standard under Section 7 of the ESA iswhether the proposed action would jeopardize the continued existence of a federally listedspecies. A [ldquo]significant effect[rdquo] on the Cumberland darter, Cumberland elktoe, blackside dace, orany of the federally listed bats in the area could include the degradation or complete eradicationof existing habitat ? including designated critical habitat ? in the project area and within the[ldquo]area of project influence.[rdquo] It could also include killing of individuals of these species. It couldeven include the killing of entire populations of these species. Any of these impacts wouldconstitute [ldquo]significant effects[rdquo] for the purposes of NEPA ? necessitating the preparation of anEIS examining all impacts to these species and their habitat ? although they may not threaten anyone species with the [ldquo]jeopardy[rdquo] of extinction per Section 7 of the ESA. Grand Canyon Trust v.F.A.A., 290 F.3d 339, 340 (D.C. Cir. 2002).[ldquo]Destruction or adverse modification of critical habitat[rdquo] is similarly defined under Section 7 ofthe ESA such that project-level impacts could not possibly meet the standard for geographicallybroadly distributed species like the listed species in question here. [ldquo]Destruction or adversemodification means a direct or indirect alteration that appreciably diminishes the value of criticalhabitat as a whole for the conservation of a listed species.[rdquo] 50 C.F.R. [sect]402.02 (emph. added).Because this project only threatens to destroy numerous segments of designated critical habitatfor two species that have designated critical habitat elsewhere (and destroy habitat for theblackside dace, which has no designated critical habitat in the project area), the Section 7analysis is destined to conclude that the project does not meet the standard for [ldquo]destruction oradverse modification[rdquo] of critical habitat. However, the total destruction of critical habitatsegments 12, 13, and 14 for the Cumberland darter, segment 12 for the Cumberland elktoe, andhabitat for the local population of blackside dace is very possible as a result of the direct,indirect, and cumulative turbidity, sedimentation, and chemical pollution impacts of the proposedaction. And that is why these impacts to these listed species and their habitat, which are certainlypotentially significant, must be analyzed as a part of the NEPA process for this project. SierraClub v. Peterson, 717 F.2d 1409, 1415 (D.C. Cir. 1983); 40 C.F.R. [sect] 1502.1.USFS Must Try Again to Complete a Lawful Analysis of Impacts to BatsFive federally-listed or proposed bat species are known or presumed to inhabit the project area.BE at 78.USFS has innumerable problems with its draft EA. Among them, the EA itself never makesmention of two species listed as endangered under the ESA and presumed to be present in theproject area. The Virginia big-eared bat and the gray bat are completely overlooked in the EA.What[rsquo]s more, the BE presumes that both of these species are present in the project area andsubject to forest management impacts. BE at 78; see also, Table 5. Thus, USFS has deprived thecommenting public of crucial information required to understand the impacts of the proposedaction and Alternative 1, and mandated to be included in its EA. 40 C.F.R. [sect] 1501.5(c)(2); seealso, Forest Guardians v. U.S. Forest Serv., 495 F.3d. 1162, 1172 (10th Cir. 2007)([ldquo]NEPA[hellip]requires a reasoned evaluation of the relevant factors.[rdquo]).a. Cumulative effects analysis and fragmentation impacts to NLEBsAnother systemic problem with the draft EA is that it includes no cumulative effects analysis forbats stemming from the Jellico project whatsoever. Instead, the BE provides a discussion ofcumulative effects for the Greenwood Vegetation Management Project. BE at 80. To the extentthat this passage might be considered to apply to the Jellico project, it strangely left out ananalysis of all of the other sources of habitat fragmentation and deforestation in and around theproject area. For example, no analysis was provided for private land logging, mining, drilling paddevelopment, residential development, road building, etc."Cumulative effect" is defined in the applicable regulations asthe impact on the environment which results from the incremental impact of theaction when added to other past, present, and reasonably foreseeable futureactions regardless of what agency (Federal or non-Federal) or person undertakessuch other actions. Cumulative impacts can result from individually minor butcollectively significant actions taking place over a period of time.Theodore Roosevelt Conservation P'ship v. Salazar, 616 F.3d 497, 512, 392 U.S. App. D.C. 316,331,

2010 U.S. App. LEXIS 15257, *30-31, 175 Oil & Gas Rep. 824, 40 ELR 20199 (D.C. Cir.2010)(citing 40 C.F.R. [sect] 1508.7).Bat species presumed to be in the project area, such as the northern long-eared bat ([ldquo]NLEB[rdquo]),rely on intact, unfragmented forest areas for their habitat. Intact, unfragmented forest habitats arevital for a wide range of species, including northern long-eared bats. 87 Fed. Reg. 73,488, 73,496(Nov. 30, 2022). The Forest Plan FEIS discusses the importance of interior forests andimportance of considering the effects of within-forest habitat fragmentation:Within-Forest Habitat FragmentationChanges in forest composition and/or age-class conditions that interrupt or isolateforest habitat is another form of fragmentation. The arrangement of tree speciesand age structure affects which plant and animal populations may be found in aforested area. Arrangement of forest habitat types across an area and the degree towhich they are connected influences habitat suitability. An area where foresthabitat types are small or not connected may limit suitability for some species.The implications of habitat fragmentation within the forest depend on the habitatrequirements of individual species. Many species thrive in a diverse mixture ofhabitats while others need a more uniform habitat over a large area.In addressing within-forest habitat fragmentation, management activities shouldstrive to:[bull] Provide interior forest habitat[bull] Provide habitat continuity/connectivity[bull] Reduce adverse edge effects created by management activities.Forest Plan FEIS 2-13.The Forest Plan FEIS defines interior forest habitat as: [ldquo]High canopy forest conditions suitable tomeet the requirements of area sensitive species that are adversely impacted by forest edge,including microclimate change (warmer, windier), increased predation, increased broodparasitism, and increased competition.[rdquo] Forest Plan FEIS 6-16.A recently published thesis from the University of Kentucky examines the effects of loggingsystems on northern long-eared and other bat species in eastern Kentucky. The thesis, [ldquo]Effects ofShelterwood and Patch Cut harvests on a Post White-Nose Syndrome Bat Community in theCumberland Plateau in Eastern Kentucky,[rdquo] was submitted and accepted in mid-2020. The two ofthree sites examined, the Laurel Ridge tract of Robinson Forest and the Beech tract managed byThe Forestland Group, are both approximately 30 to 35 miles northeast of the Daniel BooneNational Forest, and similarly located in the Rugged Eastern Hills (221Ha) subsection of theNorthern Cumberland Plateau Section of easternKentucky (Forest Plan FEIS 1-7). The other site,Kentucky Ridge State Forest, is south of Pine Mountain approximately 20 miles from the DanielBoone National Forest. The proximity of the research and land type similarities makes thisresearch directly applicable to the project area in the Daniel Boone National Forest.In his study, Arant examined changes in habitat usage by several species of bats following timberharvest in three sites in eastern Kentucky. Notably, in the shelterwood harvests in the study, 50%of the commercial timber volume was harvested (Arendt at 9), while shelterwood harvests in theSouth Red Bird project (Action 1.A) would remove 80% to 90% of the basal area in given stands(EA at 8). The 330[rsquo] buffers between shelterwood harvests would be subject to an unspecifiedamount of commercial thinning (Action 1.C). Patch cuts in Arendt (2020) were approximately 1hectare (2.5 acres).Arant (2020) found that northern long-eared bats avoided areas following harvest, stating [ldquo]Thelack of activity of these bats in harvests, however, suggests they do not actively forage withincuts (Arant at 71; See also Figure 18 at 46; Table 3 at 48; Figure 19 at 58). Arendt hypothesizesthat one reason myotis species may be avoiding these harvest areas areas is due to reduced preyavailability:[ldquo]The mean number of lepidopterans collected was lower at shelterwood and patch cut standsthan unharvested stands (Table 8). There was no difference between shelterwood and patch cutstands (Table 8).[rdquo] (Arendt at 51).Arant (2020) also reported that [ldquo]Most northern long-eared bats were captured in 2.6 m nets overclosed canopy ridge top roads[rdquo] (Arant at 56). Through radiotracking captured bats, he found that[ldquo]All (northern long-eared bat) roosts were within 100 m of a ridge top road, suggesting thesebats preferentially chose roosts in the vicinity of forested flight corridors.[rdquo] (Arant at 60).Northern long-eared bats were found, to a lesser extent, to use closed canopy streamcorridors.The extent that logging could be beneficial to northern long-eared bats, Arant surmisesthat it would be the result road compaction limiting tree growth, and forming travel corridorsonce the forest canopy becomes tall enough.The preference for northern long-eared bats in using closed-canopy flyway corridors, especiallyalong roads and in ridgetop positions, has significant bearing on potential impacts to the species.Roadside logging and thinning in the Jellico project area would impact both ridgetop roads andflyways, as well as riparian roads and flyways. It could also destroy a significant portion ofroosts and roosting habitat in the project area. See Appendix 5: Roadside thinning forillustrations of the spatial relationship between proposed (and approved) logging sites, roadsidethinning, and ridgetop flyways.Northern long-eared bats exhibit high fidelity toward roosting areas. According to the finallisting

rule for the northern long-eared bat:[ldquo]Northern long-eared bats change roost trees frequently, but use roost areas repeatedly and to alesser extent, reuse specific roosts[hellip] Once documented, northern-long eared bats are known tocontinue to use the same roosting areas.[rdquo] 87 Fed. Reg. 73,488.And while northern long-eared bats are highly mobile (outside of the lactation period), anddemonstrate some flexibility and plasticity in habitat use, the scale of the timber harvest matters.The Programmatic Biological Opinion for the northern long-eared bat states:During the summer, NLEB habitat loss is primarily due to forest conversion andforest management. Throughout the range of NLEB, forest conversion is expectedto increase due to commercial and urban development, energy production andtransmission, and natural changes. The 2010 Resources Planning Act Assessmentprojects forest losses of 16[ndash]34 million acres (or 4[ndash]8 percent of 2007 forest area)across the conterminous United States, and forest loss is expected to beconcentrated in the southern United States, with losses of 9[ndash]21 million acres(USFS 2012). Forest conversion causes loss of potential habitat, fragmentation ofremaining habitat, and if occupied at the time of the conversion, direct injury ormortality to individuals. Forest management activities, unlike forest conversion,typically result in temporary impacts to the habitat of NLEB, but like forestconversion, may also cause direct injury or mortality to individuals. The net effectof forest management may be positive, neutral, or negative, depending on thetype, scale, and timing of various practices.BIOP at 16, emphasis added. The Final Biological Opinion references Silvis et al. 2014, stating:[ldquo][i]n model simulations based on the tracking data, removal of more than 20 percent ofroosts initiated social network fragmentation, with greater loss causing morefragmentation.[rdquo] BIOP at 37.The final listing rule for the northern long-eared bat states:As stated above, northern long-eared bats have been found in forests that have been managed tovarying degrees, and as long as there is sufficient suitable roosting and foraging habitat withintheir home range and travel corridors between those areas, we would expect northern long-earedbat colonies to continue to occur in managed landscapes. However, in areas with WNS, northernlong-eared bats may be less resilient to stressors and maternity colonies are smaller. Given thelow inherent reproductive potential of northern long-eared bats (one pup per female per year),death of adult females or pups or both during tree felling could reduce the long-term viability ofsome of the WNS-impacted colonies if they are also in the relatively small percentage of foresthabitat directly affected by forest management. (Final Rule at 1909)The scale of disturbance prescribed in this project, including both large logging blocks and thelogging of dozens of miles of flyway corridors that could serve to connect remaining suitablehabit, could substantially and significantly impact northern long-eared bat populations. Giventhis fact, USFS must produce an EIS for this project.Because the Jellico project would denude or partially denude and fragment 9,600+ acres ofpresumed NLEB forest habitat (in addition to extensive road building impacts), an analysis ofother drivers of forest fragmentation, in conjunction with the Jellico project[rsquo]s impacts, isrequired in USFS[rsquo] NEPA cumulative effects analysis. 40 C.F.R. [sect] 1508.25(c); id. [sect] 1508.7.b. NLEBs and Pesticide ExposuresIn the Daniel Boone National Forest[rsquo]s ([ldquo]DBNF[rdquo]) Species Baseline Information document at 39-40, USFS explains that pesticide exposures can kill and weaken already-vulnerable NLEBs viabioaccumulation over time:Environmental contaminants, in particular insecticides, other pesticides, andinorganic contaminants, such as mercury and lead, may also have detrimentaleffects on NLEB.Contaminants may bio-accumulate (become concentrated) in the tissues of bats,potentially leading to a myriad of sub-lethal and lethal effects. NLEBs may alsobe indirectly affected through a reduction in available insect prey.There is currently no evidence that the natural or manmade factors discussedabove (hibernacula modification, forest conversion, forest management, windenergy, climate change, contaminants, fire) have separately or cumulativelycontributed to significant range-wide population effects on the NLEB prior to theonset of WNS. However, declines due to WNS have significantly reduced thenumber and size of NLEB populations in some areas of its range. This hasreduced these populations to the extent that they may be increasingly vulnerableto other stressors that they may have previously had the ability to withstand.These impacts could potentially be seen on two levels. First, individual NLEBsickened or struggling with infection by WNS may be less able to survive otherstressors. Second, NLEB populations impacted by WNS, with smaller numbersand reduced fitness among individuals, may be less able to recover making themmore prone to extirpation. The status and potential for these impacts will varyacross the range of the species (USDI-FWS 2016e).Suitable northern-long-eared roosting and foraging habitat is widespread andoccurs throughout the DBNF.In USFS[rsquo] cited SERA herbicide risk assessment, this warning is given about incidental spray ofwildlife:4.2.2.1. Direct SprayThe unintentional direct spray of wildlife during

broadcast applications of apesticide is a credible exposure scenario similar to the accidental exposurescenarios for the general public discussed in Section 3.2.3.2. In a scenarioinvolving exposure to direct spray, the amount of pesticide absorbed depends onthe application rate, the surface area of the organism, and the rate of absorption.SERA 2011. The SERA Risk Assessment also states at 4.2.2.2.:As discussed in the human health risk assessment (Section 3.2.3.3), the onlyapproach for estimating the potential significance of dermal contact withcontaminated vegetation is to assume a relationship between the application rateand dislodgeable foliar residue. Unlike the human health risk assessment, inwhich estimates of transfer rates are available, there are no transfer rates availablefor wildlife species. Wildlife species are more likely than humans to spend longperiods of time in contact with contaminated vegetation. It is reasonable toassume that for prolonged exposures, equilibrium may be reached betweenpesticide levels on the skin, rates of dermal absorption, and pesticide levels oncontaminated vegetation.Id. Also, the Lick Risk Assessment for herbicides found Hazard Quotients above 1 for mammalssuch as rats and deer due to various exposure scenarios, demonstrating the exposure risk towildlife.Because wildlife such as the prey species of NLEBs will be routinely exposed to herbicideresidues, the significant bioaccumulation risk to NLEBs must be examined as a part of the EISfor this project. Grand Canyon Trust v. F.A.A., 290 F.3d 339, 340 (D.C. Cir. 2002). Thus, theEA[rsquo]s claim that herbicide spraying[rsquo]s indirect impacts to NLEBs would be [ldquo]very minimal[rdquo] ispatently and transparently false, and contradicted by its own cited assessment.c. Other bat concernsChief among our other concerns is the fact that the EA contrasts the no action alternative withthe other two alternatives by stating that [ldquo]Bat species would continue to occupy the area atpresent baseline levels.[rdquo] The clearly anticipated harm to the struggling, listed local batpopulations as a result of this project is gravely concerning.The tricolored bat receives this nonsensical treatment in the BE:Tricolored bat is currently proposed for federal listing. Effects from the JellicoVegetation Management Project to tricolored bat would be similar to thoseexpected for Indiana bat and Northern long-eared bat and would not jeopardizethe existence of the species. The district will conference with the Service ontricolored bat until the time it is uplisted and receives its own consultation.USFS says this, although no effects analysis has taken place for the Indiana bat or NLEB to datefor this project. So how does the agency know that this means the project will not jeopardize thetricolored bat? This is frustratingly, transparently illogical. Clearly the tricolored has a lot to losevia the removal of thousands of acres of tree canopy, as the BE acknowledges by saying [ldquo]thisspecies is thought to roost primarily in high tree foliage and in hollow trees.[rdquo]Likewise, the BE acknowledges that the Virginia big-eared bat is a resident of the forestoverstory, and that [ldquo][m]aintaining stable microhabitat conditions and forested communitiesaround the maternity and hibernation caves is important to maintaining these sites.[rdquo] Thus,canopy removal isn[rsquo]t the only concern for this species. The loss of any forest cover over cavesystems risks ruining hibernacula. The species[rsquo] prey, including moths, butterflies, flies andbeetles, would put the bats at a risk of herbicide bioaccumulation similar to the NLEB[rsquo]s.The gray bat is also at risk due to herbicide bioaccumulation due to their diet of aquatic insectssuch as beetles, moths, mayflies, stoneflies and caddisflies that could be exposed similarly toNLEB[rsquo]s prey, as the BE explains. Also, as the BE states:Gray bats have been observed in small numbers in caves and in riparian forestareas at several locations on the forest[hellip]They may migrate between caves orsometimes can be considered as residents of a relatively small area. Gray batsfeed almost exclusively over water in riparian forest areas.Because the Jellico project involves logging, thinning, and otherwise modifying forest habitat innumerous riparian forest areas, this project threatens significant impacts to the gray bat[rsquo]s habitatand, consequently, to their food sources in the project area.Furthermore, the foreseeable impacts documented in the BE include potentially fatal flushingincidents during management activities, and killing or injuring via the felling of trees with bats inthem.Any of these impacts alone, and certainly these impacts in the aggregate, are sufficient toconclude that impacts from the Jellico project will be significant, requiring the production of anEIS.USFS[rsquo] Aquatic Species Analysis is Fatally FlawedFirst, the EA acknowledges that designated critical habitat for the Cumberland darter andCumberland elktoe [ndash] along with all other aquatic habitat in the Jellico project[rsquo]s receiving streams[ndash] will be impacted by sedimentation from the Jellico project. Other potential impacts to aquatichabitat described in the EA include [ldquo]impacts to water chemistry or aquatic species abundance.[rdquo]Any change in the abundance of aquatic species would certainly qualify as a significant effect,requiring the development of an EIS, as would a change in the water chemistry in aquatic habitat.a. Herbicides analysisIn spite of the EA[rsquo]s recognition of the risks to aquatic habitat via chemical

pollution andotherwise, the EA goes on to assert:There are no direct impacts expected from herbicide application, because the FSwould only use herbicides with risk assessments (see SERA 2011, Lick 2015) ator below application rates considered in those risk assessments.That assertion is in open conflict with the findings of the risk assessments cited in the samestatement, which found Hazard Quotients above a value of 1 for numerous types of aquatic andterrestrial and avian wildlife due to regular herbicide spraying, and in the case of accidentalspills, both of which were found to be potential risks. (Lick 2015) Among the guilds of animalsexposed to excessive risk according to the analysis of USFS[rsquo] chosen risk assessments are fish,amphibians, aquatic and terrestrial invertebrates, and algae. Id. Thus, herbicides were found to bethreatening the aquatic food chain from top to bottom. Id. And USFS must examine all potentialrisks in its NEPA analysis.With respect to accidents and emergencies, [ldquo]an agency must look at both the probabilities ofpotentially harmful events and the consequences if those events come to pass.[rdquo] New York v.Nuclear Regulatory Comm[rsquo]n, 681 F.3d 471, 482 (D.C. Cir. 2012). CEQ regulations requireconsideration of [ldquo]reasonably foreseeable[rdquo] impacts [ldquo]which have catastrophic consequences evenif their probability of occurrence is low.[rdquo] 40 C.F.R. [sect][sect] 1508.8; 1502.22. While [ldquo]remote andspeculative[rdquo] effects do not necessarily warrant close review, NEPA requires consideration of apotential impact where it is [ldquo]sufficiently likely to occur that a person of ordinary prudence wouldtake it into account in reaching a decision.[rdquo] Sierra Club v. FERC, 827 F.3d 36, 47 (D.C. Cir.2016). Numerous courts have held that agencies have violated NEPA by not considering oilspills and other relatively low-likelihood accidents that could have catastrophic impacts. SeeOcean Advocates v. U.S. Army Corps of Eng[rsquo]rs, 402 F.3d 846, 871 (9th Cir. 2005). (Corpsviolated NEPA by approving an oil dock expansion without considering increased risk of oilspills resulting from increased tanker traffic); Gov[rsquo]t Province of Manitoba v. Norton, 398 F.Supp.2d 41, 64 (D.D.C. 2005) (rejecting EA for drinking water pipeline for not considering lowriskmishap); Sierra Club v. Watkins, 808 F. Supp. 852, 867-68 (D.D.C. 1991) (rejecting EA forfailing to consider accidents that are [ldquo]possible[rdquo] even if [ldquo]extremely unlikely). See also, San LuisObispo Mothers for Peace v. Nuclear Regulatory Comm[rsquo]n, 449 F.3d 1016, 1024[ndash]35 (9th Cir.2006) (remanding to the agency because the agency[rsquo]s analysis failed to consider terrorist acts asa factor in its review of a license application to construct a nuclear spent-fuel storage facility),with Idaho Sporting Cong. v. Thomas, 137 F.3d 1146, 1149[ndash]50 (9th Cir. 1998) (stating that [ldquo]ifsubstantial questions are raised as to whether a project . . . may cause significant degradation ofsome human environmental factor,[rdquo] an agency must prepare an EIS (quoting Greenpeace Actionv. Franklin, 14 F.3d 1324, 1332 (9th Cir. 1992); LaFlamme v. FERC, 852 F.2d 389, 397 (9th Cir.1988))). Thus, large accidental herbicide spills must have their impacts analyzed here.USFS[rsquo] chosen method of spraying herbicides is clearly adding to the imprecision of herbicideapplication, which is in turn leading to toxic exposures for wildlife and people. The desire formanagement convenience driving these decisions, at the expense of the land and people. USFS[rsquo]denial about this problem was on display in the EA when it arbitrarily and capriciously claimedthat [ldquo][it] is unlikely that herbicide application would have any impacts [to terrestrial speciesother than bats and plants] due to the directed nature of application.[rdquo]Further, USFS has made a genuine analysis of herbicides impossible by failing to specify whichherbicides it will or might use as a part of the Jellico project. Each herbicide has unique effects,and the specific chemicals in use must have their impacts analyzed in an EIS. In order to carryout that analysis, USFS must define which chemicals will be used. Because it did not, the agencyensured that a lawful NEPA analysis would not take place here.We understand that DBNF[rsquo]s favorite herbicides are glyphosate, imazapyr, and triclopyr. Thus,we will detail potential impacts of the two of these herbicides we have information for below.USFS must incorporate this information into its NEPA analysis in an EIS due to the potential forsignificant impacts from herbicides. USFS must fill in the best and most updated availablescience for imazapyr as well.1. GlyphosateA 2015 EPA analysis found multiple environmental harms from glyphosate use. Use ofglyphosate in accordance with the label was found to:1) Result in concentrations that can potentially impact the survival and biomass of aquatic plants,upland plants, and riparian/wetland plants.12) Result in residues on foliage that can potentially impact the growth of herbivorous birds,reptiles and terrestrial amphibians.23) Potentially impact the growth and reproduction of terrestrial mammals following groundapplications of glyphosate.3This analysis also indicated that considerable no-spray buffers would be needed to keep offtargetplants from being harmed by glyphosate use, more than 1000 feet for certain aerialapplications and nearly 400 feet for certain ground applications.4 The states of California andArkansas both adopted mandatory

no-spray buffers of 500 feet for aerial applications.5Ecological incident data also reinforce the finding that the current labelled uses of glyphosate arehaving devastating effects to plant and animal life outside of the sprayed field.6 Approximately600 incidents have been reported and logged on the Ecological Incident Information System1 EPA. Preliminary Ecological Risk Assessment for Glyphosate and Its Salts. Sept. 8, 2015 page 2. Available here:https://www.regulations.gov/document?D=EPA-HQ-OPP-2009-0361-0077.2 Id.3 Id.4 Id. page 92.5 EPA. Drinking Water Assessment for the Registration Review of Glyphosate. June 15, 2017. Pg. 16.6 EPA. Preliminary Ecological Risk Assessment for Glyphosate and Its Salts. Sept. 8, 2015. Pgs 59-62. Availablehere: https://www.regulations.gov/document?D=EPA-HQ-OPP-2009-0361-0077.14(EIIS) and Avian Monitoring Information System (AIMS) databases. A separate Incident DataSystem (IDS) database has identified 269 separate aggregate incident reports. Ecologicalincidents are also significantly underreported for pesticides so this should be viewed as theabsolute bare minimum of ecological incidents that involve glyphosate.A final biological evaluation was released by the EPA on how use of glyphosate may affect allendangered and threatened species in the United States. The agency concluded that glyphosatewould [ldquo]Likely Adversely Affect[rdquo] 1676 out of 1795 listed species (93%) and adversely modify759 out of 792 designated critical habitat in the U.S.7 This includes nearly every single listedspecies and critical habitat in the United States and all that reside in or near the action area beingconsidered.8The EPA has found that glyphosate poses a risk to a federally listed amphibian, the CaliforniaRed-legged frog, making a Likely to Adversely Affect determination for the species.9 Someglyphosate formulations and co-formulants have been found to be [ldquo]highly toxic[rdquo] to certainspecies of fish.10Researchers have found negative associations between glyphosate use and monarch populationsize.11 Use of glyphosate has been tied to widespread declines of milkweed, which is essential tomonarch butterfly survival.12The World Health Organization[rsquo]s International Agency for Research on Cancer ([ldquo]IARC[rdquo])conducted an exhaustive review of the publicly available scientific literature in 2015 and7 EPA. Final National Level Listed Species Biological Evaluation for Glyphosate. November 2021. Available here:https://www.epa.gov/endangered-species/draft-national-level-listed-species-biological-evaluation-glyphosate.Executive Summary.8 Id. at Appendix 4-19 EPA. Risks of Glyphosate Use to Federally Threatened California Red-legged Frog (Rana aurora draytonii).Pesticide Effects Determination. October 17, 2008. Available here:https://www3.epa.gov/pesticides/endanger/litstatus/effects/redleg-frog/glyphosate/determination.pdf.10 Id. at 82, 84.11 Semmens, B. X., D. J. Semmens, W. E. Thogmartin, R. Wiederholt, L. Lopez-Hoffman, J. E. Diffendorfer, J. M.Pleasants, K. S. Oberhauser and O. R. Taylor (2016). "Quasi-extinction risk and population targets for the Eastern,migratory population of monarch butterflies (Danaus plexippus)." Sci Rep 6: 23265.12 Center for Biological Diversity, Petition to Protect the Monarch Butterfly (Danaus Plexippus Plexippus) Underthe Endangered Species Act, 7 (2014), available athttp://www.biologicaldiversity.org/species/invertebrates/pdfs/Monarch_ESA_Petition.pdf ([ldquo]A primary threat to themonarch is the drastic loss of milkweed caused by increased and later season use of the herbicide glyphosate inconjunction with widespread planting of genetically engineered, herbicide-resistant corn and soybeans in the CornBelt region of the United States and to planting of genetically-engineered cotton in California. In the Midwest,nearly ubiquitous adoption of, glyphosate-resistant [lsquo]Roundup Ready[rsquo] corn and soybeans has caused a precipitousdecline of common milkweed, and thus of monarchs, which lay their eggs only on milkweeds. The majority of theworld[rsquo]s monarchs originate in the Corn Belt region of the United States where milkweed loss has been severe, andthe threat that this habitat loss poses to the resiliency, redundancy, and representation of the monarch cannot beoverstated.[rdquo]).15concluded that glyphosate is [ldquo]probably carcinogenic to humans[rdquo] (Group 2A).13 IARC carefullyweighed evidence in three areas, and found that: 1) There was sufficient evidence to concludethat glyphosate causes cancer in animal studies; 2) There was limited evidence that exposure toglyphosate causes cancer (non-Hodgkin lymphoma) in humans; and 3) There was strongevidence that glyphosate can damage DNA and induce oxidative stress,14 two well characterizedpathways that can lead to cancer.15IARC[rsquo]s finding that glyphosate causes cancer in animals prompted California[rsquo]s Office ofEnvironmental Health Hazard Assessment to list glyphosate as a known carcinogen underCalifornia[rsquo]s Proposition 65 law.16 The agency has also finalized a No Significant Risk Level forglyphosate, which estimated the daily exposure level that will result in a 1/100,000 chance ofdeveloping cancer, of 1.1 mg/day.172. TriclopyrEPA has found that the range, pastureland, and rights-of-way uses of triclopyr can expose birds,reptiles and terrestrial amphibians to levels of the herbicide that cause reduced

survival ofoffspring.18 The same uses can expose mammals to 37 times the amount of triclopyr known toreduce litter size.19 All labelled uses of triclopyr were found to expose adult and larval bees tolevels estimated to reduce survival and larval emergence.20 Harm to bee larva was estimatedmore than 1000 feet from the application site.21 Terrestrial plants were also estimated to be13 WHO. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Volume 112: SomeOrganophosphate Insecticides and Herbicides. Glyphosate. 2017. Available at:http://monographs.iarc.fr/ENG/Monographs/vol112/mono112.pdf14 Id.15 Klaunig, J.E., et al., The role of oxidative stress in chemical carcinogenesis. Environ Health Perspect, 1998. 106Suppl 1: p. 289-95; and Lee, S.J., et al., Distinguishing between genotoxic and non-genotoxic hepatocarcinogens bygene expression profiling and bioinformatic pathway analysis. Sci Rep, 2013. 3: p. 2783.16 OEHHA. The California Environmental Protection Agency[rsquo]s Office of Environmental HealthHazard Assessment. Glyphosate Listed Effective July 7, 2017, as Known to the State ofCalifornia to Cause Cancer. Available at: https://oehha.ca.gov/proposition-65/crnr/glyphosatelisted-effective-july-7-2017-known-state-california-cause-cancer.17 OEHHA. The California Environmental Protection Agency[rsquo]s Office of Environmental Health Hazard Assessment.Amendment to Section 25705 No Significant Risk Level - Glyphosate April 10, 2018. Available at:https://oehha.ca.gov/proposition-65/crnr/amendment-section-25705-no-significant-risk-level-glyphosate-april-10-2018.18 EPA. Triclopyr (Acid, Choline salt, TEA salt, BEE): Draft Ecological Risk Assessment for Registration Review.Sept. 30, 2029. Pg. 6. Available here: https://www.regulations.gov/document?D=EPA-HQ-OPP-2014-0576-0026.19 Id. at 8.20 Id. at 9.21 Id. at 90.16exposed to levels of triclopyr that were known to cause harm more than 1000 feet away from thesite of application, even for ground applications.22Triclopyr butoxyethyl ester (BEE) is classified as [ldquo]highly toxic[rdquo] to aquatic organisms. Range,pastureland and meadow uses of BEE can expose fish and aquatic invertebrates to levels of thepesticide known to cause acute harm.23 The EPA has found that triclopyr poses a risk to afederally listed amphibian, the California Red-legged frog, making a Likely to Adversely Affectdetermination for the species.24The best available science reviewed here must be incorporated into any analyses of herbicide useon the Jellico project. These herbicide risk reviews are not inclusive of all herbicides because thescoping letter does not specify which chemicals are proposed for use. Many others not discussedhere have equally as disastrous risks to ecosystems, water, people, and wildlife. We do notendorse the use of any of those herbicides under the current proposal framework subject to thesecomments. For these reasons and more, we have identified herbicides as an issue for analysis.b. Alternatives to Herbicides--Integrated Pest ManagementAny subsequent NEPA document should articulate a range of reasonable alternatives. NEPAanalysis [ldquo]shall serve as the means of assessing the environmental impact of proposed agencyactions, rather than justifying decisions already made.[rdquo]25 NEPA requires agencies to [ldquo][s]tudy,develop, and describe appropriate alternatives to recommended courses of action in any proposalwhich involves unresolved conflicts concerning alternative uses of available resources.[rdquo]26 In fact,the alternatives section is considered the heart of an environmental analysis.27 At least onealternative should forego the use of herbicides.Prevention is the most cost-effective action that the Forest Service can perform to maintain thehealth and integrity of the forest. Reliance on herbicide means that the Forest Service has failedtheir mandate to follow Integrated Pest Management protocols.28The Natural Resources Conservation Service (NRCS) defines Integrated Pest Management as [ldquo]asite-specific combination of pest prevention, pest avoidance, pest monitoring, and pest22 Id. at 94-95.23 Id. at 9.24 EPA. Risks of Triclopyr Use to Federally Threatened California Red-legged Frog (Rana aurora draytonii)Pesticide Effects Determination. October 19, 2009. Available here:https://www3.epa.gov/pesticides/endanger/litstatus/effects/redleg-frog/triclopyr/analysis.pdf.25 40 C.F.R. [sect] 1502.02(g); see id. [sect] 1500.1(c) ([ldquo]NEPA[rsquo]s purpose is not to generate paperwork[mdash]even excellentpaperwork[mdash]but to foster excellent action[rdquo]).26 42 U.S.C. [sect] 4331(2)(E).27 40 C.F.R. [sect] 1502.14.28 U.S. Forest Service, [ldquo]FSM 2100 - Environmental Management Chaper 2150 - Pesticide Management andCoordination,[rdquo] 2014.suppression strategies.[rdquo]29 IPM was developed as a process for addressing pests of all kinds as aresponse to the overuse of chemical pesticides and their associated environmental harms.30Pesticide overuse threatens environmental health, disrupts food webs, contaminates drinkingwater, and undermines pesticide effectiveness.31IPM has become the standard framework for using pesticide on public lands across the Federalgovernment and the Federal, Insecticide, Fungicide, and Rodenticide Act (FIFRA) states that[ldquo][hellip]the [Environmental Protection Agency] Administrator in cooperation with the Secretary

ofAgriculture shall develop approaches to the control of pests based on integrated pestmanagement[hellip][rdquo].32 IPM practice is codified into the laws and regulations of agencies that managepublic lands including: the Department of Interior (DOI)33, and its Bureau of Land Management(BLM)34 as well as the United States Department of Agriculture[rsquo]s United States Forest Service(USFS)35 and the National Parks Service (NPS)36.The most important use of IPM on public land is for the management of invasive species asdirected by Executive Orders 1311237 and 13751,38 which instruct Federal Agencies to preventthe introduction and spread of invasive species. There are approximately 50,000 alien species in29 NRCS, [ldquo]Integrated Pest Management Code 595[rdquo] (Natural Resource Conservation Service, 2010),https://efotg.sc.egov.usda.gov/references/public/NY/nyps595.pdf.30 Gerrit Cuperus, Richard Berberet, and Phillip Kenkel, [ldquo]The Future of Integrated Pest Management,[rdquo] in E. B.Radcliffe,W. D. Hutchison & R. E. Cancelado [Eds.], Radcliffe[rsquo]s IPM World Textbook (St. Paul, MN: University ofMinnesota, n.d.), https://ipmworld.umn.edu.31 John Peterson Myers et al., [ldquo]Concerns over Use of Glyphosate-Based Herbicides and Risks Associated withExposures: A Consensus Statement,[rdquo] Environmental Health 15 (February 17, 2016), https://doi.org/10.1186/s12940-016-0117-0; Maarten Bijleveld van Lexmond et al., [ldquo]Worldwide Integrated Assessment on Systemic Pesticides,[rdquo]Environmental Science and Pollution Research 22, no. 1 (January 1, 2015): 1[ndash]4, https://doi.org/10.1007/s11356-014-3220-1; Gregor J. Devine and Michael J. Furlong, [ldquo]Insecticide Use: Contexts and Ecological Consequences,[rdquo]Agriculture and Human Values 24, no. 3 (September 1, 2007): 281[ndash]306, https://doi.org/10.1007/s10460-007-9067-z.32 [ldquo]Federal Insecticide, Fungicide, and Rodenticide Act,[rdquo] 7 U.S. Code [sect] 136w[ndash]3 (c) (2012).33 U.S. Department of the Interior, [ldquo]Department of the Interior Departmental Manual,[rdquo] Chapter 1: Integrated PestManagement Policy, Section 1.5, Part 517, Series 31: Environmental Quality Programs (U.S. Department of theInterior, May 31, 2007).34 U.S. Bureau of Land Management, [ldquo]BLM Vegetation Treatments Using Herbicide Final Programmatic EISRecord of Decision[rdquo] (U.S. Bureau of Land Management, 2007), 4[ndash]6, https://eplanning.blm.gov/epl-frontoffice/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=70300&dctmId=0b0003e880de5eb8.35 U.S. Forest Service, [ldquo]Forest Service Manual 2100-Environmental Management,[rdquo] Chapter 2150 (U.S. ForestService, March 19, 2013), page 6. Departmental Regulation 9500-4.36 U.S. National Park Service, [ldquo]Management Policies 2006[rdquo] (Washington, D.C.: U.S. National Park Service, 2006),48, https://www.nps.gov/policy/MP_2006.pdf.37 William Clinton J, [ldquo]Executive Order 13112 Invasive Species[rdquo] (Federal Register, February 3, 1999),https://www.govinfo.gov/content/pkg/FR-1999-02-08/pdf/99-3184.pdf.38 Barack Obama, [ldquo]Executive Order 13751 Safeguarding The Nation From the Impacts of Invasive Species[rdquo](Federal Register, December 8, 2016).the United States that impact the survival of 42% of all threatened and endangered species.39Alien species degrade ecosystems by suppressing natural biodiversity, altering food webs,changing nutrient cycling, introducing novel diseases, and can cause significant economicdamage.Alien species cause up to $120 billion a year in environmental damages40 and the U.S.government spends billions of dollars a year to mitigate and control alien species.41 IPM isessential to stopping the spread and introduction of alien species on public land, and per the basictenants of IPM, efforts must focus on the root causes of species spread. We believe thatpesticides should only be used as a last resort, and the Forest Service must not rely on reflexiveor reactive pesticide use. Already, there are countless examples of federal land managementagencies claiming to adhere to the tenets of IPM but in reality, deploying dangerous pesticides asa first line of attack. In the absence of clear direction for herbicide use, the Forest Serviceunwittingly lays the groundwork to be another example of this tragic phenomenon.IPM is a process that requires planning that is land-use- and pest-specific that uses the minimumlevel of pest suppression necessary.42 IPM relies on prevention, avoidance, monitoring, andsuppression (PAMS) techniques in order to decrease pest pressure from a combination ofbiological, cultural, and chemical controls.43 Successful management requires the preparationand implementation of strategic, long-term plans with defined threshold values for pest controlactions that rely on prevention, education, and restoration that enhance the overall health of anecosystem.44 Early Detection and Rapid Response (EDRR) is essential to identifying,monitoring, and removing new alien species from an environment.45 In IPM, chemical controlmay only be the last line of defense after preventative and avoidance practices have beenimplemented, and in IPM, even when pesticides are used, the least toxic options are deployed.We oppose widespread

permissions for herbicide use on public land. We challenge the ForestService to develop meaningful use-criteria for herbicides in order to fulfill its mandate to useintegrated pest management principles and protocols to reduce the likelihood of default relianceon herbicides. The analysis should present a strategic, long-term plan with defined thresholds39 David Pimentel, Rodolfo Zuniga, and Doug Morrison, [ldquo]Update on the Environmental and Economic CostsAssociated with Alien-Invasive Species in the United States,[rdquo] Ecological Economics, Integrating Ecology andEconomics in Control Bioinvasions, 52, no. 3 (February 15, 2005): 273[ndash]88,https://doi.org/10.1016/j.ecolecon.2004.10.002.40 Pimentel, Zuniga, and Morrison.41 National Invasive Species Council, [ldquo]National Invasive Species Council Crosscut Budget[rdquo] (Washington, D.C.:National Invasive Species Council, January 25, 2018),https://www.doi.gov/sites/doi.gov/files/uploads/crosscut_25january2018.pdf.42 NRCS, [ldquo]Integrated Pest Management Code 595.[rdquo]43 NRCS.44 Joseph M. DiTomaso, [ldquo]Invasive Weeds in Rangelands: Species, Impacts, and Management,[rdquo] Weed Science 48,no. 2 (April 2000): 255[ndash]65, https://doi.org/10.1614/0043-1745(2000)048[0255:IWIRSI]2.0.CO;2.45 Lindy Garner, [ldquo]Early Detection and Rapid Response to New Invasive Grasses in North Central Wyoming[rdquo] (U.S.Fish and Wildlife Service, April 2019),https://www.doi.gov/sites/doi.gov/files/uploads/wyoming_invasive_grasses_report.pdf.19and PAMS techniques that would address noxious weeds now and in the future; these must bedeveloped. The DBNF should remain vigilant for the spread of noxious weeds and deal withthem as necessary with the least amount of herbicide.c. Cumberland darterThe USFS[rsquo] provided Species Baseline Information document for the DBNF explains that thefederally endangered Cumberland darter has a very narrow range and has recently sufferedprecipitous population declines. The species is obviously on thin ice. The Baseline Informationdocument also specifies that the Cumberland darter requires the following habitat attributes:1. Shallow pools and gently flowing runs of geomorphically stable, second to fourthorder streams with connectivity between spawning, foraging and resting sites topromote gene flow throughout the species[rsquo] range.2. Stable bottom substrates composed of relatively silt-free sand and sand coveredbedrock, boulders, large cobble, woody debris, or other cover.3. An instream flow regime (magnitude, frequency, duration, and seasonality ofdischarge over time) sufficient to provide permanent surface flows as measuredduring years with average rainfall, and to maintain benthic habitats utilized by thespecies.4. Adequate water quality characterized by moderate stream temperatures, acceptabledissolved oxygen concentrations, moderate pH, and low levels of pollutants.Adequate water quality is defined for the purpose of this rule as the quality necessaryfor normal behavior, growth, and viability of all life stages of the Cumberland darter.5. Prey base of aquatic macroinvertebrates, including midge larvae, mayfly nymphs,caddisfly larvae and microcrustaceans.Clearly, sedimentation of its benthic habitat would ruin its habitat and kill off its food source,making existing habitat in the project area, including in its designated critical habitat, unsuitablefor habitation. USFS has acknowledged that the Jellico project would result in the sedimentationof local streams. Extirpation of this listed species from its critical habitat is a significant impactthat requires documentation in an EIS. Likewise, the destruction of the connectivity of its habitatvia sedimentation, turbidity, and the destruction of water quality via chemical pollution,temperature spikes due to the removal of the forest canopy, or otherwise would risk extirpationof the species. Any herbicide contamination resulting in the death of benthic invertebrates wouldalso destroy the habitat for this fish.d. Cumberland elktoeLikewise, the federally endangered Cumberland elktoe mussel[rsquo]s habitat requirements aredelineated in the Baseline Information document:1. Permanent, flowing stream reaches with a flow regime (i.e, the magnitude, frequency,duration, and seasonality of discharge over time) necessary for normal behavior,growth, and survival of all life stages of the five mussels and their host fish;202. Geomorphically stable stream and river channels and banks (structurally stablestream cross section);3. Stable substrates, consisting of mud, sand, gravel, and/or cobble/ boulder, with lowamounts of fine sediments or attached filamentous algae;4. Water quality (including temperature, turbidity, oxygen content, and othercharacteristics) necessary for the normal behavior, growth, and survival of all lifestages of the five mussels and their host fish; and5. Fish hosts with adequate living, foraging, and spawning areas for them.Thus, any sedimentation and turbidity impacts to the elktoe[rsquo]s habitat resulting from the Jellicoproject, as well as any water temperature fluctuations due to the removal of forest canopy, couldkill all individuals of this species in the project area. Likewise, any water quality harms to itshost fish would likewise cause significant harm to the local populations of this species. Anychemical pollution from herbicides or other chemicals resulting from the project would also be apotential cause of extirpation for this

species. All of these significant impacts must be assessed inan EIS.e. blackside daceAs reported in USFS[rsquo] Species Baseline Information document, the federally-threatened blacksidedace has a very narrow range, is known to inhabit the project area, the [ldquo]area of projectinfluence,[rdquo] the Stearns District, and McCreary County. This species inhabits relatively silt-freestreams with cool water. Any water temperature fluctuations resulting from the removal of theforest canopy could destroy the local habitat for this species and extirpate the species from itscurrent habitat. Also, any siltation of its habitat from project sedimentation impacts would pose arisk of extirpation for the species as well. All of these significant impacts must be analyzed in anEIS.Terrestrial Species Excluding Bats and PlantsThis section acknowledges the likelihood that the Jellico project would result in the direct killingof DBNF sensitive species such as green salamanders, clifty covert, Appalachian bellytooth,monarch butterfly, and wrinkled button via crushing by vehicles and falling trees. However, theEA does not reach the conclusion that regularly killing terrestrial wildlife by crushing is asignificant impact. It must reach this conclusion, and USFS must produce an EIS documentingthose significant impacts to local wildlife populations and habitat.The EA[rsquo]s assertion that [ldquo]it is unlikely that herbicide application would have any impacts due tothe directed nature of application[rdquo] is contradicted by the analysis in the risk assessments reliedupon by USFS, which indicate that spraying is the method of application, and that numerousguilds of wildlife species will be exposed to incidental herbicide exposure for a wide variety ofreasons. USFS[rsquo] suggestion that [ldquo]directed application[rdquo] via spraying will avoid collateral exposureto non-target wildlife species is pure fantasy, completely removed from the operational realityreflected in USFS[rsquo] favored risk assessments. Thus, this claim is arbitrary and capricious in theextreme. The EIS must fully analyze herbicide impacts to these species.21Sincerely,Perrin de JongSoutheast Staff AttorneyCenter for Biological DiversityP.O. Box 6414Asheville, NC 28816(828)252-4646perrin@biologicaldiversity.orgATTACHMENTSExhibit 1: U.S. Fish and Wildlife Service. Email correspondence with Barbara Douglas.August 18, 2017.Exhibit 2: U.S. Fish and Wildlife Service. Table of authorities for Service position ondownstream distance of coal mining impacts on downstream aquatic species. Dateunkn. (circa 2008).REFERENCESLick, M. 2015. Risk assessment [ndash] herbicide use. Appendix E. Greenwood VegetationManagement Project Environment Assessment. Daniel Boone National Forest, Stearns RangerDistrict. Whitly City, KY. Accessed online at:https://www.fs.usda.gov/project/dbnf/?project=44085[SERA] Syracuse Environmental Research Associates, Inc. 2011 and updates. Human Healthand Ecological Risk Assessments. Prepared for and submitted to USDA Jellico VegetationManagement Project 112 Forest Service, Southern Region, Atlanta, GA. Available at:https://www.fs.usda.gov/foresthealth/protecting-forest/integrated-pest-management/pesticidemanagement/pesticide-risk-assessments.shtml.