



May 27, 2021

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Via Email: [Comments-eastern-monongahela-gauley@usda.gov](mailto:Comments-eastern-monongahela-gauley@usda.gov)

**RE: Cranberry Spring Creek Project**

Dear Ms. Dezelin:

On behalf of the Center for Biological Diversity and Friends of Blackwater, we offer the following scoping comments on the proposed Cranberry Spring Creek project.

The **Center for Biological Diversity** (“Center”) is a nonprofit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental and administrative law. The Center has over 1.6 million members and online activists dedicated to the protection and restoration of endangered species and wild places. The Center has worked for over twenty-five years to protect imperiled plants and wildlife, open space, air and water quality, and overall quality of life. The Center has a unique interest in the Cranberry Spring Creek project and other projects on the Monongahela National Forest as it petitioned the U.S. Fish & Wildlife Service in 2010 to list the candy darter under the Endangered Species Act. The Service later listed the species as endangered in 2018 and last month designated critical habitat for the species. Unit 5e of the species’ critical habitat lies within the project area.

**Friends of Blackwater** (“FOB”) is a non-profit conservation organization working to protect biodiversity in the Mid-Atlantic Appalachian Highlands. FOB has members across West Virginia and in the surrounding states and works to protect the public lands used by our members. Friends of Blackwater has a longstanding interest in the conservation of rare, threatened, and endangered species in the Monongahela National Forest, and has a track record of active engagement in Forest planning processes.

We support several aspects of the proposed project including improvements to the Mill Point Historical site, trail improvements, and the creation of vernal pools to support biodiversity. We are concerned, however, about other aspects of the proposed project, including the proposed thinning and clearcutting of stands near federally endangered candy darter critical habitat, possible indirect impacts to the Cranberry Wilderness Area, the potential logging of old growth trees, activities within Inventoried Roadless Areas and the unnecessary cutting of hardwoods that

provide valuable habitat for the West Virginia Northern Flying Squirrel (WVNFS). We hope the Forest Service will carefully consider our comments, identify a range of reasonable alternatives, and select a preferred alternative that minimizes the risk of sedimentation in candy darter habitat, protects old growth trees and wilderness, avoids roadless areas, and sustains the benefits provided to the WVNFS by hardwoods.

## **I. The Cranberry Spring Creek Project Must Not Negatively Impact the Endangered Candy Darter and its Critical Habitat.**

### **A. Species Overview**

The candy darter is a small fish, with vibrant teal, red and orange colors, measuring 2 to 3 inches in length.<sup>1</sup> The species prefers shallow, fast flowing stream reaches with rocky bottoms and is only found in the Gauley, Greenbrier, and New River watersheds of Virginia and West Virginia.<sup>2</sup>

With a lifespan of about three years, candy darters begin to breed around two years of age.<sup>3</sup> They spawn in the mid-to late spring with females selecting areas of finer pebble and gravel among riffles to deposit their eggs.<sup>4</sup> Female candy darters produce relatively low number of eggs as compared to other fish.<sup>5</sup> After males fertilize the eggs, incubation can last five to twenty-five days depending on water temperature.<sup>6</sup>

Candy darters primarily feed on small insects, including mayflies and caddisflies, and help other species in their life processes by helping transport mussel larvae.<sup>7</sup>

Candy darters are habitat specialists, most often associated with faster flowing stream segments with coarse bottom substrate and low levels of siltation.<sup>8</sup> Suitable habitat is characterized by low levels of siltation and stream bottom embeddedness (the degree to which gravel, cobble, and boulders are surrounded by, or covered with, fine sediment particles).<sup>9</sup> In these conditions, candy darters can occur throughout the stream in relatively high numbers.<sup>10</sup> Conversely, Chipps et al. (1993) found that excessive siltation characterized areas where the species had declined or was absent<sup>11</sup> and Dunn and Angermeier (2016) found that in general, individuals selected sites with

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<sup>1</sup> U.S. Fish and Wildlife Service. 2017. Candy Darter (*Etheostoma osburni*), *available at* [https://www.fws.gov/northeast/candydarter/PDF/Candy\\_Darter\\_FS.pdf](https://www.fws.gov/northeast/candydarter/PDF/Candy_Darter_FS.pdf).

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*

<sup>4</sup> *Id.*

<sup>5</sup> U.S. Fish and Wildlife Service, Species Status Assessment Report for the Candy Darter (*Etheostoma osburni*) (Sep. 2017) at 1.

<sup>6</sup> FWS (2017), *supra* note 1.

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*; Candy Darter SSA, at 21.

<sup>9</sup> FWS (2017), *supra* note 1; Candy Darter SSA, at 22.

<sup>10</sup> FWS (2017), *supra* note 1; Candy Darter SSA, at 21.

<sup>11</sup> Candy Darter SSA, at 23 (citing Chipps, S.R. and W.B. Perry. 1993. Status and distribution of *Phenacobius teretulus*, *Etheostoma osburni*, and *Rhinichthys bowseri* in the Monongahela National Forest, West Virginia. *Va J Sci.* 44(1):47-58).

less than 26-percent silt cover and substrate embeddedness.<sup>12</sup> They also noted that adult candy darters almost completely avoided areas where silt cover and embeddedness were greater than 25 percent.<sup>13</sup> They found embeddedness was consistently the most important parameter determining individual candy darter microhabitat selection (regardless of life stage) and overall population robustness.<sup>14</sup>

The candy darter is considered a species of greatest conservation concern by the West Virginia Division of Natural Resources, and a Regional Forester Sensitive Species for the Monongahela National Forest. Nearly half of the thirty-five candy darter's historical populations have now gone extinct.<sup>15</sup> Threats to the species include, among others, excessive sedimentation, habitat fragmentation, increased water temperatures,<sup>16</sup> and hybridization with the variegate darter (*Etheostoma variatum*).<sup>17</sup>

In the most recent status assessment of the species in 2017, FWS assessed the candy darter's resiliency, redundancy, and representation across its range ("the three Rs").<sup>18</sup> Resiliency means "having sufficiently large populations for the species to withstand stochastic events (arising from random factors)."<sup>19</sup> Redundancy means "having a sufficient number of populations for the species to withstand catastrophic events (such as a rare destructive natural event or episode involving many populations)."<sup>20</sup> Representation means "having the breadth of genetic makeup of the species to adapt to changing environmental conditions."<sup>21</sup> The remaining 18 populations are considered to have moderate to low resiliency, redundancy, and representation.<sup>22</sup> In modeling several future condition scenarios, FWS concluded that given the ongoing hybridization with the variegate darter, several metapopulations are expected to continue to decline.<sup>23</sup>

## B. The Impacts of Sedimentation

A significant threat to candy darters is excessive stream sedimentation or siltation that results from soil erosion.<sup>24</sup> Erosion can occur from forestry practices as well as road or pipeline construction.<sup>25</sup> Excessive sediments can cover the stream bottom and fill the spaces between

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<sup>12</sup> FWS (2017), *supra* note 1; Candy Darter SSA, at 23 (citing Dunn, C.G. and Angermeier P.L. 2016. Development of habitat suitability indices for the candy darter, with cross-scale validation across representative populations. *Trans Am Fish Soc.*145(6):1266-81.).

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

<sup>15</sup> FWS (2017), *supra* note 1; Candy Darter SSA, at 4.

<sup>16</sup> Extensive forest clearing in the early 20<sup>th</sup> century likely led to widespread increases in water temperatures, which may have been a factor in the early decline of the species. Deforested areas (such as those resulting from timber harvests) likely continue to contribute to elevated water temperatures in some streams and rivers in the upper Kanawha. Candy Darter SSA, at 40.

<sup>17</sup> FWS (2017), *supra* note 1; Candy Darter SSA.

<sup>18</sup> Candy Darter SSA, at 3.

<sup>19</sup> *Id.*

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> *Id.* at 4.

<sup>23</sup> *Id.* at 3-6.

<sup>24</sup> *Id.* at 38.

<sup>25</sup> *Id.*

sand, gravel, and cobbles, and in more extreme cases cause stream bottoms to become embedded.<sup>26</sup> In these cases, cobbles, rocks, and boulders are surrounded by, or even buried in, sediment.<sup>27</sup>

The impacts of sedimentation on candy darters can be quite significant and are well documented. Several studies have found that sedimentation can limit sheltering or breeding habitat and/or cause shifts in the benthic community structure that alters the prey base.<sup>28</sup>

As FWS explained in their species status assessment (SSA) for the candy darter in 2017, several studies have pointed to the strong association candy darters have with clear streams with rocky bottoms.<sup>29</sup> The species relies on cobbles, rocks, and boulders on the stream bottom as shelter and rely on unembedded pebble and gravel bottom substrate for egg deposition.<sup>30</sup> Robust populations of candy darters are correlated with low levels of sedimentation and stream bottom embeddedness.<sup>31</sup>

Furthermore, despite the increased implementation of forestry and construction “best management practices,” sedimentation remains a problem in many streams within the range of the candy darter according to state water quality reports.<sup>32</sup> Only 35.3 percent of total stream miles in the Greenbrier River watershed were rated as “good,” while only 22.2 percent received a “good” rating in the Gauley and Lower New watersheds.<sup>33</sup> An overwhelming majority of streams

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<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

<sup>28</sup> *Id.* (citing Berkman, H.E. and C.F. Rabeni, 1987. Effect of siltation on stream fish communities. *Env. Biol. Of Fishes* Vol. 18, No. 4; Chambers, D.B. and T. Messigner. 2001. Benthic invertebrate communities and their responses to selected environmental factors in the Kanawha River basin, West Virginia, Virginia, and North Carolina. Charleston, WV: U.S. Geological Survey. Water-Resources Investigations Report 01-4021; Sutherland, A.B., J.L. Meyer, and E.P. Gardiner. 2002. Effects of land cover on sediment regime and fish assemblage structure in four southern Appalachian streams. *Freshwater Biology* (2002) 47; McGinley, E.J., R.L. Raesly, and W.L. Seddon. 2013. The effects of embeddedness on the seasonal feeding of mottled sculpin. *The American Midland Naturalist*, Vol. 170. No. 2).

<sup>29</sup> *Id.* (citing Addair, J. 1944, *The fishes of the Kanawha River System in West Virginia and some factors which influence their distribution*. Doctoral dissertation. Columbus, Ohio: Ohio State University; Kuehne and Barbour, R.A. and R.W. Barbour. 2015. *The American Darters*. The University Press of Kentucky, Lexington; Jenkins, R.E. and N.M. Burkhead 1993. *Freshwater fishes of Virginia*: Bethesda, Maryland: American Fisheries Society. 823-30; Chipps et al. 1994. Patterns of microhabitat use among four species of darters in three Appalachian Streams. *Am Midl Nat.* 131(1): 175-80; Jenkins, R.E. and B.L. Kopia. 1995. Population status of the candy darter, *Etheostoma osburni*, in Virginia, 1994-95, with historical review. Department of Biology, Roanoke College, Salem, Virginia).

<sup>30</sup> *Id.* (citing Kuehne and Barbour, R.A. and R.W. Barbour. 2015. *The American Darters*. The University Press of Kentucky, Lexington; Jenkins, R.E. and B.L. Kopia. 1995. Population status of the candy darter, *Etheostoma osburni*, in Virginia, 1994-95, with historical review. Department of Biology, Roanoke College, Salem, Virginia; Leftwich, K.N., A. Dolloff, and M.K. Underwood. 1996. The candy darter (*Etheostoma osburni*) in Stony Creek, George Washington-Jefferson National Forest, Virginia-Trout predation, distribution, and habitat associations. Blacksburg, VA: USDA Forest Service Center for Aquatic Technology Transfer. Report.).

<sup>31</sup> *Id.* (citing Chipps, S.R. and W.B. Perry. 1993. Status and distribution of *Phenacobius teretulus*, *Etheostoma osburni*, and *Rhinichthys bowseri* in the Monongahela National Forest, West Virginia. *Va J Sci.* 44(1):47-58; Dunn, C.G. and Angermeier P.L. 2016. Development of habitat suitability indices for the candy darter, with cross-scale validation across representative populations. *Trans Am Fish Soc.* 145(6):1266-81).

<sup>32</sup> *Id.* at 39.

<sup>33</sup> *Id.*

in these watersheds have baseline conditions of either “poor” or “fair.”<sup>34</sup> Not surprisingly, the Forest Service has identified excess sedimentation as a continuing problem in portions of the upper Greenbrier River system and the Forest Service has been implementing a variety of stream restoration projects over the past decade to specifically reduce sedimentation in the Greenbrier watershed.<sup>35</sup> It also appears several streams in the project area are listed as impaired for high aluminum and iron content and low pH.<sup>36</sup>

An emerging threat to the candy darter is hybridization with the variegate darter, which may be exacerbated by degraded habitat conditions (including from sedimentation).<sup>37</sup> The variegate darter is native to the Kanawha River basin below the Kanawha Falls in Fayette County, West Virginia.<sup>38</sup> These falls serve as a natural barrier to fish dispersal from the lower Kanawha River basin upstream into the range of the candy darter in the upper Kanawha River basin.<sup>39</sup> The variegate darter was likely introduced into the upper Kanawha River basin through “bait bucket transfer” and the species has expanded within the range of the candy darter.<sup>40</sup> Where the two species overlap, they will hybridize, ultimately resulting in the complete replacement by variegate darters or hybrids.<sup>41</sup>

The Upper Gauley meta-population is suspected to be genetically pure, although a few individual candy darters collected in the Upper Gauley had variegate darter alleles.<sup>42</sup> Candy darters are sensitive to sedimentation, which can change the quality of the stream bed to the point where it is no longer suitable for shelter or egg laying.<sup>43</sup> The variegate darter is tolerant of a wider range of habitat conditions than the candy darter, so negative habitat changes could selectively benefit the variegate darter and increase the rate at which the candy darter is extirpated.<sup>44</sup>

### C. Canopy Loss Can Lead to Increased Water Temperatures.

Candy darters are habitat specialists that primarily occur in highly forested watersheds in sections with cool stream temperatures and little embeddedness.<sup>45</sup> Dunn (2013) found that preferred habitat including cool stream temperatures and clean substrates were highly correlated with forested watersheds, which is a pattern frequently found in other studies.<sup>46</sup> Dunn and

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<sup>34</sup> *Id.*

<sup>35</sup> *Id.* (citing USFS. 2011. FY 2011 Watershed Restoration Action Plan, Headwaters East Fork Greenbrier River. U.S. Dep’t of Agriculture, Monongahela National Forest; USFS. 2011. FY 2011. Watershed Restoration Action Plan, Headwaters West Fork Greenbrier River. U.S. Department of Agriculture, Monongahela National Forest).

<sup>36</sup> See Cranberry Spring Creek Scoping Letter (April 2021).

<sup>37</sup> *Id.* at 2.

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

<sup>40</sup> *Id.*

<sup>41</sup> *Id.*

<sup>42</sup> Biological Assessment for Big Rock Project at 20.

<sup>43</sup> FWS (2017), *supra* note 1.

<sup>44</sup> Candy Darter SSA, at 65.

<sup>45</sup> Dunn, C. 2013. Comparison of habitat suitability among sites supporting strong, localized, and extirpated populations of candy darter (*Etheostoma osburni*), Technical Report, (December 2013).

<sup>46</sup> *Id.*

Angermeier (2018) found refugium habitats for candy darters contained cooler temperatures and less fine sediment.<sup>47</sup>

In addition to sedimentation, warming waters resulting from loss of canopy cover and climate change pose an additional threat to the species.<sup>48</sup> Extensive forest clearing in the early 20<sup>th</sup> century likely led to widespread increases in water temperatures, which may have been a factor in the early decline of the species.<sup>49</sup> Deforested areas (such as those resulting from timber harvests) likely continue to contribute to elevated water temperatures in some streams and rivers in the upper Kanawha.<sup>50</sup> Timber projects that leave insufficient canopy cover along banks can result in higher temperatures that can adversely affect the species.<sup>51</sup>

#### D. Listing Under the Endangered Species Act and Designation of Critical Habitat

In 2010, the Center for Biological Diversity petitioned the FWS to list the candy darter under the ESA. On September 27, 2011 FWS published a 90-day finding that there was substantial scientific or commercial information indicating that listing may be warranted.<sup>52</sup> In 2015, the Center filed a complaint against FWS for failure to complete a 12-month finding for the candy darter within the statutory timeframe. After entering into a settlement agreement with the Center, FWS issued a 12-month finding on October 4, 2017 proposing to list the candy darter as a threatened species.<sup>53</sup> On November 21, 2018, FWS published a final rule listing the candy darter as endangered.<sup>54</sup> Also, on that day, FWS published a proposed rule to designate critical habitat for the species.<sup>55</sup> On April 7, 2021 FWS published its final rule designating critical habitat for the species.<sup>56</sup> (See attachment).

In the final rule designating critical habitat, FWS identified five physical or biological features that are essential to the conservation of the candy darter. They are:

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<sup>47</sup> Dunn, C.G. and Angermeier, P.L. 2018. Remaining populations of an upland stream fish persist in refugia defined by habitat features at multiple scales. *Diversity and Distributions*. 2018; 1-15.

<sup>48</sup> McBaine, K.E. and Angermeier, P.L., Natural history, threats, and current research related to Candy Darter in Virginia.

<sup>49</sup> Candy Darter SSA, at 40.

<sup>50</sup> *Id.*

<sup>51</sup> 83 Fed. Reg. 59241.

<sup>52</sup> USFWS, Endangered and Threatened Wildlife and Plants; Partial 90-Day Finding on a Petition to List 404 Species in the Southeastern United States as Endangered or Threatened with Critical Habitat, 76 Fed. Reg. 59835 (Sep. 27, 2011).

<sup>53</sup> USFWS, Endangered and Threatened Wildlife and Plants; Proposed Threatened Species Status for the Candy Darter, 82 Fed. Reg. 46197 (October 4, 2017).

<sup>54</sup> USFWS, Endangered and Threatened Wildlife and Plants; Endangered Species Status for the Candy Darter, 83 Fed. Reg. 58747 (Nov. 21, 2018).

<sup>55</sup> USFWS, Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Candy Darter, 83 Fed. Reg. 59232 (Nov. 21, 2018).

<sup>56</sup> USFWS, Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Candy Darter, Final Rule, 86 Fed. Reg. 17956-17992 (Apr. 7, 2021).

- (1) Ratios or densities of nonnative-species that allow for maintaining populations of candy darters.
- (2) *A blend of unembedded gravel and cobble that allows for normal breeding, feeding, and sheltering behavior.*
- (3) Adequate water quality characterized by seasonally moderated temperatures and physical and chemical parameters (e.g., pH, dissolved oxygen levels, turbidity) that support normal behavior, growth, and viability of all life stages of the candy darter.
- (4) An abundant, diverse benthic macroinvertebrate community (e.g., mayfly nymphs, midge larvae, caddisfly larvae) that allows for normal feeding behavior.
- (5) Sufficient water quantity and velocities that support normal behavior, growth, and viability of all stages of the candy darter.<sup>57</sup>

FWS noted that the features essential to the conservation of the candy darter may require special management considerations or protections to reduce several threats, including among others, “excessive sedimentation and stream bottom embeddedness (the degree to which gravel, cobble, rocks, and boulders are surrounded by, or covered with, fine sediment particles).”<sup>58</sup>

The final critical habitat designation focuses on occupied streams within the historical range of the species that retain the necessary physical or biological features that allow for maintenance and expansion of populations. FWS designated five units as critical habitat and these include:

- The Greenbrier;
- Middle New;
- Lower Gauley;
- Upper New; and
- Upper Gauley.<sup>59</sup>

FWS is also considering reestablishing populations within the candy darter’s historical range.<sup>60</sup> In all, FWS designated approximately 593 stream kilometers (368 stream miles) in five units as critical habitat.<sup>61</sup>

E. The Forest Service Must Analyze the Impacts of Sedimentation, Tree Canopy Loss, and Potential Hybridization.

The Cranberry Spring Creek Project covers a 69,448-acre area and includes the Cranberry River.<sup>62</sup> The Cranberry River is part of Unit 5 (Upper Gauley) and classified as Unit “5e” in the

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<sup>57</sup> 86 Fed. Reg. 17961-62.

<sup>58</sup> *Id.* at 17962.

<sup>59</sup> *Id.*

<sup>60</sup> *Id.* at 17961.

<sup>61</sup> *Id.* at 59236-59237.

<sup>62</sup> See USDA, Cranberry Spring Creek Project, at [https://www.fs.usda.gov/nfs/11558/www/nepa/114471\\_FSPLT3\\_5633654.pdf](https://www.fs.usda.gov/nfs/11558/www/nepa/114471_FSPLT3_5633654.pdf)

final critical habitat rule for the candy darter.<sup>63</sup> Unit 5e consists of approximately 39.3 square kilometers (24.4 square miles) of the Cranberry River from the confluence of the North and South Forks of the Cranberry River, downstream to the confluence of the Cranberry River and the Gauley River.<sup>64</sup> As the final rule describes, “the land adjacent to this unit is almost entirely forested, and the stream is entirely within the Monongahela National Forest. Survey data indicated candy darters are present at the upper and lower portions of this unit.”<sup>65</sup>

“NEPA imposes procedural requirements designed to force agencies to take a ‘hard look’ at [the] environmental consequences” of their actions.<sup>66</sup> In comparing and analyzing potential alternatives, the draft EA should examine the direct, indirect, and cumulative impacts of the different alternatives, the conservation potential of those alternatives, and the means to mitigate environmental impacts. A thorough analysis of the project’s impacts to the candy darter and its critical habitat is essential for determining whether less environmentally damaging alternatives are available.

The Scoping presentation states that there will be 8,045 acres of total thinning treatments, 1,679 acres of total regeneration treatments, and 640 acres of miscellaneous vegetation treatments. It identifies 939 acres of commercial timber regeneration harvests (clear-cuts with reserves). One of the maps included in the presentation (page 60) depicts at least four thinning treatments directly adjacent to and/or abutting candy darter critical habitat. Additionally, there are several proposed regeneration cuts interspersed amongst these and other thinning treatments less than 1.25 miles (based on the map’s scale). These operations can have a wide range of impacts on upland and aquatic environments, from soil disturbance and compaction, to erosion, sedimentation, and stream acidification. The Forest Service must provide details concerning the size of these cuts, their location, and the proximity and intensity of logging near candy darter habitat. There must also be site-specific information regarding the steepness of the slopes in the stands near candy darter habitat, how those areas will be logged (i.e. by helicopter or otherwise), and their location relative to existing and future permanent roads, skid roads, log landings, and other potential conveyances of sediment.

Timber projects can have significant erosion and sedimentation impacts. As the Forest Service has explained in planning other projects on the Monongahela, road cuts and surfaces can intercept groundwater and precipitation and compacted road surfaces and ditches concentrate flow and accelerate water movement downslope. This can lead to head-cutting, gully formation and surface erosion of the road surface, fill-slope loss, concentrated flow erosion at channel crossings, elevated water temperature from exposed groundwater, delivery of sediment to streams from the combined effects of concentrated flow and exposed soil, and reduced site productivity. The magnitude of effects to hydrology are primarily related to the amount of groundwater interception, road surface compaction, connection of road networks to stream

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<sup>63</sup> 86 Fed. Reg. at 17991.

<sup>64</sup> *Id.* at 17966.

<sup>65</sup> *Id.* (emphasis added).

<sup>66</sup> *Earth Island Inst. v. United States Forest Serv.*, 351 F.3d 1291, 1300 (9th Cir. 2003).

channels and slope. The transport of sediment is related to the distance between the source and the channel as well as road design.<sup>67</sup>

The proposal calls for the creation of 25 miles of new roads. It is therefore critical that the Forest Service identify the location of existing and future roads in relationship to candy darter populations and designated critical habitat and analyze the potential impacts of sedimentation to the species. This analysis must examine the site-specific impacts as well.<sup>68</sup> Analyzing and disclosing site-specific impacts is critical because where and when and how close in geographic and temporal proximity activities occur on a landscape strongly determines the nature of the impact.<sup>69</sup> Generalized statements about logging practices, acreage figures, miles of roads, and potential mitigation measures are insufficient.<sup>70</sup> The Forest Service must assess each prescription in every unit and explain how that action will or will not adversely affect the species.

The Forest Service must also discuss the impacts of tree canopy loss on the species, taking into account the baseline conditions and how these conditions when added to the proposed project may further impact the species. The Forest Service must disclose the site-specific details of the activities that will occur in riparian habitats, their proximity to candy darter habitat, and what specific measures will be used to avoid, minimize, and mitigate impacts to the species. To the extent that the Forest Service intends to rely on large woody material (LWM) or other restoration methods to improve candy darter habitat, the agency must explain why these activities wouldn't otherwise be negated by the effects of canopy loss from logging in riparian areas near the species' habitat.

While the Upper Gauley populations remain relatively pure, future habitat degradation caused by sedimentation, increased water temperatures from further tree canopy loss, and restoration activities that are not properly planned for and implemented, could result in hybridization with variegate darter.

There are also several other forest and non-forest projects that threaten the candy darter. These projects include the Panther Ridge and Greenbrier Southeast projects, as well as two proposed pipeline corridors that may impact candy darters and their proposed critical habitat: The Mountain Valley Pipeline corridor, which will cross proposed critical habitat in the Gauley River in West Virginia and Stony Creek in Virginia, and the Atlantic Coast Pipeline corridor, which will cross proposed critical habitat in the Clover Creek/Greenbrier River area of West Virginia. The Forest Service must consider the cumulative effects of these projects under NEPA.

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<sup>67</sup> See Greenbrier Southeast Draft Environmental Assessment at 18-21.

<sup>68</sup> Site-specific decisions require site-specific analysis, before the decision is made. See, e.g., *Ilio 'ulaokalani Coalition v. Rumsfeld*, 464 F.3d 1083 (9th Cir. 2006).

<sup>69</sup> *Richardson v. BLM*, 565 F.3d 683, 706 (10th Cir. 2009) (The actual "location of development greatly influences the likelihood and extent of impacts.").

<sup>70</sup> *Id.* at 707 (explaining that "location, not merely total surface disturbance, affects habitat fragmentation," and therefore location data is critical to the site-specific analysis NEPA requires"); *Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 995 (9th Cir. 2004) (holding enumeration of logging acres and road miles insufficient to describe actual environmental effects). An agency may also not rely on general mitigation measures, without analyzing the efficacy of those measures on site-level impacts. See *Colorado Env't'l. Coal v. Dombeck*, 185 F.3d 1162, 1173 (10th Cir. 1999).

FWS has previously expressed concern about the impacts of pipelines on candy darters, most recently in its 2018 SSA for the species. In reference to the Mountain Valley Pipeline, FWS remarked:

Future projects, such as a proposed large (107 cm (42 in) diameter) interstate natural gas pipeline, are expected to increase sediment loading in streams within the range of the candy darter (Federal Energy Regulatory Commission (FERC) 2016, pp. 4-108-4-115, 4-176-4-179). This proposed pipeline project will involve the clearing of a 23 to 38 m (75 to 125 ft) wide permanent right-of-way, trenching for the pipe, and will cross five current or historical candy darter streams (the upper Gauley River, lower Greenbrier River, Indian Creek, Stony Creek, and Sinking Creek)(FERC 2016, pp. 4-26-4-27). While project construction is not anticipated to cause direct “adverse impacts” to candy darters in Stony Creek (FERC 2016, pp. 4-187), the stream crossings and forest clearing associated with the permanent right-of-way are likely to increase sediment loading in the relevant watersheds, possibly degrading the habitat in streams potentially suitable for future candy darter reintroductions (if this is determined to be a feasible conservation tool).<sup>71</sup>

The Forest Service must consider the cumulative effects of these projects under NEPA, in view of their potential, adverse cumulative effect on the species and its proposed critical habitat.

F. The Forest Service Should Develop and Pursue an Alternative that Avoids Impacting Candy Darters and their Critical Habitat.

As stated above, there appears to be several thinning and regeneration harvests either adjacent to or within a mile of candy darter critical habitat. As a threshold issue, the Forest Service needs to reexamine the rather outdated assumptions contained in the Forest Plan that logging is necessary to achieve the targets for early successional habitat, given the increases in the frequency, duration, and intensity of natural disturbances fueled by climate change. Nevertheless, it is likely that the Forest Service could still achieve the 12-20% target for ESH and achieve the purpose and need for the project, without having to log areas directly adjacent to or otherwise impacting candy darter critical habitat. Accordingly, the Forest Service should identify and implement a preferred alternative that avoids impacting candy darters and their critical habitat.

G. The Forest Service and U.S. Fish and Wildlife Service Must Initiate Formal Consultation under the Endangered Species Act.

Given the potential impacts to the candy darter and its critical habitat, the Forest Service should initiate formal consultation with FWS under the Endangered Species Act.<sup>72</sup> During this consultation FWS must rely on the best available science<sup>73</sup> and the action area must be defined

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<sup>71</sup> Candy Darter SSA at 39.

<sup>72</sup> FWS explained in its final critical habitat decision that activities that should result in consultation include, among others, “actions that would significantly increase water temperature or sedimentation and stream bottom embeddedness. Such activities could include, but are not limited to, land use changes that result in an increase in sedimentation, erosion, and bankside destruction or the loss of the protection of riparian corridors and leaving insufficient canopy cover along banks.” 86 Fed. Reg. 17967.

<sup>73</sup> See 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(g)(8).

broadly to include all areas that would be directly and indirectly impacted by this project.<sup>74</sup> The Biological Opinion must also establish an environmental baseline that considers the declining conditions and status of the species.<sup>75</sup> FWS' analysis should be informed by population studies of the species in the Upper Gauley Unit, Cranberry River, and nearby tributaries. If mitigation is contemplated, those measures must be explained in detail and they must be certain to occur.<sup>76</sup> The Biological Opinion must also consider the project's impacts in conjunction with other threats facing the species, including rising temperatures and changing precipitation and drought patterns caused by climate change.<sup>77</sup> When assessing whether the project could jeopardize the continued existence of the species or adversely modify its critical habitat, FWS must consider the impacts on both survival *and* recovery.<sup>78</sup>

## II. Old Growth and Potential Old Growth Trees Must be Protected.

We are very concerned that the Forest Service may be including old growth and potential old growth stands in areas it intends to log. Late successional forests (>120 years) make up 5% of the project area and mid successional forests (40-79 years) make up 6% of the project area. Yet, the Forest Plan indicates that old growth "represents a minimal part, comprising less than one percent of the entire Forest. Where it does exist, old growth is limited to small, scattered patches within a larger matrix of primarily 70-to 90-year old forests."<sup>79</sup>

These areas must be excluded from logging as they not only provide numerous benefits for wildlife but they are also essential to combatting the effects of climate change as they pull carbon from the atmosphere and have significant carbon stores built up over decades and centuries.<sup>80</sup>

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<sup>74</sup> The Act's implementing regulations define the "action area" as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." 50 C.F.R. § 402.02.

<sup>75</sup> Section 7(a)(2) requires FWS to "[e]valuate the effects of the action and cumulative effects on the listed species or critical habitat," 50 C.F.R. § 402.14(g)(3), by describing the environmental baseline which includes "the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area . . . and the impact of State or private actions which are contemporaneous with the consultation in progress." *Id.*; *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 929-33 (9th Cir. 2007)(holding a biological opinion must incorporate a degraded baseline).

<sup>76</sup> Under the Endangered Species Act, mitigation must be "reasonably specific, certain to occur, and capable of implementation; they must be subject to deadlines or otherwise-enforceable obligations; and most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards." *See, e.g., Center for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002).

<sup>77</sup> *See, e.g., NRDC v. Kempthorne*, 506 F. Supp. 2d 322, 369 (E.D. Cal. 2007)(biological opinion failed to discuss climate change effects on stream flows); *Pacific Coast Federation of Fishermen v. Gutierrez*, 606 F. Supp. 2d 1122, 1184 (E.D. Cal. 2008)(holding that agency failed to consider an important aspect of the problem by failing to "address, adequately explain, and analyze the effects of global climate change on the species"); *S. Yuba River Citizens League v. Nat'l Marine Fisheries Service*, 723 F. Supp. 2d 1247, 1274 (E.D. Cal. 2010)(agency failed to consider the impacts of climate change in biological opinion for dam projects).

<sup>78</sup> *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 931 (9th Cir. 2008)(noting survival and recovery are "intertwined needs that must both be considered in a jeopardy analysis").

<sup>79</sup> *See* Forest Plan, Appendix B at B-1.

<sup>80</sup> *See* Luyssaert S, et al. 2008. Old-growth forests as global carbon sinks. *Nature* 455:213–215, Keith, H, B.G. Mackey, and D.B. Lindenmayer. 2009. Re-evaluation of forest biomass carbon stocks and lessons from the world's most carbon dense-forests, *PNAS* 106(28): 11635-11640; Stephenson, N. L., et al. 2014. Rate of Tree Carbon Accumulation Increases Continuously with Tree Size. *Nature* 507, no. 7490 (March 6, 2014): 90–93. <https://doi.org/10.1038/nature12914>, Mildrexler, D.J. et al. 2020. Large trees dominate carbon storage in forests east

Scientists favor leaving older-growth trees intact for their ability to sequester Co2 from the atmosphere, and thereby counteract global temperature increases resulting from anthropogenic climate change.<sup>81</sup>

It is not clear from the maps included in the scoping presentation whether these stands are protected from logging and we urge the Forest Service to do so. In the face of unprecedented climate disruption, the Forest Service should be doing all it can in furtherance of Executive Orders like 30x30<sup>82</sup> to expand old growth forests on public lands.

### **III. Hardwoods Should Not Be Harvested as Part of Spruce Restoration.**

We remain concerned about the management of the West Virginia northern flying squirrel (WVNFS) on the Monongahela National Forest. The proposed project will thin 2,233 acres of overstory hardwood trees to increase the spruce component in the overstory, midstory, and understory of several stands.

The Forest Service must recognize the importance of hardwood stands to the species and consider the loss of food sources resulting from the removal of hardwood tree species. To date, the Forest Service has also not conducted the necessary studies in the Forest to determine what vegetation management activities are needed to maintain the persistence of the WVNFS. Therefore, we believe it is premature for the Forest Service to log within WVNFS suitable habitat in the name of “spruce restoration” without first knowing precisely what management activities are necessary to sustain the species.

The WVNFS is a management indicator species. Under the Forest Plan of 2006 and the delisting plan promulgated by the US Fish and Wildlife Service and implemented in 2013, protection of this rare mammal is the responsibility of the Forest Service. Suitable habitat for the WVNFS is defined in the Forest Plan:

*“SUITABLE HABITAT (for WV Northern Flying Squirrel) – Areas that have habitat characteristics required by WV northern flying squirrels as indicated by known capture locations. All suitable habitat is assumed to be potentially occupied by the WVNFS, even if no WVNFS have been captured in it (USFWS 2001). Generally, it includes forest habitat with red spruce and mixed red spruce/northern hardwood forest, Norway spruce plantations, mixed eastern hemlock/northern hardwoods, and overstory eastern hemlock or balsam fir with red spruce present in the understory. Suitable habitat also includes an 80-meter buffer around areas with the above-listed characteristics, as well as corridors to provide linkages for habitat areas and prevent barriers to movement.” V-16 Glossary.*

Appendix A Management Prescription 4.1 states: *On lands determined to be suitable habitat for the West Virginia northern flying squirrel, vegetation management **initially** would be limited to*

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of the Cascade Crest in the United States Pacific Northwest. *Frontiers in Forests and Global Change*  
<https://www.frontiersin.org/articles/10.3389/ffgc.2020.594274/full>

<sup>81</sup> *Id.*

<sup>82</sup> See Executive Order 14008 of January 27, 2021, “Tackling the Climate Crisis at Home and Abroad,” 86 Fed. Reg. 7619-7633 (Feb. 1, 2021).

*research or administrative studies to determine effective habitat enhancement techniques for the squirrel. After such studies have demonstrated effective techniques, vegetation management to enhance habitat for the squirrel or other TEP species could occur on a larger scale (see FW standard TE61).*

There have been no studies initiated by the Monongahela National Forest to determine what vegetation management is most beneficial to the WVNFS. This is clear from the recent publication of the Five- Year Review or Interim Report Evaluating Implementation of the Post-Delisting Monitoring Plan for the West Virginia Northern Flying Squirrel (*Glaucomys sabrinus fuscus*) prepared by the U.S. Fish and Wildlife Service, West Virginia Field Office, Elkins, West Virginia, November 2019. The report explains that monitoring squirrel impacts from Corridor H yielded no data, nest box monitoring programs for the WVNFS have been curtailed, and a project to study before and after logging effects on squirrel in the Upper Greenbrier was not completed. No population studies since de-listing have been performed. A diet study performed by Purdue University using hair samples led to the discovery that WVNFS diet foods were found in older stands of trees. “The vegetation surveys revealed that no habitat type had a greater availability of the diet items that contributed most to the assimilated diet of *G. s. fuscus*, suggesting that stand age and structure may be more important for diet-item availability than habitat type. ... However, regardless of forest type, mature stands typically had structural features and composition that afforded food resources, whereas younger stands did not.” This study has not been incorporated into any management plan for the protected WVNFS.<sup>83</sup>

The Monongahela still appears to be in the initial stage of examining the impacts of timbering on flying squirrel habitat. Because of this, we believe that no logging should be conducted in flying squirrel habitat or the buffer that surrounds this habitat unless impact studies are planned, funded, completed, analyzed, and explained to the public. In addition, connectivity between separated patches of WVNFS habitat should remain intact, with an emphasis on leaving older, taller trees in these corridors, which aid the WVNFS in moving across the landscape as they efficiently glide from tree to tree avoiding predators and conserving energy.

Research on the rare northern flying squirrels of the Appalachians has taught us lessons about northern flying squirrel needs in the areas of food requirements, shelter, and locomotion as they move across the forest landscape to find food and mates. As Dr. Peter Weigl, Professor Emeritus at Wake Forest University, explains:

In the Appalachians northern flying squirrels are commonly found in older forests of spruce (*Picea rubens*), fir (*Abies fraseri*), beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), and yellow birch (*Betula alleghaniensis*), especially in the ecotones between conifers and hardwoods...An array of studies have documented the squirrel’s habitat diversity (Ford et al. 2004; Menzel et al. 2006; Payne et al. 1989; Stihler et al. 1987; United States Department of the Interior, Fish and Wildlife Service 2006; Urban 1988)

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<sup>83</sup> See Trapp, S. E., Smith, W.P., Flaherty, E.A. 2017. Diet and food availability of the Virginia northern flying squirrel (*Glaucomys sabrinus fuscus*): implications for dispersal in a fragmented forest. *Journal of Mammalogy* 98(6): 1688-1696.

pointing out the importance of hardwood and mixed forest habitats. *G. sabrinus* of West Virginia is more abundant and its populations more continuous than in most parts of the east. Many of the squirrels are caught in forests in which spruce is present, and this tree species supports one of the fungal genera (*Elaphomyces*) eaten by the squirrel (Loeb et al. 2000). Therefore, the United States Fish and Wildlife Service has decided that if forests containing spruce are protected in the national forests, the flying squirrel's preservation is insured, and it can be delisted, not to the "threatened" level but taken off the critical list entirely. The problems with this approach are many. First, it is not clear if there is any direct causality between the presence of flying squirrels and spruce. Both animal and plant may be responding independently to the same boreal conditions. Squirrels may nest in spruces occasionally and use them as one of many food sources, but there is no proof of any obligate relationship. Second, in more than 40 years of trapping and nestbox checking in various Appalachian habitats, I almost never captured animals in extensive, pure conifer stands, although telemetry revealed that they sporadically used them. Third, such a course of action fails to sufficiently protect the northern hardwood areas often used by *G. sabrinus*.<sup>84</sup>

Dr. John Pagels, Professor Emeritus at Virginia Commonwealth University, has also identified the importance of northern hardwoods for the WVNFS:

[Referring to the Recovery Plan Amendment for the WVNFS]. ...the amended guidelines note that preferred habitat is basically as stated in the Recovery Plan, with exceptions relating to elevation guidelines, the conifer component, and spatial distribution of the habitat components. The amendment notes that many of the captures of the squirrel occur in transitional zones between northern hardwood forests and montane boreal forests, that this zone occurs at elevations of ranging from approximately 2,600 to 4,600 feet, and is "typified by a mixed and highly variable overstory species composition of American beech, yellow birch, black cherry, sugar maple, red spruce and eastern hemlock."...However, the amended (USFWS 2001) guidelines note that the relative abundance of the conifer component can be small, and in some cases confined to the understory.<sup>85</sup>

Trapp, et al. (2017) described the importance of northern hardwood forests when it comes to the diet and food availability of the WVNFS:

The stable isotope analysis revealed that hypogeous fungi, epigeous fungi, invertebrates, lichen, and beechnuts were dominant components of the diet of *G. s. fuscus*...

Epigeous fungi were most available in conifer habitat, and are more available in conifer, mixed conifer-hardwood, and hardwood habitats than in red spruce habitat, suggesting

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<sup>84</sup> Weigl, P.D. 2007. The Northern Flying Squirrel (*Glaucomys Sabrinus*): A Conservation Challenge. *Journal of Mammalogy*, 88(4): 897-907.

<sup>85</sup> Professor John Pagels, Virginia Commonwealth University, Richmond VA Testimony 2005 Highland Wind Project.

epigeous fungi may be available to dispersing *G. s. fuscus*. Although arboreal lichen was not encountered during our fieldwork, surveys of lichen abundance in New England found various species of lichen in both conifer and hardwood habitats, suggesting an availability of lichen across habitat types (Selva 1994). However, Selva (1994) found a strong connection between lichen abundance and forest age, with higher lichen availability in more mature forests. Furthermore, the importance value for American beech, which may correspond to the availability of beechnuts, was higher in hardwood and mixed conifer-hardwood habitats than in red spruce habitat. The beechnut crop corresponds with the dispersal season of *G. sabrinus* (Villa et al. 1999), potentially providing forage for dispersing individuals. However, *G. s. fuscus* may encounter high levels of competition for beechnuts from hard-mast specialists, such as *G. volans* and red squirrels (*Tamiasciurus hudsonicus*), and beechnuts are only available during a limited time period. Future research should focus on additional potential limiting factors, such as the behavioral exclusion of *G. s. fuscus* by *G. volans* in the habitat surrounding red spruce (Weigl 1978) and impacts of climate change on forest configuration and patch extent of red spruce (White and Cogbill 1992)...Furthermore, a greater understanding of dispersal behavior of *G. s. fuscus* may provide further insights regarding the energetic requirements of dispersing juveniles and whether dispersing juveniles forage for specific foods, or rely on energy stores while moving through the landscape (Zollner and Lima 2005).

Based on our results, management of the dispersal matrix for *G. s. fuscus* should consider prioritizing mature red spruce patches that may act as connections between larger areas of red spruce. These patches may provide hypogeous fungi truffles and lichen for dispersing *G. s. fuscus*, as well as other diet items identified through stable isotope analysis. However, regardless of forest type, mature stands typically had structural features and composition that afforded food resources, whereas younger stands did not. This suggests that managers should consider stand age and structure to a greater degree than forest type for management of habitat outside of red spruce stands for *G. s. fuscus*.<sup>86</sup>

Smith (2007) identified the need to protect WVNFS habitat in northern hardwoods from habitat degradation and fragmentation:

In the central Appalachians, nests were located within 100 m of the ecotone between pure conifer and mixed northern hardwood–conifer stands (Menzel et al. 2004). *G. sabrinus* invariably selected hardwoods, mostly beech (*Fagus*), birch (*Betula*), or maple (*Acer*), as nest trees in the southern Appalachians (Weigl and Osgood 1974) and as cavity trees in central Ontario (Holloway and Malcolm 2007). However, leaf nests are almost exclusively found in conifers (Holloway and Malcolm 2007; Weigl et al. 1999), high in the canopy (Stihler et al. 1987). Elevation, tree height, nest height, and mean diameter at breast height of overstory trees were all greater at leaf nest sites than at cavity sites in the

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<sup>86</sup> Trapp, S. E., Smith, W.P., Flaherty, E.A. 2017. Diet and food availability of the Virginia northern flying squirrel (*Glaucomys sabrinus fuscus*): implications for dispersal in a fragmented forest. *Journal of Mammalogy* 98(6): 1688-1696.

central Appalachians (Menzel et al. 2004). Large hardwood snags are a common nesting structure in eastern forests (Gerrow 1996; Hackett and Pagels 2003; Holloway and Malcolm 2006, 2007), which likely is related to their higher decay rates and the preferences of primary excavators (Holloway 2006). Nest sites in eastern forests often occur on cooler, more mesic sites such as in spruce stands (Holloway and Malcolm 2007; Menzel et al. 2004; Weigl and Osgood 1974), on northern slopes (Menzel et al. 2004; Payne et al. 1989; but see Hackett and Pagels 2003), in “coves” (Payne et al. 1989), or in areas with large amounts of downed wood (Hackett and Pagels 2003), all of which are favorable conditions for higher decay rates and fungal growth (Loeb et al. 2000)...

Nevertheless, *G. sabrinus* cannot live in all forest habitats. In addition to the resources highlighted in this paper, there are essential elements of forest habitat that I did not consider, such as structural features of the overstory and midstory that facilitate gliding (see Scheibe et al. 2007). Because food resources frequently are clumped and ephemeral, relatively dense canopies, large tall trees, and open midstories are needed for individuals to move through their home range efficiently and safely (Scheibe et al. 2006; Vernes 2001). ...However, the most significant challenge is maintaining functional connectivity across landscapes. Many populations are fragmented and an increasing number of populations are becoming fragmented or more isolated throughout its range. Moreover, the relative importance of functional connectivity in sustaining viable and well-distributed populations of *G. sabrinus* increases as forests become increasingly altered, habitat suitability diminishes, and the uncertainty of persistence increases.<sup>87</sup>

Flaherty et al. (2010) identified the loss of food sources in managed habitats:

Timber harvest changes the structure and microclimate of old-growth forests (Colgan 1997), removes the energy sources (trees) for fungi (Amaranthus et al. 1994; Colgan 1997), and damages the hyphal mat during logging operations (Carey et al. 2002). Thus, resulting clear-cuts, 2nd-growth, and thinned stands exhibit significantly lower fungal biomass and diversity than old-growth stands (Amaranthus et al. 1994; Carey et al. 2002; Waters et al. 1994), and little is known about the length of time required before fungi will reestablish colonies and begin to produce truffles (Amaranthus et al, 1994)...

Our results suggest low availability of potentially critical food items in managed habitats, which may constrain dispersal of *G. sabrinus* across clear-cut and 2nd-growth habitats. Conifer seeds, truffles, and *Vaccinium* spp. were all significantly more abundant in old-growth habitat. Furthermore, the hemlock and spruce cones we sampled in clear-cuts were likely remnants of the once present old-growth stand and consequently are likely only available for a short time postlogging. Similarly, although we encountered truffles in clear-cut plots, it is unclear how available this resource is in young regenerating stands, because we found truffles only where the roots of tree stumps had not completely died; we recorded no truffles in clear-cuts older than 2–3 years postharvest. Except for 1

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<sup>87</sup> Smith, W. P. Ecology of *Glaucomys sabrinus*: Habitat, Demography, and Community Relations. 2007. *Journal of Mammalogy* 88(4): 862-881.

sporocarp uncovered while digging a pitfall trap in a .40-year-old stand, we found no truffles in 2nd-growth habitat. Carey et al. (2002) suggested that harvest plans that leave legacy (i.e., old-growth trees) in managed stands will increase the persistence of truffles. Page 87.<sup>88</sup>

As you can gather from the selected quotes from WVNFS research, the squirrel is found in both northern hardwoods and conifers at high elevations, and depends heavily on a variety of underground fungus and lichens as well as beechnuts, which are mainly found in older growth forests. It requires larger trees to help it move safely across the landscape and creates nests in both conifers and hardwoods. The hyphal mats that produce truffles (a major food source for these squirrels) can be damaged by logging. We believe that this research argues against cutting hardwoods in and around flying squirrel habitat. We also believe that research shows that the truffles etc. eaten by squirrels require a moist forest floor and older tree stands. This food source would be negatively impacted if the WVNFS habitat and the buffer around it were to dry out or the soil become compacted due to logging.

We encourage the Forest Service to follow its legal obligations and to conduct spruce restoration activities in a way that does not cause adverse impacts to the WVNFS. We strongly encourage the Forest Service to provide a detailed description of the process that will be used to delineate suitable habitat in this proposed project.

#### **IV. The Forest Service Must Clarify the Activities in Inventoried Roadless Areas.**

It appears several components of the proposed project will occur in inventoried roadless areas (IRAs), totaling 15,676 acres. It is unclear from the scoping documents whether the Forest Service will utilize existing infrastructure within these areas to carry out its activities or whether it intends to create new roads despite the designation of these areas. The scoping notice states that “2.5 miles of total new system roads, 4.5 miles of the total maintenance, and .5 mile of the total temporary roads are located in IRAs.” Additionally, it appears there may be some thinning projects occurring in IRAs along the border of the Cranberry Wilderness Area. (See Scoping Presentation at 60). The scoping notice states that actions in IRA’s “are permitted but require review and approval by the Forest Service’s Regional Office.”

The national Roadless Area Conservation Rule, adopted in 2001, generally prohibits the cutting, sale or removal of timber from National Forest Service inventoried roadless areas in West Virginia.<sup>89</sup> 36 C.F.R. § 294.13 provides only a few exceptions to this rule and the Roadless Rule “expects” that logging in roadless areas for any purpose will “be infrequent.”<sup>90</sup> Further, 36 C.F.R. § 294.12 contains just a few exceptions to the prohibition on road construction and road reconstruction in roadless areas.

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<sup>88</sup> Flaherty, E.A., Ben-David, M. Smith, W.P. 2010. Diet and food availability: implications for foraging and dispersal of Prince of Wales northern flying squirrels across managed landscapes. *Journal of Mammalogy*. 91(1): 79-91.

<sup>89</sup> 36 C.F.R. § 294.13(a), published at 66 Fed. Reg. 3244 (Jan. 12, 2001) (“Timber may not be cut, sold, or removed in inventoried roadless areas of the National Forest System, except as provided in paragraph (b) of this section.”).

<sup>90</sup> *Id.* § 294.13(b).

It is unclear under which of these exceptions the Forest Service is intending to carry out activities in IRAs, and there appears to be no exception that would be appropriate in this instance. While there is an exception for logging “generally small diameter timber” in some instances,<sup>91</sup> the scoping documents do not sufficiently describe the trees to be logged in any way, making it impossible to tell whether the Forest Service intends to log generally small diameter timber, or indeed whether it has identified what it considers to be small diameter timber. While it does not appear that regeneration harvests are included in the IRAs, if so, any harvests in mid to late successional stands to create early successional habitat would not qualify under this exception as these trees are at the youngest 40 years old and in some stands may exceed 120 years of age. Even if small diameter trees are identified for harvest, the cutting, sale, or removal of generally small diameter trees would not maintain or improve one or more of the roadless area characteristics,<sup>92</sup> much less improve threatened, endangered, proposed, or sensitive species habitat or maintain or restore the characteristics of ecosystem composition and structure within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period.<sup>93</sup> Rather, as explained earlier, the removal of hardwoods in these areas would negatively impact WVNFS foraging habitat and may negatively impact candy darter critical habitat (sedimentation, canopy loss, etc.). In addition, the Forest Service has not fully considered the degree to which early successional habitat is otherwise being established through natural disturbance regimes that have been altered due to climate change. The fact that many of these projects will likely take years and require multiple cuts, also does not indicate that the logging will be “infrequent.”

Moving forward, the Forest Service must clearly identify and document any road building and/or timbering actions in IRAs. It must also identify the specific provisions of the roadless rule it intends to apply if it further contemplates activities within the IRAs. This must also be accompanied by a highly site-specific analysis of the roadless area characteristics that the project will purportedly maintain or improve, given the regulation’s emphasis on “locally identified unique characteristics,”<sup>94</sup> which in this case likely includes recently designated critical habitat for

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<sup>91</sup> *Id.* § 294.13(b)(1).

<sup>92</sup> 36 C.F.R. § 294.11 defines roadless area characteristics as:

Resources or features that are often present in and characterize inventoried roadless areas, including:

- (1) High quality or undisturbed soil, water, and air;
- (2) Sources of public drinking water;
- (3) Diversity of plant and animal communities;
- (4) Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land;
- (5) Primitive, semi-primitive nonmotorized and semi-primitive motorized classes of dispersed recreation;
- (6) Reference landscapes;
- (7) Natural appearing landscapes with high scenic quality;
- (8) Traditional cultural properties and sacred sites; and
- (9) Other locally identified unique characteristics.

<sup>93</sup> *See* 36 C.F.R. § 294.13(b)(1).

<sup>94</sup> *Id.* § 294.11 (emphasis added).

the endangered candy darter. This analysis must map the roadless areas at issues, review the values of each roadless area impacted by a specific project, and evaluate the impacts of the proposed actions. This information is also necessary so that the public has a meaningful opportunity to comment on their potential impacts and identify alternatives that could avoid these impacts.

**V. The Forest Service Must Analyze Indirect Impacts to the Cranberry Wilderness Area.**

The Cranberry Spring Creek Project area boundary includes the Cranberry Wilderness Area, which is a federally designated wilderness area. While the scoping presentation for the Cranberry Spring Creek project did not list any actions as occurring within the Cranberry Wilderness Area, the Scoping Presentation identifies several “thinning” and “thinning for spruce restoration” projects adjacent to or in close proximity to designated wilderness. (*See* Scoping Presentation at 60). Thus, there is potential for the project's proposed actions to indirectly affect the quality of the designated wilderness area.

Designated Wilderness Areas are an important recreational resource for the public and must be monitored to remain as pristine as possible. The public specifically has an interest in ensuring the Cranberry Wilderness Area remains unharmed by the proposed actions of the Cranberry Spring Creek project. We urge the Forest Service to include in its initial Environmental Assessment an analysis of potential indirect impacts to the Cranberry Wilderness Area, including the potential for sediment run-off and habitat degradation in MP 5.0 and designated candy darter critical habitat.

Thank you for the opportunity to comment on this proposal. Please make these comments and the attached documents part of the official record for this project. Also, please send us all future notices for this project.

Sincerely,



Jason Totoiu  
Senior Attorney  
Center for Biological Diversity



Judith Rodd  
Director  
Friends of Blackwater Canyon