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FOOD SAFETY



Via Certified and Electronic Mail

September 6, 2018

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Re: Petition to Re-Open the Comment Period or, in the Alternative, for Reconsideration of the Service's "Compatibility Determination for Cooperative Farming" for the Wheeler National Wildlife Refuge Complex

Dear Sirs,

The Center for Biological Diversity, Center for Food Safety, and Tennessee Riverkeeper (jointly Conservation Groups) submit this petition to re-open the comment period or, in the alternative, for reconsideration of the Fish and Wildlife Service's (Service) Compatibility Determination for Cooperative Farming for the Wheeler National Wildlife Refuge Complex (Wheeler Farming CD). In taking the requested action, the Service can solicit meaningful public input and reasonably consider whether the continued approval of chemical pesticides for commercial agricultural purposes, including dicamba, glyphosate, and recently re-authorized neonicotinoids, contributes to the refuges' purposes of protecting endangered species and providing an inviolate sanctuary and breeding ground for migratory birds and other wildlife.

The Wheeler Farming CD, originally made available for public review and comment in January of 2018, is a written determination regarding the compatibility of the cooperative farming program in the Wheeler National Wildlife Refuge Complex (Wheeler Complex). Conservation Groups are concerned that this discretionary economic use of refuge lands by private farmers is not compatible with the mission of the National Wildlife Refuge System (Refuge System) and the purposes of the refuges on which the use has been approved because it continues, without meaningful analysis or stipulation, to authorize the use of non-essential agricultural pesticides known to be harmful to the plants and animals that these refuges were established to protect. 16 U.S.C. § 668ee(1); 50 C.F.R. § 25.12. Conservation Groups believe that the continued use of agricultural pesticides pursuant to this program will unreasonably and materially harm the biological integrity, diversity, and environmental health of the refuges and the Refuge System.

Specifically, the Wheeler National Wildlife Refuge (Wheeler NWR), a refuge in the complex, was created by Franklin D. Roosevelt in 1938 “as a refuge and breeding ground for migratory birds and other wildlife,” and as an “inviolate sanctuary” for migratory birds. E.O. 7926 (July 7, 1938); 16 U.S.C. § 715d. The Key Cave National Wildlife Refuge (Key Cave), a second refuge in the complex, was, perhaps even more significantly, established in 1997 for the benefit of the critically endangered Alabama cavefish – a species found exclusively on Key Cave – as well as the federally endangered gray bat, and to ensure the continued biological integrity of the cave habitats on which these species depend. Each refuge was created to support the mission of the Refuge System, which is “to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States.” 16 U.S.C. § 668dd(a)(2).

Despite the critical role of these wildlife refuges to endangered species, migratory birds, wildlife, and the Refuge System, in 2016 alone a combined 58 gallons and 7 pounds of pesticides were used to treat approximately 1,090 acres of crops on Wheeler NWR and Key Cave. Those pesticide uses, which include the application of exceedingly hazardous pesticides such as glyphosate, 2,4-D, and dicamba, were approved for the benefit of conventional monoculture crop production such as soybeans. The continued use of these toxic chemicals for discretionary agricultural purposes is harmful to wildlife and threatens the long-term health of these essential ecosystems.

Furthermore, on August 2, 2018 – eight months after the Wheeler Farming CD was completed – the Service made a substantial change to the categories of pesticides and pesticide-dependent cropping practices that can be used on the Wheeler Complex. Due to this substantial change, which re-authorized the availability of neonicotinoid pesticides and genetically engineered crops for use on refuge lands, the Wheeler Complex is likely to experience significant additional environmental, species, and public safety risks as a result of the cooperative farming program. To satisfy the Service’s ongoing compatibility obligations, these significant new circumstances must be reasonably considered through a reevaluation of the Wheeler Farming CD, and those findings must be made available to the public for review and comment. *See* 603 FW 2, § 2.11.

Accordingly, Conservation Groups request that the Service re-open the comment period or, in the alternative, reconsider and revise the Wheeler Farming CD, as outlined in the attached petition. We appreciate the Service's consideration of this Petition.

Sincerely,



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Center for Biological Diversity



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Riverkeeper and Executive Director
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Enclosure

cc: Cynthia Martinez, Chief, National Wildlife Refuge System (via certified and electronic mail)

**BEFORE THE
SECRETARY OF THE INTERIOR
WASHINGTON, D.C.**

***PETITION TO
RE-OPEN THE COMMENT PERIOD OR, IN THE ALTERNATIVE,
FOR RECONSIDERATION OF THE SERVICE'S
“COMPATIBILITY DETERMINATION FOR COOPERATIVE FARMING”
FOR THE WHEELER NATIONAL WILDLIFE REFUGE COMPLEX***

September 6, 2018



Cooperative Farming at Wheeler National Wildlife Refuge, courtesy of USFWS

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INTRODUCTION AND RELIEF SOUGHT

The Center for Biological Diversity (CBD), Center for Food Safety (CFS), and Tennessee Riverkeeper (hereinafter Conservation Groups) jointly submit this petition to re-open the comment period or, in the alternative, for reconsideration of the Fish and Wildlife Service's (Service's) Compatibility Determination for Cooperative Farming for the Wheeler National Wildlife Refuge Complex (Wheeler Farming CD). America's 562 national wildlife refuges – including the refuges in the Wheeler National Wildlife Refuge Complex (Wheeler Complex) – play a critical role in protecting wildlife, migratory birds, fish, and plants. It is the Service's ongoing responsibility to ensure that these indispensable public lands are managed in a way that supports each individual refuge's purpose and the mission of the National Wildlife Refuge System (Refuge System).

Conservation Groups are concerned that the cooperative farming program on the Wheeler Complex does not support the objectives of Refuge System and the purposes of the refuges on which the program is approved because it continues, without meaningful analysis or stipulation, to authorize the use of non-essential agricultural pesticides known to be extremely harmful to the plants and animals that these refuges were created to protect. 16 U.S.C. § 668ee(1); 50 C.F.R. § 25.12. Conservation Groups believe that the continued use of agricultural pesticides pursuant to this discretionary economic program will unreasonably and materially harm the biological integrity, diversity, and environmental health of the refuges and the Refuge System.

Specifically, the Wheeler National Wildlife Refuge (Wheeler NWR), a refuge in the complex, was created by Franklin D. Roosevelt in 1938 “as a refuge and breeding ground for migratory birds and other wildlife,” and as an “inviolate sanctuary” for migratory birds. E.O. 7926 (July 7, 1938); 16 U.S.C. § 715d. The Key Cave National Wildlife Refuge (Key Cave), a second refuge in the complex, was established in 1997 for the benefit of the critically endangered Alabama cavefish – a species found exclusively on Key Cave – as well as the federally endangered gray bat, and to ensure the continued biological integrity of the cave habitats on which these species depend. Each of these refuges was created to support the mission of the Refuge System, which is “to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States.” 16 U.S.C. § 668dd(a)(2).

Despite the critical role of these wildlife refuges to endangered species, migratory birds, wildlife, and the Refuge System, in 2016 alone a combined 58 gallons and 7 pounds of pesticides were used to treat approximately 1,090 acres of crops on Wheeler NWR and Key Cave. *See* Wheeler Complex Pesticide Use Spreadsheet, 2014-16 (Att. A). Those pesticide uses, which included the application of exceedingly hazardous pesticides such as glyphosate, 2,4-D, and dicamba, were approved for the benefit of conventional monoculture crop production such as soybeans. The continued use of these toxic chemicals for discretionary conventional agricultural purposes is harmful to wildlife and threatens the long-term health of these essential ecosystems.

Furthermore, on August 2, 2018 – eight months after the Wheeler Farming CD was completed – the Service made a substantial change to the categories of pesticides and pesticide-dependent cropping practices that can be used on the Wheeler Complex. Due to this substantial

change, which re-authorized the availability of neonicotinoid pesticides and genetically engineered (GE) crops for use on refuge lands, the Wheeler Complex is likely to experience significant additional environmental, species, and public safety risks as a result of the cooperative farming program. To satisfy the Service's ongoing compatibility obligations, these significant new circumstances must be reasonably considered through a reevaluation of the Wheeler Farming CD, and those findings must be made available to the public for review and comment. *See* 603 FW 2, § 2.11.

Conservation Groups, therefore, request that the Service re-open the comment period for the Wheeler Farming CD or, in the alternative, reconsider and revise the Wheeler Farming CD to ensure that the cooperative farming program "will not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the refuge[s]" by disallowing the preventable use of agricultural pesticide products in the Wheeler Complex. 16 U.S.C. § 668ee(1); 50 C.F.R. § 25.12; 603 FW 2, § 2.11(B). In short, the continued use of toxic chemical pesticides for discretionary conventional agricultural purposes will not contribute to the biological integrity, diversity, and environmental health in the Wheeler Complex, and must be discontinued.

PETITIONERS

The Center for Biological Diversity is a non-profit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. For many years, CBD has worked to protect imperiled plants and wildlife, open spaces, and air and water quality, as well as to preserve the overall quality of life for people and animals. CBD and its members are especially concerned with the conservation of species and their habitats in the Refuge System, a system of lands designed explicitly for the protection of endangered species and wild places.

The Center for Food Safety is a nonprofit public interest organization that empowers people, supports farmers, and protects the earth from the harmful impacts of industrial agriculture. On behalf of its over 950,000 supporters, CFS seeks to protect human health and the environment by promoting sustainable agriculture while advocating against the use of harmful food production technologies. Since its inception in 1997, CFS has a flagship program on addressing the harms of pesticide use. Since the early 2000s, CFS has worked to protect wildlife refuges from the harms of industrial agriculture, including pesticide use on refuges. CFS and its members are concerned about the harms to species and their habitat that results from the use of harmful toxic pesticides for agricultural purposes. This concern is particularly relevant to the Refuge System which is essential for protecting wildlife and the environment.

Tennessee Riverkeeper is a non-profit, public interest organization dedicated to protecting the Cumberland and Tennessee Rivers and their tributaries from pollution by enforcing environmental laws and educating the public. Riverkeeper monitors polluters and their pollution permits, responds to citizen complaints, and utilizes other methods to further protect these vital rivers and their tributaries. When the organization discovers illegal pollution, Riverkeeper seeks enforcement of environmental laws. The communities of the Cumberland and Tennessee Valleys are all interconnected neighbors upstream and

downstream, and everyone needs clean water, whether you're rich or poor, black or white, Republican or Democrat. Riverkeeper advocates for Alabama's rivers and communities, and fights to protect water quality so that future generations will inherit safe, clean water.

REASONS TO GRANT PETITIONERS' REQUESTED RELIEF

The Wheeler National Wildlife Refuge Complex is comprised of seven refuges spread over 38,000 acres in northern Alabama. *See* Wheeler National Wildlife Refuge Complex: Comprehensive Conservation Plan and Environmental Assessment, 13 (2007) (hereinafter Wheeler CCP). Two of these refuges, the Key Cave and Wheeler National Wildlife Refuges, allow the cooperative farming of over 3,000 acres of refuge lands. Corresponding with that use, in 2016 a combined 58 gallons and 7 pounds of pesticides were applied to approximately 1,090 acres of agricultural crops on those refuges. *See* Wheeler Complex Pesticide Use Spreadsheet, 2014-16 (Att. A). The agricultural pesticides, which include toxic chemicals such as glyphosate, 2,4-D, and dicamba, were used to grow conventional monoculture crops such as soybeans. *Id.* Such pesticide use practices materially interfere with the purposes of these refuges and the mission of the Refuge System, and must be discontinued.

Specifically, as further described below, Wheeler NWR was created in 1938 as a breeding ground for migratory birds and other wildlife. E.O. 7926. It was also established “for use as an inviolate sanctuary . . . for migratory birds.” 16 U.S.C. § 715d; Wheeler Farming CD at 1. The refuge's 37,000 acres comprise the eastern-most wildlife refuge in the Mississippi Flyway and support vast populations of migrating waterfowl and geese, including sandhill cranes, northern bobwhite, and grasshopper sparrows. 72 Fed. Reg. 16812; Wheeler Farming CD at 8-9; Wheeler CCP at 297-308. Due to its ecological significance for globally threatened bird species, Wheeler NWR is considered a category A1 Important Bird Area by BirdLife International and the National Audubon Society.¹ Wheeler also maintains eight sites on the North Alabama Birding Trail. Wheeler CCP at 66.

In total, Wheeler NWR is believed to support more than 285 bird species, including an estimated 20,000 sandhill cranes, as well as a wide variety of mammals, reptiles, amphibians, fish, mussels, snails, and plants. 72 Fed. Reg. 16812; Wheeler CCP at 297-323; Wheeler Farming CD at 9. Federally protected non-bird species that have been documented on or in close proximity to Wheeler NWR, and that may be adversely affected by exposure to agricultural pesticides, include: the endangered gray bat, the endangered Anthony's riversnail, the endangered armored snail, the endangered pink mucket, the endangered rough pigtoe, and the endangered slender campeloma.

In addition, “approximately one third of the eastern experimental population of [federally endangered] whooping cranes” winter on the Wheeler NWR and, as a result, the refuge serves as

¹ *See* National Audubon Society, Important Bird Areas, Wheeler National Wildlife Refuge: Alabama, <https://www.audubon.org/important-bird-areas/wheeler-national-wildlife-refuge> (last visited Sept. 5, 2018); BirdLife International, Wheeler National Wildlife Refuge, <http://datazone.birdlife.org/site/factsheet/wheeler-national-wildlife-refuge-iba-usa> (last visited Sept. 5, 2018); BirdLife International, Global IBA Criteria, <http://datazone.birdlife.org/site/ibacritglob> (last visited Sept. 5, 2018).

“an increasingly important part of the recovery of this endangered species.” Wheeler Farming CD at 9 (emphasis added). The refuge is also “considered an important release site for whooping cranes,” with the “large agricultural fields available on the refuge” – the same fields where agricultural pesticides harmful to cranes are or may be sprayed under the Wheeler Farming CD – making this location “very attractive for releasing whooping cranes.” Wheeler Farming CD at 9, 12-13.

A 30-acre tupelo gum swamp on Wheeler NWR is also designated as a National Natural Landmark. Wheeler CCP at 21. The National Natural Landmarks Program encourages the conservation of sites that contain outstanding biological and geological resources.² Under the program, the Secretary of the Interior designates sites based on their condition, illustrative character, rarity, diversity, and value to science and education.³ The Wheeler tupelo gum “habitat is unique because this tupelo gum swamp occurs in the Interior Low Plateau physiographic region, rather than its usual occurrence in the Gulf Coastal Plain region.” Wheeler CCP at 21.

Further, Key Cave was created in 1997 to preserve the remaining habitat for the endangered Alabama cavefish, a species found exclusively on Key Cave, and to “ensure that the biological integrity of the Key Cave, Collier Cave, and Collier Bone Cave remains intact.” 72 Fed. Reg. 16812. The Alabama cavefish is a small, blind colorless fish that is considered to be one of the rarest of all North American freshwater fish. Wheeler CCP at 52. In addition, the refuge serves as a priority one maternity cave for the federally endangered gray bat, and provides habitat for two species of blind crayfish, the *Procambarus pecki* and *Cambarus jonesi*. 72 Fed. Reg. 16812. The refuge also provides habitat for a variety of migratory and resident wildlife species, including the grasshopper sparrow, northern harrier, and short-eared owl. 72 Fed. Reg. 16812; Wheeler CCP at 297-313, 319-323. At 1,060 acres, Key Cave is situated in a “limestone karst area that contains numerous sinkholes and several underground cave systems.”⁴ 72 Fed. Reg. 16812. Its vulnerable sinkholes are considered to be “an integral component of groundwater recharge to the caves.” *Id.*

Both of these refuges were created for the express purpose of supporting and sustaining wildlife and wildlife habitat, purposes that *cannot* be achieved if the wildlife that depend on these refuges are adversely impacted due to needless pesticide use and exposure. For example, in listing the Alabama cavefish – again, the species that the Key Cave refuge was established to protect – as critically endangered, the Service explicitly observed that “[t]he land immediately above and around Key Cave has numerous sinkholes and water collecting depressions and is in agricultural row-crops. The application of pesticides to these crops may impact the fauna in Key Cave,” and “[g]roundwater contamination represents a major threat to the Alabama cavefish. Most of the probable recharge area for Key Cave is in agricultural production.” 53 Fed. Reg. 37968.

² National Park Service, National Natural Landmarks Program, <https://www.nps.gov/subjects/nnlandmarks/index.htm> (last visited Sept. 5, 2018).

³ *Id.*

⁴ Karst describes landscapes characterized by caves, sinkholes, underground streams, and other features formed by the slow dissolving of bedrock. Karst areas are sensitive to groundwater pollution because contaminants quickly migrate to wells and springs in the porous geology.

The Service cannot reasonably demonstrate that these practices, which allow for the use of agricultural pesticides that are known to be toxic to the wildlife and habitats of the Key Cave and Wheeler Refuges, are compatible with the refuges' purposes and mission of the Refuge System, as required under the Refuge Act. Accordingly, the Service should re-open the comment period and reconsider the terms and scope of its approval in the Wheeler Farming CD.

A. The Cooperative Farming Program, as it has been Approved, is Not a Compatible Use

a. Legal Background

The Refuge System is the world's largest collection of lands set aside specifically for the preservation of fish and wildlife. The National Wildlife Refuge System Administration Act, as amended by the National Wildlife System Improvement Act (collectively Refuge Act), governs the management of all refuges. 16 U.S.C. § 668dd(a)(1). The Act establishes as the mission of the Refuge System "to administer a network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." *Id.* at § 668dd(a)(2). The mission of the Service is further to conserve, enhance, and protect fish and wildlife and their habitats through federal programs. 142 DM 1.1.

Under the Refuge Act, "each refuge shall be managed to fulfill the mission of the system, as well as the specific purposes for which the refuge was established." 16 U.S.C. § 668dd(a)(3)(A). The Act defines the "purposes of the refuge" as the "purpose specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding a refuge, refuge unit, or refuge subunit." *Id.* at § 668ee(10).

Pursuant to this directive, the Service must prepare a comprehensive conservation plan (CCP) for each refuge that is consistent with sound principles of fish and wildlife management and conservation, and revise the plan every 15 years. *Id.* at § 668dd(e)(1)(A), (B). The purpose of a CCP is to provide refuge managers with a comprehensive plan for achieving the refuge's purposes and contributing towards the mission of the National Wildlife Refuge System. 50 C.F.R. § 25.12. In establishing the plan, the Service must ensure public involvement, and that the "programs" it approves for continued use on a refuge are compatible with the purpose of the refuge and the mission of the Refuge System. No refuge use may be allowed unless it is determined to be appropriate and compatible. *Id.* at §§ 668dd(d)(1)(A), (d)(3)(A) (The Service "shall not initiate or permit a new use of a refuge or expand, renew, or extend an existing use of a refuge, unless [it] has determined that the use is a compatible use.").

A "compatible use" is a use of a refuge that, based on "sound professional judgment, [] will not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the refuge." *Id.* at § 668ee(1); *see also* 50 C.F.R. § 25.12. To be compatible, a use must also contribute to the maintenance of the refuge's biological integrity, diversity, and environmental health. 16 U.S.C. § 668dd(a)(4); 601 FW 3, §§ 3.3, 3.7, 3.10, 3.15; 603 FW 2, § 2.5. If the use is a "public or private economic use of the natural resources of any national wildlife refuge," the Service may *only* authorize that use where it "determine[s] that the use

contributes to the *achievement* of the national wildlife refuge purposes or the National Wildlife Refuge System mission.” 50 C.F.R. § 29.1 (emphasis added). An economic use is an “activity on a national wildlife refuge that results in generation of a commodity which is or can be sold for income or revenue or traded for good and services. Examples include: farming[.]” 603 FW 2, § 2.6(N), (Q). Such uses must be reevaluated for compatibility when conditions under which the use is permitted change significantly, if there is significant new information regarding the effects of the use, or at least every 10 years. 16 U.S.C. § 668dd(d)(3)(B)(vii).

Sound professional judgment is limited to mean “a finding, determination, or decision that is consistent with the principles of sound fish and wildlife management and administration, available science and resources, and adherence to the requirements of [the Refuge] Act and other applicable laws.” *Id.* at § 668ee(3); *see also* 603 FW 2, § 2.11(A). In determining whether a use is compatible, the Service must consider the anticipated impacts of the use on the refuge’s purposes and on the mission of the National Wildlife Refuge System. 50 C.F.R. § 26.41(a)(8). Impacts that the Service must consider include direct impacts, “indirect impacts associated with the use,” and cumulative impacts, including “uses of adjacent lands or waters that may exacerbate the effects of refuge use.” 603 FW 2, §§ 2.11(B)(3), 2.12(A)(8)(c). This is because, over time, mounting impacts can become quite substantial, threatening the ability of refuges to be protective of wildlife and enjoyed by “present and future generations of Americans.” 16 U.S.C. § 668dd(a)(2).

The Compatibility Determination must “[d]escribe the specific areas of the refuge that will be used: habitat types and acres involved [and] key fish, wildlife, and plants that occur in or use that habitat,” including other areas that may be affected incidentally. 603 FW 2, § 2.12(A)(6)(b). Uses that are reasonably anticipated “to reduce the quality or quantity or fragment habitats on a national wildlife refuge will not be compatible.” *Id.* at § 2.5(A). When a use is incompatible, the Service will “expeditiously terminate or modify the use to make it compatible.” 50 C.F.R. § 26.41(d); *see also* 16 U.S.C. § 668dd(d)(3)(B)(vi); 603 FW 2, § 2.11(A)(3) (“Under no circumstances (except emergency provisions necessary to protect the health and safety of the public or any fish or wildlife population) may [the Service] authorize any use not determined to be compatible.”). However, even when a use is compatible, the Service may decline to allow it. 603 FW 1, § 1.8; 603 FW 2, §§ 2.11(G), 2.15. The Service further has the authority to reevaluate the compatibility of a use “at any time.” 603 FW 2, § 2.11(H)(1); *see also id.* at § 2.11(H)(4),(5).

b. Neither the Compatibility Determination for Cooperative Farming Nor the Comprehensive Conservation Plan and Environmental Assessment for the Wheeler National Wildlife Refuge Complex Demonstrate that the Cooperative Farming Program, as it has been Approved, is an Allowable Compatible Use

Refuges are natural treasures for the conservation of wildlife. The Refuge System is to be maintained for wildlife and wildlife conservation, with an emphasis on “the long-term maintenance of healthy ecosystems” on each refuge. Wheeler CCP at 21. To satisfy this purpose, the Service can only allow economic, agricultural practices on a refuge if they support wildlife objectives, contribute to the *achievement* of the refuge’s purposes, and will not otherwise “materially interfere with or detract from the fulfillment” of the refuge. 16 U.S.C. § 668ee; *id.* at

§ 668dd(a)(4)(D); 50 C.F.R. § 25.12(a); *id.* at § 29.1; 601 FW 3, § 3.7(A); 603 FW 2, § 2.11(B). Yet, in January 2018 the Service published a draft compatibility determination for cooperative farming on the Wheeler Complex that fails to satisfy these basic requirements. Instead, in clear violation of the Refuge Act, the Wheeler Farming CD continues to allow for the use of hazardous chemical pesticides such as dicamba, glyphosate, and 2,4-D by cooperative farmers for the purpose of treating agricultural “crop pests.” Because that use is incompatible with the purposes of the refuges and the mission of the Refuge System, the Wheeler Farming CD should be reconsidered and the Service should discontinue all such nonessential uses of agricultural pesticides.

- i. The agricultural pesticide uses currently allowed on the Wheeler Complex materially interfere with the purposes of refuges in the Complex and the mission of the Refuge System.*

Cooperative farming is a discretionary economic activity. Wheeler Farming CD at 2. The Service may only authorize a discretionary economic use of a refuge if it meets the heightened standard set out in 50 C.F.R. § 29.1, which is that the use “must contribute[] to the achievement of the national wildlife refuge purposes or the National Wildlife Refuge System mission.” The Service attempts to comply with this standard by claiming that “the primary purposes of farming on Wheeler NWR is to ensure that waterfowl and cranes, including listed species such as the whooping crane, can meet their foraging needs which enhances their body condition and increases their chances of surviving the winter and breeding.” Wheeler Farming CD at 9. On the surface, this logic may seem attractive. Upon a deeper scratch, however, it is clear that these goals cannot be achieved if the birds and other species relying on these refuge lands for forage, rest, and breeding are being exposed to agricultural pesticides harmful to their health through consumption and direct or indirect exposure.

It is well recognized that the use of agricultural pesticides poses a significant risk to species, water quality, and the environment. The Service has approved of the use of pesticide 2,4-D, for example, to address “crop pests” on Wheeler NWR. *See* Wheeler Complex Pesticide Use Spreadsheet, 2014-16 (Att. A). 2,4-D was also approved for use on Key Cave in at least 2014. *Id.* According to the U.S. Environmental Protection Agency (EPA), the

risk assessment for 2,4-D indicates potential risks of direct effects to listed terrestrial plants, *birds*, reptiles, terrestrial-phase amphibians, *mammals*, terrestrial invertebrates, *fish*, aquatic invertebrates, and aquatic plants on some of its registered use sites. Listed species of all taxa may also be affected through indirect effects because of the potential for direct effects on listed and non-listed species upon which such species may rely. Potential direct effects on listed terrestrial plants, *birds*, reptiles, terrestrial-phase amphibians, *mammals*, terrestrial invertebrates, *fish*, aquatic invertebrates, and aquatic plants from the use of 2,4-D may be associated with modification of Primary Constituent Elements (PCEs) of designated critical habitats, where such designations have been made.

Preliminary Ecological Risk Assessment for Registration Review of 2,4-D, 69-70 (2016) (Att. C). The use of 2,4-D may, thus, cause a direct (as well as indirect and cumulative) effect on arthropod-reliant terrestrial bird species such as the whooping crane, as well as on birds that rely

on 2,4-D treated plants for forage. *Id.* at 47-48. The potential for chemical contamination of the karst formation on Key Cave, which is essential to the critically endangered Alabama cavefish, additionally poses threats to the health and continuing reproductive capacity of the cavefish and other aquatic species. 2,4-D is also volatile and highly prone to drift, which heightens its risk of impacting non-target plants and other resources, including insects and wildlife. *Id.* at 64-67.

Between 2014 and 2016 the pesticide dicamba was also approved for the purposes of combating “crop pests” on Wheeler NWR, as well as on Key Cave. *See* Wheeler Complex Pesticide Use Spreadsheet, 2014-16 (Att. A). Dicamba is a broad-spectrum systemic herbicide that mimics the plant hormone auxin, causing uncontrolled cell division and growth and, ultimately, death or injury for broadleaf plants.⁵ According to the EPA, small birds and mammals could exceed the agency’s risk of concern for dicamba if they foraged on plants or insects in treated fields. *See* Reregistration Eligibility Decision for Dicamba and Associated Salts, 17-20 (2009) (Att. D). Dicamba additionally has the potential for causing risks to endangered birds, mammals, and non-target plants, with “mammals . . . potentially . . . at risk for developmental/reproductive effects or for direct effects on foraging behavior when chronically exposed to dicamba.” *Id.* at 18. Like 2,4-D, dicamba is also volatile and highly prone to drift, a trait that has earned it a reputation as the “most controversial agrochemical product launched in the past decade.”⁶ In the 2017 growing season, more than 3 million acres of soybean fields were reportedly damaged by drift or volatilization of ground-applied dicamba – 4 percent of the total U.S. soybean crop. *See* EPA, Dicamba/Auxin Formulations - An update on label changes in response to reported incidents, 4 (2017) (Att. E).

Additional pesticides approved for use on Wheeler NWR to treat “crop pests” include: bifenthrin, carbaryl, simazine, and flupyradifurone, among others. Each of these pesticides also poses the risk of significant direct and indirect effects on birds, including by both direct exposure and by reducing or tainting the bird’s food sources. *See, e.g.,* EPA, Ecological Risk Management Rationale for Pyrethroids in Registration Review, 20-25 (2016) (Att. F); EPA, Revised Reregistration Eligibility Decision for Carbaryl, 46-49, 52 (2004) (Att. G); EPA, Preliminary Ecological Risk Assessment for Simazine, 101-02 (2016) (Att. H); EPA, Environmental Fate and Ecological Risk Assessment for Foliar, Soil Drench, and Seed Treatment Uses of the New Insecticide Flupyradifurone, 94-96, 90-91 (2014) (Att. I). Neither carbaryl or simazine, for example, are approved for use in the European Union because of their high risk profiles. *See* European Commission, Carbaryl, Status (Att. P); European Commission, Simazine, Status (Att. Q).

There is, therefore, an obvious conflict between the continued use of these pesticides – many of which are known to cause direct, indirect, and cumulative effects on wildlife and plants – and the purposes of Key Cave and the Wheeler NWR. As the Service makes clear in its guidelines for determining compatibility, “the take of even one individual of a threatened or

⁵ University of California, Herbicide Symptoms, Synthetic Auxins, http://herbicidesymptoms.ipm.ucanr.edu/MOA/Synthetic_Auxins/ (last visited Aug. 4, 2018).

⁶ Dan Nosowitz, *These Maps Show How Much Farmland Has Been Damaged by Dicamba Drift*, Modern Farmer (Nov. 1, 2017), available at <https://modernfarmer.com/2017/11/maps-show-much-farmland-damaged-dicamba-drift/>; see also Danny Hakim, *Monsanto’s Weed Killer, Dicamba, Divides Farmers*, N.Y. Times (Sept. 21, 2017), available at <https://www.nytimes.com/2017/09/21/business/monsanto-dicamba-weed-killer.html>.

endangered species [including but not limited to the whooping crane or Alabama cavefish] could significantly impact the refuge's ability to manage for or perpetuate that species." 603 FW 2, § 2.11(B)(3).

Indeed, for the Wheeler NWR, which was established for the conservation of lands as a refuge and breeding ground for migratory birds including the federally endangered whooping crane, pesticide risk assessments show that threats to birds include, but are not limited to: harm through direct ingestion of the pesticide, which the bird can pick up while searching for seeds and other forage; consumption of insects or other small animals that have been killed or otherwise exposed to pesticides, leading to secondary poisoning of the bird; and direct ingestion of pesticide-treated seeds. For pesticides that persist in the environment, are applied at high rates, or are applied at the same time as other synergistic pesticides, harm may be amplified, threatening not only the exposed bird but also other animals in the food chain and the ecosystem. Specific effects of pesticide use on birds can range from starvation due to a decline in insects and other food sources to endocrine disruption and dysfunction to toxicity and potential mortality.

On Key Cave, where croplands constitute approximately 28 percent of the refuge's acreage, the connection between the refuge's purposes and the benefits of the cooperative farming program is even more tenuous. *See* Wheeler Farming CD at 18. Key Cave was "established for the purposes of: protecting the biological integrity of Key Cave, Collier Cave, and Collier Bone Cave; and to ensure that their common aquifer remains intact," and for the preservation of the endangered Alabama cavefish and gray bat. Wheeler Farming CD at 10. The refuge has never been considered a "waterfowl refuge," and, in fact, waterfowl management on this refuge is considered to be "virtually impossible." *Id.* at 10. Instead, while ostensibly for the purposes of generalized wildlife support, the continued use of agriculture – and agricultural pesticides – on these refuge lands appears to primarily be the result of historic and economic concerns, not the fulfillment of the purposes of the refuge or the Refuge System. *Id.* at 10 (discussing that Key Cave is an "unfunded" refuge and that a priority has been ensuring that the farming program remains "economically feasible for a cooperative farmer").

While Petitioners are sympathetic to the Service's economic constraints, those constraints cannot outweigh the wildlife needs on Key Cave. The federally endangered gray bat relies on Key Cave as a priority one maternity cave, with approximately 12,000 to 13,000 young gray bats produced by this maternity colony annually, a number that is believed to be on the decline. Wheeler CCP at 104. Indeed, the gray bat "has become of particular concern" since its listing under the Endangered Species Act, with "[i]ts population decline . . . believed to be due primarily to human disturbances such as: vandalism, *excessive pesticide use, overall insect prey decline due to pollution*, and cave commercialization." Wheeler CCP at 77 (emphasis added). Similarly, the Alabama cavefish – the other federally endangered species that Key Cave was established to protect – is believed to be experiencing population stress because "[t]he land immediately above and around Key Cave has numerous sinkholes and water collecting depressions and is in agricultural row-crops," meaning that "[m]ost of the probable recharge area for Key Cave is in agricultural production" and "[t]he application of pesticides to these crops may impact the fauna in Key Cave." 53 Fed. Reg. 37968. As a result, "degradation of water quality is a major concern" for Alabama cavefish populations. Wheeler CCP at 77; *see also* 53

Fed. Reg. 37968 (“Groundwater contamination represents a major threat to the Alabama cavefish.”).

In addition to the pesticide harms already identified, the pesticide clethodim, which appears to have been approved for use on Key Cave, could have direct, negative effects on fish – such as the Alabama cavefish – upon exposure. EPA, Clethodim: Preliminary Ecological Risk Assessment for Registration Review, 45 (2014) (Att. J). And pyrosulfoxone, which also appears to have been approved for use on Key Cave, could have direct, negative effects to insect eating mammals – such as the gray bat. EPA, New Chemical Registration, Ecological Risk Assessment: Pyrosulfoxone, 99 (2011) (Att. K). It is difficult to understand, therefore, how the Service can substantiate a finding of compatibility for a discretionary economic practice that continues to rely on pesticide uses that may be directly attributed to declines in the species’ populations that the refuge was established to protect.

The continued use of harmful chemical pesticides in the cooperative farming program is also inconsistent with public safety because of the potential for human exposure as a result of direct application and drift – for example, with dicamba and 2,4-D – as well as from indirect exposure via waters or other environmental resources impaired by pesticide use. *See* 16 U.S.C. § 668dd(d)(3)(A) “(the Secretary shall not . . . expand, renew, or extend an existing use of a refuge, unless the Secretary has determined that the use is a compatible use *and that the use is not inconsistent with public safety.*”) (emphasis added); 603 FW 2, § 2.10(D)(e). For example, one of the pesticides approved for agricultural purposes on both Key Cave and Wheeler NWR in 2016, as well as other years, was glyphosate. *See* Wheeler Complex Pesticide Use Spreadsheet, 2014-16 (Att. A). For wildlife, glyphosate use is a concern because of the high rate of the pesticide and its metabolites being found in air, rainfall, and surface water samples near sites after application. *See* Center for Biological Diversity, *Lost in the Mist: How Glyphosate Use Disproportionately Threaten California’s Most Impoverished Counties*, 2 (2015) (Att. R). Glyphosate-resistant crops have also been shown to contain high levels of residual pesticides, which means that glyphosate is likely being transferred into forage materials used by wildlife and birds on refuges. *Id.* Further, for humans glyphosate has been identified as “probably carcinogenic to humans” by the World Health Organization’s International Agency for Research on Cancer.⁷ Indeed, in 2017 the State of California became the first state to list glyphosate as a known human carcinogen,⁸ a decision that was upheld by the California Appellate Court in April 2018.⁹ The pesticide, which faces increased use if glyphosate-resistant GE crops are introduced

⁷ WHO, *Evaluation of Five Organophosphate Insecticides and Herbicides* (Mar. 20, 2015), available at <http://www.iarc.fr/en/media-centre/iarcnews/pdf/MonographVolume112.pdf>; *see also* Holly Yan, *Jurors Give \$289 Million to a Man They Say Got Cancer from Monsanto’s Roundup Weedkiller*, CNN (Aug. 11, 2018), available at <https://www.cnn.com/2018/08/10/health/monsanto-johnson-trial-verdict/index.html> (describing an August 2018 trial and jury verdict in which a non-Hodgkin’s lymphoma cancer patient, Mr. Johnson, was awarded a verdict of \$289 million after the jury found glyphosate-based Roundup to be a “substantial contributing factor” to his cancer. As the article further details, “[u]nder California law, that means Mr. Johnson’s cancer would not have occurred but for his exposure to Roundup,” Monsanto spokeswoman Lord said.”).

⁸ CA EPA, Office of Environmental Health and Human Assessments, https://oehha.ca.gov/proposition-65/cnr/glyphosate-listed-effective-july-7-2017-known-state-california-cause-cancer#_ftn3 (last visited Sept. 5, 2018).

⁹ Matthew Renda, *CA Appeals Court Hands Monsanto a Legal Setback*, Courthouse News (Apr. 19, 2018), available at <https://www.courthousenews.com/ca-appeals-court-hands-monsanto-a-legal-setback/>.

into the refuges, has increasingly been additionally identified as being reprotoxic due to its endocrine disruption effects in humans.¹⁰

Finally, around the Wheeler Complex “[w]ater quality is a major human and wildlife concern because of the number of people in the area that depend on drinking water from the Tennessee River or its tributaries and the number of fish and wildlife species that are directly dependent on high water quality.” Wheeler CCP at 117. Water quality monitoring by the U.S. Geological Service (USGS) has identified a variety of agricultural pesticides already in surface waters near Wheeler NWR. Wheeler CCP 83. Therefore, discontinuing the preventable use of pesticides for agricultural purposes on the Wheeler Complex will help to prevent further water quality degradation while supporting both public safety and wildlife health.

In sum, there is a clear conflict between the use of these pesticides – which can cause direct effects to fish, mammals, birds, plants, and humans – and the purposes of these refuges – which are to protect federally endangered wildlife and for the conservation of lands as a refuge and breeding ground for migratory birds, including the federally endangered whooping crane. As the Service’s compatibility guidelines establish, “[i]nherent in fulfilling the System mission is not degrading the ecological integrity of the refuge. Compatibility, therefore, is a threshold issue, and the proponent(s) of any use or combination of uses” bears the burden of demonstrating that compatibility. 603 FW 2, § 2.11(B)(1). Here, that compatibility was not established. Indeed, there is simply nothing that the Service can rely on to demonstrate that toxic pesticide uses, largely for “crop pest” management, are consistent with available science and resources, and will contribute to the achievement of the purposes for the Key Cave or Wheeler refuges and the Refuge System itself.

- ii. *The Service’s reliance on the Wheeler National Wildlife Refuge Complex Comprehensive Conservation Plan, Environmental Assessment, and Finding of No Significant Impact; EPA’s pesticide approval process under the Federal Insecticide, Fungicide, and Rodenticide Act; and its own pesticide use proposal process is improper and does not satisfy its duties under the Refuge Act.*

In an attempt to substantiate its approval of these practices, the Service relies on the 2007 Wheeler National Wildlife Refuge Complex Comprehensive Conservation Plan (Wheeler CCP); Wheeler Environmental Assessment, and Finding of No Significant Impact (Wheeler EA and FONSI); EPA’s pesticide approval process under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); and the its own pesticide use proposal (PUP) process. Wheeler Farming CD at 7-8, 12-13 (“Cooperative farmers are allowed to use EPA approved pesticides by way of a closely monitored Service-wide Pesticide Use Proposal System. These pesticides are reviewed and approved by the EPA under the Federal Insecticide, Fungicide, and Rodenticide Act” where EPA “conducts risk assessments to ensure that approved pesticides will not generally cause unreasonable adverse effects on the environment.”). None of these documents or

¹⁰ Gasnier et al, *Glyphosate-based Herbicides are Toxic and Endocrine Disruptors in Human Cell Lines*, 262(s) Toxicology 184, 184 (Aug. 21, 2009), available at <https://www.ncbi.nlm.nih.gov/pubmed/19539684>; see also Arthur Neslen, *Glyphosate Shown to Disrupt Microbiome ‘At Safe Levels,’ Study Claims*, The Guardian (May 16, 2018), available at <https://www.theguardian.com/environment/2018/may/16/glyphosate-shown-to-disrupt-microbiome-at-safe-levels-study-claims>.

processes, however, sufficiently analyze or reduce the effects of pesticides to wildlife populations on the Wheeler and Key Cave refuges, or otherwise identify and analyze how these pesticide use practices will contribute to the purposes of these refuges.

First, the Service “will usually complete compatibility determinations as part of the” CCP. 603 FW 2, § 2.11(F). That was not done here, and because the treatment paid to agricultural pesticide use by the Wheeler CCP and Wheeler EA and FONSI is limited, further analysis is necessary to establish compatibility.

The Wheeler CCP does not reasonably analyze or discuss the impacts of pesticide use on cooperative farms. The Wheeler CCP was published in September of 2007. 72 Fed. Reg. 52574. As the Service reiterated in that CCP, “[t]he wildlife and habitat vision for the national wildlife refuges stresses that wildlife comes first; that ecosystems, biodiversity, and wilderness are vital concepts in refuge management; that refuges must be healthy and growth must be strategic; and that the Refuge System serves as a model for habitat management.” Wheeler CCP at 9. In the Wheeler CCP, the Service did not conduct a renewed compatibility determination for cooperative farming, instead relying on a prior planning effort that it conducted in 2004. Wheeler CCP at 269. It further did not conduct a substantive analysis of the impacts to resources of pesticide use for agricultural purposes, instead largely relying on the analysis in the Wheeler EA and FONSI (which, as discussed below, additionally did not conduct a substantive analysis of the impacts of agricultural pesticide use).

What the Wheeler CCP does establish is that the “goal of the program [on the Wheeler NWR] is to provide food and cover for migratory birds and other resident wildlife.” Wheeler CCP at 36. As was previously discussed, the Service cannot achieve this goal if the wildlife, including the whooping crane, that are utilizing these fields and relying on this program for forage, rest, and breeding are avoidably being exposed to agricultural pesticides that are known to be toxic to birds and other resident wildlife as a result of that reliance. On Key Cave, which provides that the crops “support a variety of wildlife,” the result is no different. *Id.* at 45.

Next, the Wheeler Farming CD relies almost exclusively on the 2007 Environmental Assessment conducted with the Wheeler CCP for its analysis of anticipated impacts and to support its finding that no significant impacts were expected to result from the implementation of the proposed action, including the cooperative farming program. Wheeler Farming CD at 11-12. However, **the EA and FONSI that was prepared under the National Environmental Policy Act (NEPA) as part of the Wheeler CCP review process does not reasonably identify, discuss, or attempt to mitigate the use of pesticides in cooperative farming practices.** *See* Wheeler CCP at 149-201, 369-375.

Indeed, while impacts to water quality from herbicide use are mentioned in the Wheeler EA and FONSI, those impacts are only identified as it relates to the complex’s activities to control exotic and invasive plants, not the agricultural use of pesticides in the cooperative farming program. Wheeler CCP at 194. And, even then, the Service merely mentions this use as causing an “unavoidable impact;” it does not analyze the impact in any more depth, nor does it extend that concern to addressing the impacts of this use to exposed wildlife and migratory birds. *Id.*

The closest the Wheeler EA and FONSI gets to analyzing the anticipated effects of pesticide use in the cooperative farming program is to notate, in its cumulative impacts section, that “other human activities such as farming must use best management practices to minimize negative cumulative impacts on water quality in the Tennessee River Valley.” Wheeler CCP at 196. This does not identify, let alone analyze, the specific cumulative environmental effects of agricultural pesticide use on cooperative farming operations. It also categorically does not analyze the direct and indirect effects of that use on the environment, wildlife, and public health. This limited identification is insufficient under the Refuge Act, which requires that the Service not only consider the anticipated impacts of the use on the refuge’s purpose and on the mission of the National Wildlife Refuge System generally, 50 C.F.R. § 26.41(a)(8), but also to specifically consider direct impacts, “indirect impacts associated with the use,” and cumulative impacts, including “uses of adjacent lands or waters that may exacerbate the effects of refuge use,” 603 FW 2, §§ 2.11(B)(3), 2.12(A)(8)(c).

Further, because a compatibility determination for cooperative farming was not conducted at the same time the Service prepared the Wheeler CCP, the details of this compatibility determination were not reasonably taken into consideration in analyzing the CCP or EA and FONSI, nor were they included in the public review process. Nevertheless, even at the time this limited CCP process was conducted, “[s]everal negative comments were . . . recorded about the use of pesticides on the [Wheeler] refuge,” including as it relates to the cooperative farming program. Wheeler CCP at 235, 241.

To support its finding of compatibility, the Wheeler Farming CD next relies, in part, on EPA’s pesticide approval process under FIFRA, 7 U.S.C. § 136 *et seq.* Wheeler Farming CD at 12. EPA’s FIFRA review and approval process was not discussed in the Wheeler CCP or Wheeler EA and FONSI, and was not meaningfully analyzed in the Wheeler Farming CD. *Id.* (identifying that “[c]ooperative farmers are allowed to use EPA approved pesticides” that were “reviewed and approved by EPA under” FIFRA). **The Service’s reliance on the FIFRA process is improper because it does not mitigate concerns related to pesticide use in the cooperative farming program nor does it otherwise substantiate the Service’s compatibility determination.**

Under FIFRA, Congress charged EPA with registration, reregistration, registration review, and ongoing oversight of chemicals for use as insecticides, herbicides, fungicides, rodenticides, fumigants, and other pesticides in the United States. 7 U.S.C. §§ 136-136y. EPA may register a pesticide after finding (among other things) that application of the pesticide will not cause “unreasonable adverse effects on the environment.” *Id.* at § 136a(c)(5). FIFRA defines “unreasonable adverse effects on the environment” as “any unreasonable risk to man or the environment, taking into account the *economic, social, and environmental costs and benefits* of the use of any pesticide.” *Id.* at § 136(bb) (emphasis added). This cost-benefit-based analysis and approval process stands in sharp contrast to the requirements of the Refuge Act, which demands that the purposes of a refuge and the mission of the Refuge System come first and not be subject to an economic balancing test.

Specifically, in determining a pesticide’s “unreasonable adverse effects on the environment,” FIFRA requires EPA to take into account not only harm to the environment, but also the economic costs and benefits associated with its use. That is, EPA weighs the costs to

human health and the environment that could result from pesticide approval and use against the economic costs and benefits of that approval. In other words, FIFRA “explicitly accommodates agriculture’s need for pesticides—even environmentally risky pesticides.” *Merrell v. Thomas*, 807 F.2d 776, 780 (9th Cir. 1986) (Congress amended FIFRA to increase “agriculture’s influence on registration decisions”). The Refuge Act, in contrast, rigidly establishes the central mission of the Refuge System to be “to administer a network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States.” *Id.* at § 668dd(a)(2). Further, the Act only allows for uses that are “compatible uses,” meaning that the use “will not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the refuge.” *Id.* at § 668ee(1); *see also* 50 C.F.R. § 25.12; 603 FW 2. And if the use is a “public or private economic use of the natural resources of any national wildlife refuge,” the Service may *only* authorize the use where it “determine[s] that the use contributes to the achievement of the national wildlife refuge purposes or the National Wildlife Refuge System mission.” 50 C.F.R. § 29.1 (emphasis added).

Appreciating those differences under FIFRA and the Refuge Act is fundamental to understanding why the determination that EPA reaches in registering a pesticide does not necessarily rise to the protective standard that the Service must comply with in administering the Refuge Act. Therefore, because the FIFRA review and registration process is not designed to ensure that the pesticide use will contribute to the achievement of the mission of the Refuge Act, it cannot be relied upon to support compatibility, especially without any additional site-specific analysis related to impacts from agricultural pesticides on the Wheeler Complex. Thus, as a matter of law, the Service cannot solely rely on EPA’s FIFRA assessment to negate its duties to consider and analyze pesticide use under the Refuge Act.

The Wheeler Farming CD further relies in part on the PUP process for support for its finding of compatibility for this program with pesticide uses. Wheeler Farming CD at 7-8, 12-13. The PUP process was not discussed in the Wheeler CCP or Wheeler EA and FONSI, and the details of that approval process are restricted in the Wheeler Farming CD to a generalized confirmation that the Service intends to use the PUP process – a process that is not subject to public review and is completely separate from the CCP and CD process – to approve agricultural pesticide uses on the Wheeler and Key Cave refuges. *Id.* **That PUP process, however, does not mitigate concerns related to pesticide use in the cooperative farming program or otherwise substantiate the Service’s compatibility determination.**

Specifically, to use pesticides on the Key Cave and Wheeler refuges the applicator must receive prior approval through the PUP approval process. “A PUP is an online document that identifies important considerations related to a pesticide application.” 569 FW 1, § 1.11. A PUP is conducted for each individual pesticide, and describes the type of chemical proposed for use, the pest intended for control, the general treatment site, and any sensitive areas near the treatment site that may need special attention. *Id.* at § 1.11(C) (“Approvals and disapprovals only apply to the specific application regime, time, location, pesticide, and target pest.”). The Service explains that its reliance on the PUP process is reasonable because it “approves only those [pesticides] that are shown not to impact fish and wildlife resources.” Wheeler Farming CD at 7. This statement is misleading, however, because the PUP process does not independently

determine if and how a pesticide will negatively impact fish and wildlife, but rather relies heavily on protocols for ecological risk assessment established by the EPA under FIFRA, as discussed, and EPA's flawed 2004 Ecological Risk Assessment Process (EPA's Risk Assessment process) in approving PUPs. *See* EPA, Overview of the Ecological Risk Assessment Process in the Office of Pesticide Programs, U.S. Environmental Protection Agency: Endangered and Threatened Species Effects Determinations (2004) (Att. L). The process further does not consider the synergistic effects to species of approving multiple pesticides for use at one time.

Indeed, as the National Academies of Sciences determined in 2013, EPA's Risk Assessment process is fundamentally flawed. *See Assessing Risks to Endangered and Threatened Species from Pesticides* (NAS Report) (Att. M). As background, the NAS Report was commissioned by the EPA, Service, National Marine Fisheries Service (NMFS), and the U.S. Department of Agriculture (USDA) to give scientific and technical insight into how these federal agencies can work together to assess the risks and effects to endangered and threatened species from the continued use and approval of pesticide products. In so doing, the NAS report was highly critical of EPA's current approach, concluding that:

- EPA's "concentration-ratio approach" for its ecological risk assessments "is ad hoc (although commonly used) and has unpredictable performance outcomes;"
- "[Risk Quotients] are not scientifically defensible for assessing the risks to listed species posed by pesticides or indeed for any application in which the desire is to base a decision on the probabilities of various possible outcomes;" and
- "The [Risk Quotient] approach does not estimate risk . . . but rather relies on there being a large margin between a point estimate that is derived to maximize a pesticide's environmental concentration and a point estimate that is derived to minimize the concentration at which a specified adverse effect is not expected."

EPA's Risk Assessment process does not direct the regulating agency to account for differences in pesticide sensitivity within or between species. For example, when measuring risk to humans, regulating agencies such as the EPA and Food and Drug Administration (FDA) will often apply uncertainty factors to offset the assumptions that lab mice or rats are appropriate surrogates for human toxicity. Since lab animals are usually inbred strains with few genetic differences between individuals, the EPA will apply a 10x uncertainty factor to account for the lack of genetic differences between test subjects. Another 10x uncertainty factor will then be additionally applied to account for probable differences in sensitivities between the test species and humans, effectively reducing the toxic dose by a factor of 100. In the 2004 Overview Document, and in EPA's general ecological risk assessment process, no uncertainty factors are used for any species of plants or animals. That means that the sensitivity of the surrogate animal (the animal used in experiments to estimate toxicity) is assumed to be identical to every species in its taxa (and occasionally other taxa as well). 2004 EPA Risk Assessment at 32 (Att. L). As an illustration: under this approach, a mouse is assumed to have the same sensitivity to a pesticide as a weasel, a bear, or a whale. The lack of appropriate uncertainty/offset factors will, thus, likely overestimate toxicity to some species and underestimate it for others.

EPA's Risk Assessment process also directs the regulating agency to use LC₅₀, LD₅₀, ED₅₀ or EC₅₀ – which are concentrations of pesticide required to negatively impact 50 percent of the test population – as the acute toxicity threshold. 2004 EPA Risk Assessment at 42 (Att. L).

Under this approach, the endpoint that is often used is mortality. Using mortality as an endpoint makes the acute effects threshold the amount of pesticide required to kill 50 percent of the test population. In setting such a high endpoint, many species' impacts may not be captured in the acute toxicity threshold, which makes the thresholds of limited value to species health and protection. These limitations are especially concerning in light of the aforementioned potential to underestimate risk by not using uncertainty/offset factors.

EPA's Risk Assessment process further does not properly consider the effects of mixtures and synergistic effects, a failure that is also specifically present in the Service's PUP review process. Pesticides are often encountered in the environment mixed with other pesticides or with other chemicals. Some pesticide products can also contain multiple active ingredients. As is commonly known, the combined effect of these complex mixtures can significantly impact toxicity. Yet, EPA's process only directs the regulating agency to examine toxicity from exposure to a single active ingredient or formulated product. 2004 EPA Risk Assessment at 29-30 (Att. L).

Similarly, EPA's Risk Assessment process, like the Service's PUP process, does not properly consider the cumulative effects of pesticide use. Generally, for pesticides that act by the same mode of action and may be encountered at the same time in the environment, the EPA recommends using "dose addition" to estimate toxicity.¹¹ The agency currently does this when analyzing risk of pesticides to humans. EPA's Ecological Risk Assessment process does not require this additional analysis. EPA's Risk Assessment process further does not consider exposure through inhalation of pesticides, exposure to dusts contaminated with pesticides, dermal exposure, or exposure from consumption of dew or other water on treated surfaces, and does not evaluate indirect effects associated with pesticide applications.

The PUP approval process is also not open to the public or subject to public review and comment.

Under the Service's guidelines for making and documenting compatibility determinations, "if information available to the refuge manager is insufficient to document that a proposed use is compatible, then the refuge manager would be unable to make an affirmative finding of compatibility, and [the Service] must not authorize or permit the use." 603 FW 2, § 2.11(E) (citing *id.* at § 2.12(A)(8)); *see also* 50 C.F.R. § 26.41. To the Conservation Groups' knowledge, despite years of pesticides being approved for agricultural purposes on these refuges, no comprehensive or systematic studies have been conducted to determine the extent of impact from these practices to wildlife resources. Without that information, the Service cannot – especially given the lack of scientific reliability of the sources that it is otherwise relying on – reasonably assert that the continuation of these practices will contribute to the achievement of the purpose of the Wheeler and Key Cave refuges or the mission of the Refuge System.

Cooperative farming should not have been authorized without additional amendment to the program to ensure that the non-essential use of agricultural pesticides is discontinued. The Service should, therefore, exercise its authority to reevaluate and reconsider the Wheeler Farming CD to address these concerns.

¹¹ See generally EPA, *Framework for Cumulative Risk Assessment* (2003), available at https://www.epa.gov/sites/production/files/2014-11/documents/frmwrk_cum_risk_assmnt.pdf.

B. The Service Must Reconsider and Reevaluate the Compatibility Determination for Cooperative Farming on the Wheeler Complex Due to Significant New Information Related to Neonicotinoid and GE Crop Usage

The Service further has an ongoing obligation under the Refuge Act to ensure that approved refuge uses *remain* compatible with the purposes of the refuge and the mission of the refuge system. 16 U.S.C. §§ 668dd(d)(1)(A), (d)(3)(A). When the conditions of a permitted use change significantly or when significant new information arises that calls into question the ability of an approved use to maintain compatibility under the Act, the Service must reevaluate its compatibility determination to ensure continued accuracy and consistency with the Act's objectives. *Id.* at § 668dd(d)(3)(B) (the Service's compatible use assessment "shall . . . require, after an opportunity for public comment, reevaluation of each existing use . . . if conditions under which the use is permitted change significantly or if there is significant new information regarding the effects of the use . . . to ensure that the use remains a compatible use."); 603 FW 2, § 2.11(H). During reevaluation, the compliance standard for an economic use, such as cooperative farming, remains heightened, and compatibility can only be found if the use "contributes to the achievement of the national wildlife refuge purposes or the National Wildlife Refuge System mission." 50 C.F.R. § 29.1. Moreover, in conducting a reevaluation, the Service must take a "fresh look" at its compatibility evaluation, prepare a new compatibility determination, and ensure that the updated determination is made available to the public for review and comment. 16 U.S.C. § 668dd(d)(3)(B); 603 FW 2, §§ 2.11(H), (I).

Significant new information has arisen since the Wheeler Farming CD was completed that further calls into question the ability of the cooperative farming program to maintain compatibility under the terms of the Refuge Act. Specifically, on August 2, 2018 – eight months after the Wheeler Farming CD was completed – the Service abruptly withdrew a prior decision that had formally phased-out and discontinued the use of neonicotinoid pesticides (neonics) and GE crops in the Refuge System. *See* Memorandum from National Wildlife Refuge Principle Deputy Director, Gregory Sheehan, to Service Directorate regarding the Withdrawal of Memorandum Titled, "Use of Agricultural Practices in Wildlife Management in the National Wildlife Refuge System" (July 17, 2014) (Att. B). As a result of that agency action, previously prohibited neonic and GE crop uses may now be resumed on national wildlife refuges throughout the country. Wheeler was specifically identified in the memorandum as being open for reintroduction of these uses.

As discussed further above, pesticides – including neonics and pesticides to which GE crops are genetically engineered to be immune – are known to injure and kill endangered wildlife, migratory waterfowl, and their habitats, and, as such, their use is not compatible with the purposes of the Wheeler and Key Cave refuges or the mission of the Refuge System. Those uses, therefore, must be considered in a compatibility determination, newly made available for public notice and comment.

Exposure to neonics, for example, is harmful to pollinators and birds, including birds that Wheeler was established to protect. Neonics are neurotoxic pesticides that function by disrupting normal functioning of the central nervous system in invertebrates, resulting in nervous system

stimulation and eventually paralysis and death.¹² Vertebrates, such as birds, can experience similar toxicity issues, resulting in issues ranging from decreases in fat stores and body mass, to reproductive effects, to failure to orient correctly during migration.¹³

All neonicotinoids are systemic, meaning the chemicals can be taken up through the plant roots, stems, and leaves and translocate throughout the plant. Therefore, once one part of a plant is exposed to a neonicotinoid, the entire plant can contain residues of the chemical and can cause potential toxicity to animals that feed on it. Neonicotinoids are also persistent in the environment with half-lives that can range from 148 days to more than three years.¹⁴ This persistence and high water solubility make the pesticides highly susceptible to runoff into water bodies and harm to water quality and aquatic species.¹⁵ Indeed, more than 80 percent of surface water studies from around the world have identified neonic concentrations that exceed threshold levels of harm to aquatic invertebrates.

In addition to being sprayed on plants or soils, neonics can also be used as a seed coating. Seeds coated in neonics pose a direct risk to seed eating birds because, after planting, the seeds that remain above soil or just below the surface are available as forage. In addition to the seed treatment uses, neonics that are sprayed directly on crops or on soil can have direct effects on birds that eat grasses, broadleaf plants, or insects that have been sprayed. As neonics are considered very highly toxic to many species of invertebrates, any bird or mammal that feeds on insects could see its prey base decline and subsequently not receive the nourishment it needs to thrive.

Earlier this year, the European Union banned four common neonicotinoids for outdoor uses in agriculture.¹⁶ Europe's decision came after Canada's pesticide regulatory agency recommended banning imidacloprid, the most widely used neonicotinoid, based on demonstrated harms to aquatic ecosystems.¹⁷ Also earlier this year, California announced that it would

¹² EPA, Thiamethoxam - Transmittal of the Preliminary Aquatic and Non-Pollinator Terrestrial Risk Assessment to Support Registration Review (November 29, 2017); Jeffery S. Pettis et al., *Pesticide Exposure in Honey Bees Results in Increased Levels of the Gut Pathogen Nosema*, 99 *Die Naturwissenschaften* 153, 153–58 (2012).

¹³ Margaret Eng et al., *Imidacloprid and Chlorpyrifos Insecticides Impair Migratory Ability in a Seed-Eating Songbird*, 7 *Scientific Reports* 15176, DOI:10.1038/s41598-017-15446-x (2017); Ertl et al., *Potential Impact of Neonicotinoid Use on Northern Bobwhite (Colinus virginianus) in Texas: A Historical Analysis*, 13(1) *PLoS ONE* e0191100 (2018), available at <https://doi.org/10.1371/journal.pone.0191100>.

¹⁴ Main et al., *Widespread Use and Frequent Detection of Neonicotinoid Insecticides in Wetlands of Canada's Prairie Pothole Region*, 9(3) *PLoS ONE* e92821 (2014), available at <https://doi.org/10.1371/journal.pone.0092821>.

¹⁵ EPA, Thiamethoxam -Transmittal of the Preliminary Aquatic and Non-Pollinator Terrestrial Risk Assessment to Support Registration Review (November 29, 2017); Starnes, K., & Goh, K. S., *Detections of the Neonicotinoid Insecticide Imidacloprid in Surface Waters of Three Agricultural Regions of California, USA, 2010–2011*, 88(3) *Bulletin of Environmental Contamination and Toxicology* 316, 316-21 (2012).

¹⁶ European Commission, *Neonicotinoids, Regulations to Further Restrict the Uses for Clothianidin, Imidacloprid and Thiamethoxam* (May 30, 2018), available at https://ec.europa.eu/food/plant/pesticides/approval_active_substances/approval_renewal/neonicotinoids_en.

¹⁷ Health Canada, Pest Management Regulatory Agency, *Update on the Neonicotinoid Pesticides* (2017), available at <https://www.canada.ca/en/health-canada/services/consumer-product-safety/reports-publications/pesticides-pest-management/fact-sheets-other-resources/update-neonicotinoid-pesticides.html>.

temporarily no longer consider any new uses of neonicotinoid pesticides in the state in an effort to protect terrestrial invertebrates.¹⁸

EPA's recent analyses of the risks posed by neonicotinoids to different taxa found the potential for high risk to listed species from the labelled uses of these pesticides. Imidacloprid, for example, is considered highly toxic to some species of birds.¹⁹ Small and medium insectivorous birds exceeded EPA's level of concern for acute harm when feeding on insects that had been exposed to imidacloprid after use on soybean and potato crops.²⁰ EPA found its risk of concern exceeded if 31 percent of the bird's diet consisted of insects that have been exposed to imidacloprid applied to soybean crops. The agency also found that if 25 percent of a bird's diet consisted of exposed insects after potato plants had been sprayed with imidacloprid, the risk of concern for acute harm would also be exceeded.²¹

Further, recent studies from France show that 70 percent of bird mortality incidents where imidacloprid residues were detected were due to poisoning by imidacloprid-treated seeds.²² A single imidacloprid-treated corn seed can be lethal to a medium-sized bird, and eating as little as 1/10th of a treated seed per day is sufficient to cause negative reproductive effects.²³ An analysis by the U.S. EPA found that all seed-eating birds are at direct risk of harm by eating imidacloprid-treated soybean, wheat, corn, and sorghum seeds – in some scenarios exceeding the EPA level of concern by nearly 200-fold.²⁴ Additionally the agency found that if neonic-treated wheat and sorghum seeds comprised just 1 percent of a bird's diet, it would be sufficient to cause harm.²⁵ Most foliar uses of imidacloprid can further expose small and medium birds that feed on grasses, broadleaf plants and arthropods to levels above the EPA's level of concern.²⁶ Declines in insect-eating birds were also found in areas with high imidacloprid concentrations in nearby water sources.²⁷

¹⁸ California Department of Pesticide Regulation, *Expanding Use of Pesticide Products Under Reevaluation*, California Notice 2018-01 (January 3, 2018), available at <https://www.cdpr.ca.gov/docs/registration/canot/2018/ca2018-01.pdf>.

¹⁹ EPA, Preliminary Terrestrial Risk Assessment to Support the Registration Review of Imidacloprid (November 28, 2017).

²⁰ EPA, Imidacloprid -Transmittal of the Preliminary Terrestrial Risk Assessment to Support the Registration Review (November 28, 2017).

²¹ *Id.*

²² Millot et al., *Field Evidence of Bird Poisonings by Imidacloprid-Treated Seeds: A Review of Incidents Reported by the French SAGIR Network from 1995 to 2014*, 24(6) Environmental Science and Pollution Research 5469, 5469 (2016).

²³ Mineau, P. & Palmer, C., *The Impact of the Nation's Most Widely Used Insecticides on Birds*, American Bird Conservancy (2013), available at <https://abcbirds.org/article/birds-bees-and-aquatic-life-threatened-by-gross-underestimate-of-toxicity-of-worlds-most-widely-used-pesticide-2/>.

²⁴ EPA, Preliminary Terrestrial Risk Assessment to Support the Registration Review of Imidacloprid (November 28, 2017).

²⁵ *Id.*

²⁶ *Id.*

²⁷ Hallmann et al., *Declines in Insectivorous Birds are Associated with High Neonicotinoid Concentrations*, 511(7509) Nature 341, 341 (2014).

On an acute exposure basis, EPA has designated neonicotinoids such as imidacloprid and thiamethoxam as very highly toxic to aquatic invertebrates.²⁸ EPA's risk level of concern was exceeded for freshwater and saltwater invertebrates for nearly every single foliar and soil treatment use that was modelled.²⁹ Any species reliant on aquatic invertebrates for food, such as mammals, could also be at risk of indirect effects from use of these pesticides.

Similarly, GE crops are the subject of a companion suite of species and habitat risks. GE crops are a pesticide-promoting technology. Over five of every six acres of GE crops worldwide (84 percent) have been developed to be herbicide-resistant.³⁰ In 2018 in the U.S., 92 percent of corn, 94 percent of cotton, and 94 percent of soybeans are GE, herbicide-resistant varieties.³¹

The pesticides and resistant seeds are sold together as a "cropping system," and the crops' immunity allows for increased pesticide spraying at increased intervals during the farming season. As a result, these pesticide-promoting GE crop systems have dramatically increased the overall use of pesticides in U.S. agriculture. For example, in the sixteen years from 1996 to 2011, an extra 527 million pounds of herbicides are estimated to have been sprayed in U.S. agriculture because of GE crops.³² Until recently, the vast majority of all GE crops have been Monsanto's "Roundup Ready" varieties, which are resistant to glyphosate, discussed further above.³³ The Roundup Ready GE crop system has made glyphosate the most used pesticide in history, with over 280 million pounds applied in U.S. agriculture in 2012 alone.³⁴

Further, "next-generation" GE crops "stacked" with resistance to multiple other toxic herbicides, such as recently approved crops with resistance to 2,4-D and dicamba, have shown vast increases in herbicide use, including a three- to seven-fold rise in agricultural use of 2,4-D.³⁵

²⁸ EPA, Thiamethoxam -Transmittal of the Preliminary Aquatic and Non-Pollinator Terrestrial Risk Assessment to Support Registration Review (November 29, 2017); EPA, Preliminary Aquatic Risk Assessment to Support the Registration Review of Imidacloprid (December 22, 2016).

²⁹ *Id.*

³⁰ C. James, *Biotech Traits: Annual Updates 2014*, excerpted from Global Status of Commercialized Biotech/GM Crops, ISAAA Brief No. 46 (2014), available at http://www.isaaa.org/resources/publications/biotech_traits_annual_updates/download/Biotech%20Traits%20Annual%20Updates.pdf (GE crops with herbicide-resistance – alone or stacked with insect resistance – were grown on 362 million acres of the 433 million global GE crop acres reported in 2013).

³¹ USDA, *Adoption of Genetically Engineered Crops in the U.S.*, <https://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us.aspx> (last visited Sept. 5, 2018).

³² Charles Benbrook, *Impacts of Genetically Engineered Crops on Pesticide Use in the U.S. – the First Sixteen Years*, 24 *Env'tl. Sci. Eur.* 1, 3 (2012), available at <http://www.enveurope.com/content/pdf/2190-4715-24-24.pdf>; R. J. Seidler, *Pesticide Use on Genetically Engineered Crops*, Ag/Mag Blog, (Sept. 15, 2014), available at http://static.ewg.org/agmag/pdfs/pesticide_use_on_genetically_engineered_crops.pdf.

³³ *Ctr. for Food Safety v. Vilsack*, 718 F.3d 829, 836 (9th Cir. 2013) (describing Monsanto's Roundup Ready "crop system" of the GE crop and associated pesticide); William Neuman & Andrew Pollack, *Farmers Cope with Roundup-Resistant Weeds*, N.Y. Times (May 3, 2010), available at http://www.nytimes.com/2010/05/04/business/energy-environment/04weed.html?_r=1&pagewanted=all.

³⁴ USGS, Pesticide National Synthesis Project, *Pesticide Use Maps—Glyphosate* (2012), available at http://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2012&map=GLYPHOSATE&hilo=L.

³⁵ USDA, Final Environmental Impact Statement for Determinations of Nonregulated Status for 2,4-D-Resistant Corn and Soybean Varieties, 134 (August 2014), available at http://www.aphis.usda.gov/brs/aphisdocs/24d_feis.pdf.

Second, over-reliance on pesticides in industrial agriculture – including as a result of GE crops – has caused an epidemic of pesticide-resistant “superweeds” that have evolved resistance.³⁶ Because superweeds are not loyal to the croplands on which they originate, they can take-up residence on non-cultivated, non-agricultural refuge lands. This can crowd out native plants and wildlife habitat, and create the need for even further pesticide use on non-agricultural crop-lands – efforts that are, again, antipodean to the mission of the Refuge System.

Finally, another adverse impact of GE crops is transgenic contamination – the unintended, undesired presence of transgenic material in organic or traditional crops, as well as wild plants. Transgenic contamination happens through, among other means, wind- or insect-mediated cross-pollination, seed mixing, faulty or negligent containment, and weather events.³⁷ Unlike standard chemical pollution, transgenic contamination is living pollution that can propagate itself via gene flow.³⁸ Escape of transgenes into related wild plant populations is, in most cases, irreparable. Oregon, for example, continues the Sisyphean task of trying to find and destroy feral populations of Monsanto’s “Roundup Ready” GE bentgrass that escaped field trials there over a decade ago.³⁹ In 2009, the Service concluded that this GE grass would likely jeopardize the continued existence of two endangered plants and one endangered butterfly if commercially approved and planted.⁴⁰

Due to this substantial change by the Service, the Wheeler Complex is likely to experience significant additional environmental, species, and public safety harms as a result of its cooperative farming program. Thus, to satisfy the Service’s ongoing compatibility obligations, these significant new circumstances must be reasonably considered through a reevaluation of the Wheeler Farming CD, and those findings must be made available to the public for review and comment. *See* 603 FW 2, § 2.11.

³⁶ Charles Benbrook, *Impacts of Genetically Engineered Crops on Pesticide Use in the United States: The First Thirteen Years*, 3, 23, 31, 36 (2009) available at <http://www.organic-center.org/reportfiles/GE13YearsReport.pdf>; Mark Koba, *Superweeds Sprout Farmland Controversy Over GMOs*, NBC News (September 30, 2014), available at <http://www.nbcnews.com/business/economy/superweeds-sprout-farmland-controversy-over-gmos-n214996>; David Mortensen et al., *Navigating a Critical Juncture for Sustainable Weed Management*, 62 *Bioscience* 75, 75-84 (2012), available at <http://bioscience.oxfordjournals.org/content/62/1/75.full.pdf+html>; Scott Kilman, *Superweed Outbreak Triggers Arms Race*, Wall Street Journal (June 4, 2010), available at <http://www.neurologicalhealth.org/pdf/Superweed%20Outbreak%20Triggers%20Arms%20Race.pdf>.

³⁷ *Geertson Seed Farms v. Johanns*, No. C 06-01075 CRB, 2007 WL 518624, at *4 (N.D. Cal. Feb. 13, 2007) (“Biological contamination can occur through pollination of non-genetically engineered plants by genetically engineered plants or by the mixing of genetically engineered seed with natural, or non-genetically engineered seed.”); Michelle Marvier & Rene C. Van Acker, *Can Crop Transgenes Be Kept on a Leash?*, 3 *Frontiers Ecology & Env’t* 99, 100-01 (2005).

³⁸ M. Mellon & J. Rissler, *Gone to Seed: Transgenic Contaminants in the Traditional Seed Supply*, Union of Concerned Scientists (2004), available at http://www.ucsusa.org/food_and_agriculture/our-failing-food-system/genetic-engineering/gone-to-seed.html#.WjK7_IWnHIU (finding that approximately 50 percent or more certified non-genetically engineered corn, canola, and soybean seed had been contaminated with transgenes).

³⁹ *Int’l Ctr. for Tech. Assessment v. Johanns*, 473 F. Supp. 2d 9, 13, 29 (D.D.C. 2007); Mitch Lies, *Bentgrass Eradication Plan Unveiled*, Capital Press (June 16, 2011), available at <http://www.capitalpress.com/content/ml-scotts-061711>; Mitch Lies, *Feds Mum on GMO Spread*, Capital Press (Nov. 18, 2010), available at <http://www.capitalpress.com/content/ml-bentgrass-111910>.

⁴⁰ George Kimbrell, *Meet Monsanto’s Dangerous Bioengineered Plant that Never Dies*, Alternet (2016), available at <https://www.alternet.org/environment/sordid-tale-monsantos-genetically-engineered-bentgrass-dangerous-grass-never-dies>.

C. The Public Notice Process Used by the Service for the Wheeler Farming CD was Insufficient and Supports a Re-Opening of the Commenting Period

The Wheeler Farming CD was only made available for public review and comment for a total of fifteen days from January 10, 2018 to January 25, 2018. Wheeler Farming CD at 13. This limited public comment period was insufficient to adequately enable and support public participation in the review process. The public comment period, therefore, should be re-opened.

First, according to the Service's compatibility guidelines, "[p]ublic review and comment includes *actively seeking to identify* individuals and organizations that reasonably might be affected by, or interested in, a refuge use." 603 FW 2, § 2.12(A)(9)(a) (emphasis added). Under that standard, the Conservation Groups should have been identified and alerted to the opening of the public comment period for the Wheeler Farming CD.

Specifically, on November 20, 2017, Petitioner CBD submitted a request under the federal Freedom of Information Act (FOIA) to both the refuge manager of the Wheeler National Wildlife Refuge Complex and the Service's Region 4 for records related to "any 'compatibility determination' review, evaluation, re-evaluation, and/or determination conducted for [the Wheeler NWR Complex] or any individual NWR in this Complex for the following non-wildlife dependent use: cooperative farming." *See* FOIA Request (Att. N). That request was assigned tracking number FWS-2018-00224. Under FOIA, the Service had twenty working days to comply with the request. 5 U.S.C. § 552(a)(6)(A)(i); 5 C.F.R. § 1303.10(c). The Service failed to do so. On December 20, 2017, the Service responded to this request and asked for an extension in responding to the request and providing the requested records (Att. O). That requested extension included, in full, the amount of time the Wheeler Farming CD was made available for to the public for notice and comment. Yet, despite specifically expressed interest in this use and its compatibility, at no point prior to or during that extension of the FOIA production period did the Service make Petitioner CBD aware of the draft Wheeler Farming CD or public commenting period.

The timing of the Service's request to extend the dates for its compliance with CBD's FOIA request is of sincere concern to the Conservation Groups. The Conservation Groups, as well as the general public, hope and expect for administrative agencies such as the Service to operate in good faith in executing and fulfilling the responsibilities granted to them through federal laws. That does not appear to have happened here. The Conservation Groups, therefore, request that the Service act immediately re-open the public comment period for the Wheeler Farming CD.

There are additional reasons for the Service to re-open this public commenting period. For one, the Service should have anticipated its evaluation and approval of this compatibility determination to be controversial. Specifically, in addition to CBD's FOIA request, which should have alerted the Service that this was a matter of interest, Petitioner CFS has actively litigated numerous matters specifically related to concerns associated with cooperative farming on national wildlife refuges, including specifically in the Service's Region 4. *See, e.g., Center for Food Safety v. S.M.R. Jewell*, 83 F. Supp. 3d 126 (D.D.C. 2015) (determining, *inter alia*, that the Service did not conduct an adequate site-specific analysis under NEPA regarding the use of genetically modified crops at a National Wildlife Refuge, and that Service was required to, but

did not, adequately analyze the impacts of agricultural pesticide use for that same refuge); *Ctr. for Food Safety v. Salazar*, 900 F. Supp. 2d 1, 4 (D.D.C. 2012) (finding the case not to be moot because remedies remained available to plaintiffs challenging of the use of genetically engineered crops on National Wildlife Refuges in the Southeast Region even where the Service had already decided to cease such authorizations in future planting years); *Del. Audubon Soc’y, Inc. v. Sec’y of the U.S. Dep’t of Interior*, 612 F. Supp. 2d 442 (D. Del. 2009) (finding that the Refuge Act requires a written compatibility determination before farming is allowed on a refuge, that genetically modified crops were not to be farmed on refuge lands prior to preparing an appropriate NEPA analysis, and that plaintiffs were entitled to injunctive relief). For controversial uses, the refuge manager “should expand the public review and commenting process” by expanding notices to being placed in the Federal Register, “letters to potentially interested people,” holding public meetings, and extending the public comment period to longer than 14 calendar days. 603 FW 2, § 2.12(A)(9)(a)(iii). Here, the Wheeler Farming CD was not published in the Federal Register, the public comment period remained a mere 14 days long, the Conservation Groups were not notified as a potentially interested persons, and, to our knowledge, no public hearings took place. As notice was not provided to enable the Conservation Groups to sufficiently review and respond to the complexity of matters contained in the Wheeler Farming CD, the review should be re-opened for public notice and comment.

D. The Service Must Prepare a Supplemental Analysis under the National Environmental Policy Act

Congress enacted NEPA in 1969 to ensure fully informed agency decisionmaking and to provide for public participation in the agency’s analysis of environmental matters related to its decisionmaking. 40 C.F.R. § 1500.1; *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). As identified above, the Wheeler EA and FONSI does not disclose and evaluate the direct, indirect, and cumulative effects of approving the use of pesticides for agricultural purposes on the Wheeler Complex. Nevertheless, the Wheeler Farming CD claims a categorical exclusion (CE) from additional NEPA analysis, asserting reliance on the Wheeler EA and FONSI. Wheeler Farming CD at 19. In so doing, the Service unlawfully disregards the procedural and substantive requirements of NEPA, and has deprived the public of the opportunity to meaningfully participate in the NEPA process.

NEPA, our “basic national charter for protection of the environment,” requires federal agencies to prepare an Environmental Impact Statement (EIS), for any major federal action that may have significant environmental impacts. 40 C.F.R. § 1500.1; 42 U.S.C. § 4332; 40 C.F.R. §1502.9. An EIS must discuss: (i) the environmental impact of the proposed action; (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented; (iii) alternatives to the proposed action; (iv) the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity; and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. 42 U.S.C. § 4322.

In considering the effects of an action, an agency must consider all impacts on the environment, including, *inter alia*, “effects on air and water and other natural systems,” “[t]he degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973,”

“[u]nique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas,” and “[t]he degree to which the proposed action affects public health or safety.” 40 C.F.R. § 1508.8(b); *id.* at § 1508.27(b)(1)-(10). An EIS must also consider “cumulative” effects – *i.e.*, “the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions.” *Id.* at § 1508.7.

In advance of preparing an EIS, the agency may prepare an Environmental Assessment (EA). If the agency prepares an EA, it may only proceed without additionally preparing an EIS if it can lawfully demonstrate that the proposed rule will not have significant environmental impacts that would require an EIS. However, as courts have previously recognized, “NEPA’s ‘national policy . . . to promote efforts which will prevent or eliminate damage to the environment . . . is surely implicated when the environment that may be damaged is one that Congress has specially designated for federal protection.” *Nat’l Audubon Soc’y v. Dep’t of the Navy*, 422 F.3d 174, 186-87 (4th Cir. 2005) (citing 42 U.S.C. § 4321). And, indeed, that “[t]he point of a wildlife refuge is not just to protect an area that is beautiful and valuable in its own right, but to remind us that an environment that is welcoming to wildlife will ultimately be one that is more hospitable to humankind.” *Id.* at 187.

Here, at a minimum, a supplement EA or EIS should have been prepared in advance of the Service finalizing the Wheeler Farming CD because the use of pesticides for agricultural purposes on the Wheeler Complex is likely to cause significant effects to the environment that were not identified and evaluated under the Wheeler EA and FONSI or through its CD process. 40 C.F.R. § 1502.9(c). Those significant effects include, but are not limited to: an increase in water quality degradation and other environmental harm; impacts to endangered or threatened species or their habitats; impacts to public health and safety; and a variety of cumulative impacts.

The Service’s failure to conduct an appropriately searching environmental analysis on the impacts of approving the use of pesticides that are toxic to wildlife in cooperative farming is not cured by its reliance on NEPA’s CE provision. Wheeler Farming CD at 19. CEs may be appropriate for “actions which do not individually or cumulatively have a significant effect on the human environment . . . and for which, therefore, neither an environmental assessment nor an environmental impact statement is required.” 40 C.F.R. § 1508.4. The Wheeler Farming CD cites to Department of Interior Manual 516 DM 8.5 as support for its claim that a CE is appropriate in this instances. Wheeler Farming CD at 19. 516 DM 8.5 provides in relevant part that changes or amendments to a proposed action can be categorically excluded “when such changes have no or minor potential environmental impacts,” and the “issuance or reissuance of special use permits . . . when such uses are compatible, contribute to the purposes of the refuge system unit, and result in no or negligible environmental effects.” 516 DM 8, §§ 8.5(A)(1), (B)(7), (B)(9), (C)(5).

As already discussed, the Service’s action here will result in significant, previously unanalyzed environmental effects that, alone, should preclude the application of a CE. *Id.* However, even if this action were to be considered categorically excluded from further NEPA environmental review generally, the action “must [additionally] be evaluated to determine whether it meets any of the extraordinary circumstances [and] . . . if it does, further analysis and environmental documents *must* be prepared for the action.” 40 C.F.R. § 46.205 (c)(1) (emphasis

added). Here, extraordinary circumstances are sufficiently present to remove this action from the CE category and require further analysis under NEPA.

Specifically, “extraordinary circumstances exist for individual actions within categorical exclusions that meet” the following criteria:

(a) Have significant impacts on public health or safety; (b) Have significant impacts on such natural resources and unique geographic characteristics as . . . park, recreation or refuge lands; . . . migratory birds; and other ecologically significant or critical areas; (c) Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources; (d) Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks; (e) Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects; (f) Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects; (g) Have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by the bureau; (h) Have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species or have significant impacts on designated Critical Habitat for these species

43 C.F.R. § 46.215. As many of those criteria are present here, and because this action will cause significant environmental impact, an EIS or, at a minimum, a supplemental EA or EIS must be prepared for the Wheeler Farming CD, or the Service must re-open and reconsider the Wheeler Farming CD and discontinue the use pesticides in the cooperative farming program that are harmful to wildlife, public health, and the environment.

CONCLUSION

The Conservation Groups strongly support the mission of the Refuge System and the vital purposes for which the refuges in the Wheeler National Wildlife Refuge Complex were established. To ensure that these refuges are managed in a way that will preserve their biological integrity, species diversity, and overall health, it is essential that the use of harmful pesticides for commercial agricultural purposes be discontinued. Therefore, the Conservation Groups request that the Service re-open the comment period or, in the alternative, reconsider and revise the Wheeler Farming CD, as outlined in this petition.

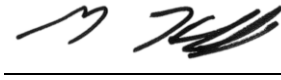
The Conservation Groups also request to be added to the CCP mailing list for the Wheeler Complex (see Wheeler CCP at 152) as well as any other separate mailing list that may exist related to any separate process for making compatibility determinations on the Wheeler Complex.

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Respectfully submitted,

A handwritten signature in dark ink, consisting of a stylized 'H' followed by a long, sweeping horizontal line.

Hannah Connor
Senior Attorney
Center for Biological Diversity

A handwritten signature in dark ink, featuring a series of loops and a final flourish.

George Kimbrell
Legal Director
Center for Food Safety

David Whiteside
Riverkeeper and Executive Director
Tennessee Riverkeeper

Kellan Smith
Legal Fellow
Center for Food Safety