



CENTER FOR
FOOD SAFETY



Via Certified and Electronic Mail

August 8, 2018

The Honorable Ryan Zinke
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Re: Notice of Intent to Sue for Violations of the Endangered Species Act Regarding August 2, 2018 Agency Action Withdrawing Prior Decision in “Use of Agricultural Practices in Wildlife Management in the National Wildlife Refuge System” (July 17, 2014)

Secretary Zinke and Principle Deputy Director Sheehan:

On behalf of the Center for Biological Diversity and Center for Food Safety (jointly “the Centers”), we are providing notice pursuant to Section 11(g) of the Endangered Species Act (“ESA” or “Act”), 16 U.S.C. §1540(g)(2)(A)(i), that the United States Fish and Wildlife Service (“FWS”) is in violation of Section 7 of the ESA, 16 U.S.C. §1536, for failing to ensure that its action withdrawing the prohibition on the use of neonicotinoid pesticides and genetically engineered (“GE”) crops on national wildlife refuges will not jeopardize the continued existence of threatened and endangered species.

On August 2, 2018, Principal Deputy Director Greg Sheehan abruptly withdrew a prior FWS decision that formally phased-out and discontinued the use of neonicotinoid pesticides and GE crops in the National Wildlife Refuge System (“Refuge System”). As a result of this agency

action, previously prohibited neonicotinoid pesticides and GE crops may now be used immediately on national wildlife refuges throughout the country.

Pesticides—including neonicotinoids and pesticides to which GE crops are genetically engineered to be immune—are known to injure and kill endangered wildlife and plants, and their use is directly implicated in the decline of hundreds of ESA-protected species. Imperiled wildlife seeking sanctuary and forage in national wildlife refuges are no exception. Endangered and threatened species that rely on these refuges, including the American burying beetle (*Nicrophorus americanus*), giant garter snake (*Thamnophis gigas*), gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), least tern (*Sterna antillarum*), orange-footed pearly mussel (*Plethobasus cooperianus*), pink mucket pearly mussel (*Lampsilis abrupta*), piping plover (*Charadrius melodus*), pygmy madtom (*Noturus stanauli*), red-cockaded woodpecker (*Picoides borealis*), ring pink mussel (*Obovaria retusa*), short-nose sucker (*Chasmistes brevirostris*), southwestern willow flycatcher (*Empidonax traillii extimus*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), will likely be harmed by the Service’s resumption of neonicotinoid pesticides and GE crops use in the Refuge System. By rescinding its 2014 decision without first completing consultation on the impacts to endangered and threatened species, FWS has violated the Endangered Species Act.

The Center for Biological Diversity is a nonprofit, public interest corporation with approximately 1.6 million members and supporters throughout the United States. The Center for Biological Diversity and its members are dedicated to protecting diverse native species and habitats through science, policy, education, and law. Its Environmental Health program seeks to address the harmful impacts of pesticides and toxic chemicals on people and the environment.

The Center for Food Safety (“CFS”) is a public interest, nonprofit, membership organization founded in 1997, representing over 950,000 members from every state in the country. CFS’s fundamental mission is to protect food, farmers, and the environment from the harms of industrial agriculture. CFS has flagship programs on improving the oversight and addressing the adverse impacts of both GE crops and neonicotinoids pesticides. Pursuant to these programs and its overall mission, since 2004 CFS has worked to reduce the threats to national wildlife refuges from GE crops and associated pesticide use.

Members of the Centers are and will be harmed by FWS’s continuing failures to take meaningful action to protect threatened and endangered species and the Refuge System’s vital natural heritage.

LEGAL BACKGROUND

Congress enacted the ESA in 1973 to provide for the conservation of endangered and threatened fish, wildlife, plants, and their natural habitats.¹ The ESA is to provide, in part, a “means whereby the ecosystems upon which endangered species and threatened species depend may be conserved . . . [and] a program for the conservation of such endangered species and threatened

¹ 16 U.S.C. §§ 1531, 1532.

species.”² The ESA vests primary responsibility for administering and enforcing the statute with the Secretaries of Commerce and Interior, who have delegated this responsibility to the National Marine Fisheries Service and FWS (collectively the “Services”).³

Section 2(c) of the ESA establishes that it is “the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act.”⁴ The ESA defines “conservation” to mean “the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary.”⁵ Similarly, Section 7(a)(1) of the ESA directs that federal agencies, such as FWS, “shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species.”⁶

In order to fulfill the substantive purposes of the ESA, federal agencies are required to engage in consultation with the Services to “insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the adverse modification of habitat of such species.”⁷

Section 7 consultation is required for “any action [that] may affect listed species or critical habitat.”⁸ Agency “action” is broadly defined in the ESA’s implementing regulations to include “all activities . . . of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies.”⁹ The Services’ regulations provide the following examples of agency actions:

- (a) actions intended to conserve listed species or their habitat;
- (b) the promulgation of regulations;
- (c) granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid;
- or
- (d) actions directly or indirectly causing modifications to the land, water, or air.¹⁰

At the completion of consultation, the Service must issue a biological opinion that determines whether the agency action is likely to jeopardize the species or adversely affect its critical habitat. If jeopardy, or adverse modification or destruction of critical habitat, is found, then the biological opinion must specify reasonable and prudent alternatives that will avoid jeopardy and allow the agency to proceed with the action.¹¹ Where an action does not jeopardize a listed species or adversely modify or destroy critical habitat, the Services must provide an incidental

² 16 U.S.C. §§ 1531-1544; 16 U.S.C. § 1531(b).

³ 50 C.F.R. § 402.01(b).

⁴ 16 U.S.C. § 1531(c)(1).

⁵ 16 U.S.C. § 1532(3).

⁶ 16 U.S.C. § 1536(a)(1).

⁷ *Id.*

⁸ 50 C.F.R. § 402.14.

⁹ 50 C.F.R. § 402.02.

¹⁰ *Id.*

¹¹ 16 U.S.C. § 1536(b).

take statement (“ITS”) and must also provide reasonable and prudent measures to minimize the impact of any taking of listed species.¹²

FWS is subject to the ESA’s Section 7 requirements. Section 7 requires that FWS consult on any agency action “in which there is discretionary Federal involvement or control.”¹³ ESA Section 7 compliance is achieved through intra-Service consultations and conferences, processes by which FWS consults or confers on actions that may affect listed and proposed species. FWS’s rescission of the 2014 memorandum and resumption of activities allowing neonicotinoid pesticide use and the planting of GE crops qualifies as an agency action over which FWS exercises considerable discretionary involvement and control.¹⁴ FWS further has ample discretion in administering the Refuge System “to consider the protection of threatened or endangered species as an end in itself.”¹⁵

Section 7(d) of the ESA provides that once a federal agency initiates consultation, the agency, as well as any applicant for a federal permit, “shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2) of this section.”¹⁶ The Section 7(d) prohibitions remain in effect throughout the consultation period and until the federal agency has satisfied its obligations under Section 7(a)(2) to ensure that no actions are taken in the meantime that will jeopardize the species or result in an adverse modification of its critical habitat.

Section 9 of the ESA prohibits any person, including any federal agency, from “taking” any listed species without proper authorization through a valid incidental take permit.¹⁷ The term “take” is statutorily defined broadly as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”¹⁸ “Harm” in the definition of “take” in the Act has been additionally defined broadly as “an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.”¹⁹ Courts have found federal agencies liable for unlawful take of listed species where agency-authorized activities resulted in the killing or harming of such species.²⁰

¹² 50 C.F.R. § 402.14.

¹³ 50 C.F.R. § 402.03.

¹⁴ 50 C.F.R. § 402.02 (defining “action”).

¹⁵ *Florida Key Deer v. Paulison*, 522 F.3d 1133, 1141 (11th Cir. 2008) (citing *Nat’l Ass’n of Home Builders v. Defenders of Wildlife*, 551 U.S. 644, 671 (2007)); *NRDC v. Jewell*, 749 F.3d 776, 784 (9th Cir. 2014); *Am. Rivers, Inc. v. United States Army Corps of Eng’rs.*, 421 F.3d 618, 630-631 (8th Cir. 2005).

¹⁶ 16 U.S.C. § 1536(d).

¹⁷ 16 U.S.C. § 1538(a)(1)(B); 50 C.F.R. § 17.31(a) (extending the “take” prohibition to threatened species).

¹⁸ 16 U.S.C. § 1532(19).

¹⁹ 50 C.F.R. § 17.3; see also *Babbitt v. Sweet Home Ch. Of Communities for a Great Oregon*, 515 U.S. 687 (1995).

²⁰ See, e.g., *Defenders of Wildlife v. Env’tl. Prot. Agency*, 882 F.2d 1294 (8th Cir. 1989).

THE REFUGE SYSTEM

The Refuge System consists of millions of acres of public lands and waters managed by the Service for the conservation of plants, fish, wildlife, and their habitats.²¹ The Service must manage each refuge in furtherance of the Refuge System’s mission and for the benefit of current and future generations.²² In managing these refuges, “the fundamental mission of [the] System is wildlife conservation: wildlife and wildlife conservation must come first.”²³ To support this goal, Congress directed the Secretary of the Department of the Interior to “ensure” that the biological integrity, species diversity, and environmental health of the Refuge System are prioritized and preserved.²⁴

On July 17, 2014, in furtherance of this mission, the Service issued a decision phasing-out the use of neonicotinoid pesticides and GE crops for agricultural purposes throughout the Refuge System. The Service’s action was deliberative, well-supported by sound science, and based on the unambiguous determination that such practices were not compatible with the mission of the Refuge System. It also followed on the heels of numerous legal actions in which courts repeatedly ruled that FWS had violated core environmental laws in approving the use of GE crops on various refuges. Indeed, as the Service and the scientific community have long acknowledged, continued approval of these practices—especially for non-essential purposes such as row crop agriculture—could severely impact the Service’s entrusted resources, including endangered and threatened species, migratory birds, and fish.

Pursuant to FWS’s 2014 directive, individual refuges had until January 2016 to discontinue the use of neonicotinoid pesticides and GE crops. This transition has been a success, with refuges across the country able to adapt to this decision while continuing to meet their wildlife management and conservation objectives. Nevertheless, on August 2, 2018, Principal Deputy Director Greg Sheehan abruptly and fully withdrew the agency’s prior decision, posting a 2-page memorandum to the Service Directorate titled “Withdrawal of Memorandum Titled, ‘Use of Agricultural Practices in Wildlife Management in the National Wildlife Refuge System’ (July 17, 2014).”

ENDANGERED AND THREATENED SPECIES ON WILDLIFE REFUGES THREATENED BY PESTICIDES AND GE CROPS

The Refuge System includes a diverse and highly complex system of habitats that provide food, shelter, and spawning grounds for a variety of species listed as threatened and endangered under the ESA—many of which may be adversely affected by the use of neonicotinoid pesticides and GE crops in the Refuge System.

²¹ 16 U.S.C. § 668dd(a)(2) (“The mission of the Refuge System 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 for the benefit of present and future generations of Americans.”).

²² *Id.*; *id.* § 668dd(a)(3)(A).

²³ House Report 105-106.

²⁴ 16 U.S.C. § 668dd(a)(4)(B).

Neonicotinoid Pesticides

Neonicotinoid pesticides (also referred to as “neonics”) are known to cause adverse impacts on a wide range of taxonomic groups, many of which include endangered species found on wildlife refuges.

Neonicotinoids 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.²⁵ 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 persistent in the environment with half-lives that can range from 148 days to more than three years.²⁶ This persistence and high water solubility make the pesticides highly susceptible to runoff into water bodies.²⁷

Neonicotinoids are pervasive in the environment, particularly water bodies where they can threaten biodiversity in lakes, rivers, and streams and negatively affect overall environmental health.²⁸ 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.²⁹ Studies have confirmed that neonicotinoids interact with common bee pathogens and parasites, making bees more vulnerable to the deadly effects of both.³⁰ A recent study further found that small doses of neonicotinoid pesticides negatively affected the ability of songbirds to navigate.³¹

Earlier this year, the European Union banned four common neonicotinoids for outdoor uses in agriculture.³² Europe’s decision came after Canada’s pesticide regulatory agency recommended banning imidacloprid, the most widely used neonicotinoid, based on demonstrated harms to

²⁵ EPA, Thiamethoxam -Transmittal of the Preliminary Aquatic and Non-Pollinator Terrestrial Risk Assessment to Support Registration Review (November 29, 2017).

²⁶ Main, A. R., Headley, J. V., Peru, K. M., Michel, N. L., Cessna, A. J., & Morrissey, C. A. (2014). Widespread Use and Frequent Detection of Neonicotinoid Insecticides in Wetlands of Canada's Prairie Pothole Region. *PLoS ONE*, 9(3), e92821.

²⁷ EPA. Thiamethoxam -Transmittal of the Preliminary Aquatic and Non-Pollinator Terrestrial Risk Assessment to Support Registration Review. November 29, 2017.

²⁸ Starner, K., & Goh, K. S. (2012). Detections of the Neonicotinoid Insecticide Imidacloprid in Surface Waters of Three Agricultural Regions of California, USA, 2010–2011. *Bulletin of Environmental Contamination and Toxicology*, 88(3), 316-321.

²⁹ Morrissey, C. A., Mineau, P., Devries, J. H., Sanchez-Bayo, F., Liess, M., Cavallaro, M. C., & Liber, K. (2015). Neonicotinoid contamination of global surface waters and associated risk to aquatic invertebrates: A review. *Environment International*, 74, 291-303.

³⁰ 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).

³¹ Margaret Eng et al., *Imidacloprid and chlorpyrifos insecticides impair migratory ability in a seed-eating songbird*, *Scientific Reports*, 7: 15176, DOI:10.1038/s41598-017-15446-x .

³² 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.

aquatic ecosystems.³³ Also earlier this year, California announced that it would temporarily no longer consider any new uses of neonicotinoid pesticides in the state in an effort to protect terrestrial invertebrates.³⁴

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. 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.³⁵ 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.³⁶

On an acute exposure basis, EPA has designated the neonicotinoids imidacloprid and thiamethoxam as very highly toxic to aquatic invertebrates.³⁷ 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.³⁸ Any species reliant on aquatic invertebrates for food could also be at risk of indirect effects from use of these pesticides.

Genetically Engineered Crops

Similarly, GE crops are the subject of a companion suite of species and habitat risks. First, GE crops are a pesticide-promoting technology. Despite two anticlimactic decades of rhetoric about reducing world hunger, ameliorating global malnutrition, increasing crops yields, and combating climate change, biotechnology firms have only delivered a handful of GE commodity crops that either produce insecticides and/or withstand direct application of herbicides. In short, GE crops have overwhelmingly been developed for pesticide resistance. Over five of every six acres of GE crops worldwide (84%) have been developed to be herbicide-resistant;³⁹ in 2018 in the U.S., 92

³³ 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>.

³⁴ 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>.

³⁵ EPA, Imidacloprid -Transmittal of the Preliminary Terrestrial Risk Assessment to Support the Registration Review (November 28, 2017).

³⁶ *Id.*

³⁷ 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).

³⁸ *Id.*

³⁹ 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).

percent of corn, 94 percent of cotton, and 94 percent of soybeans are GE, herbicide-resistant varieties.⁴⁰

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.⁴¹ Until recently, the vast majority of all GE crops have been Monsanto’s “Roundup Ready” varieties, which are resistant to glyphosate (the active ingredient in Roundup pesticide).⁴² 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.⁴³ As pesticides such as glyphosate are designed to prevent, destroy, repel, or reduce “pest” species, their continued use (especially at surplus rates) is antithetical to the objectives and goals of the Refuge System because those pesticides adversely affect non-target species, such as protected plants, fish, and other wildlife.

The extraordinary use of pesticides associated with GE crops has had profound consequences. For example, the substantial use of glyphosate with Roundup Ready crops has contributed to an alarming decline in monarch butterfly populations.⁴⁴ Monarch caterpillars feed only on milkweed plants, once common in corn and soybeans fields.⁴⁵ Glyphosate has nearly eradicated milkweed from Midwest cropland, the monarchs’ major breeding range, depriving monarch caterpillars of their chief food source.⁴⁶ As a result, FWS has concluded that ESA protection may be warranted for monarchs.⁴⁷

⁴⁰ 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 Aug. 8, 2018).

⁴¹ Charles Benbrook, *Impacts of genetically engineered crops on pesticide use in the U.S. – the first sixteen years*, 24 *Envtl. 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.

⁴² *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.

⁴³ U.S. Geological Survey, 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.

⁴⁴ Coniff, *Tracking the causes of sharp decline of the monarch butterfly*, *Yale Environment* 360 (2013), available at http://e360.yale.edu/feature/tracking_the_causes_of_sharp_decline_of_the_monarch_butterfly/2634/; J.M. Pleasants & K.S. Oberhauser, *Milkweed loss in agricultural fields because of herbicide use: effect on the monarch butterfly population*, 6 *Insect Conservation and Diversity* 135, 135-144 (2013), available at <http://www.public.iastate.edu/~jpleasan/Publications%20pdfs/Glyphosate%20use%20and%20Monarchs.pdf>.

⁴⁵ Josephine Marcotty, *Calling all milkweed: Federal pollinator plan needs a billion plants for monarch butterflies*, *Minneapolis Star-Tribune* (June 6, 2015), available at <http://www.startribune.com/calling-all-milkweed-federal-pollinator-plan-needs-a-billion-plants-for-monarchs/306383591/>.

⁴⁶ *Id.*

⁴⁷ 79 Fed. Reg. 78775-78778 (December 31, 2014).

Glyphosate is also a leading culprit in herbicidal drift injury to sensitive crops,⁴⁸ and also harms wild plants that many animals depend upon for food and/or habitat. Glyphosate is frequently detected in the air, rain, and water bodies of the Midwest and South.⁴⁹ Glyphosate-containing Roundup formulations are extremely toxic to tadpoles and frogs, and are believed to have contributed to the worldwide decline in frog populations.⁵⁰

Second, as with antibiotic-resistance caused by industrial livestock drug overuse, over-reliance on glyphosate in industrial agriculture has caused an epidemic of pesticide-resistant “superweeds” that have evolved resistance to glyphosate on 70 million acres in the United States, costing U.S. farmers approximately 1 billion in damages to crops.⁵¹ The pesticide firms’ “solution” is a “next-generation” of GE crops “stacked” with resistance to multiple other toxic herbicides, such as recently approved crops with resistance to Agent Orange component 2,4-D and the closely related dicamba.⁵² Yet, far from providing any panacea, these new GE crops will instead lead to vastly increased herbicide use, illustrated by a three- to seven-fold rise in agricultural use of 2,4-D,⁵³ and increasingly intractable weeds that are now resistant to multiple herbicides.⁵⁴

Additionally, because superweeds are not loyal to the croplands on which they originate, they can also 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-

⁴⁸ Assoc. of Am. Pesticide Control Officials, 2005 Pesticide Drift Enforcement Survey Report (2005), *available at* <https://aapco.org/surveys-1998-to-present/>.

⁴⁹ Feng-Chih Chang, Matt F. Simcik & Paul D. Capelz, *Occurrence and Fate of the Herbicide Glyphosate and its Degradate Aminomethylphosphonic Acid in the Atmosphere*, 30 *Envtl. Toxicology & Chemistry* 548, 548-50 (2011), *available at* <http://onlinelibrary.wiley.com/doi/10.1002/etc.431/pdf>; Richard H. Coupe, *et. al.*, *Fate and Transport of Glyphosate and Aminomethylphosphonic Acid in Surface Waters of Agricultural Basins*, 68 *Pest. Mgmt. Sci.* 16, 16-17 (2012), *available at* http://www.blauen-institut.ch/s2_blue/tx_blu/tp/pg/g2442a_fate_transport.pdf.

⁵⁰ Rick A. Relyea, *The Lethal Impact of Roundup on Aquatic and Terrestrial Amphibians*, 15 *Ecological Adaptations* 1118, 1120-23 (2005), *available at* http://usf.usfca.edu/fac_staff/dever/roundup_paper.pdf.

⁵¹ Charles Benbrook, *Impacts of Genetically Engineered Crops on Pesticide Use in the United States: The First Thirteen Years*, at 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>.

⁵² David Mortensen, *et al.*, *Navigating a critical juncture for sustainable weed management*, 62 *Bioscience* 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>.

⁵³ U.S. Dept. of Agriculture, Final Environmental Impact Statement for Determinations of Nonregulated Status for 2,4-D-Resistant Corn and Soybean Varieties, at 134 (August 2014), *available at* http://www.aphis.usda.gov/brs/aphisdocs/24d_feis.pdf.

⁵⁴ Brandon Keim, *New generation of GM crops put agriculture in a ‘crisis situation’*, WIRED (Sept. 25, 2014), *available at* <http://www.wired.com/2014/09/new-gm-crops/>.

pollination, seed mixing, faulty or negligent containment, and weather events.⁵⁵ Unlike standard chemical pollution, transgenic contamination is living pollution that can propagate itself via gene flow.⁵⁶ 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.⁵⁷ In 2009, FWS concluded that should this GE grass be commercially approved and planted, it would likely jeopardize the continued existence of two endangered plants and one endangered butterfly.⁵⁸

Juxtaposed against these significant adverse impacts, independent studies have concluded that GE crops have not resulted in yield increases, whereas traditional breeding has.⁵⁹ A 2014 USDA report summarizing GE crop production stated: "over the first 15 years of commercial use, GMO seeds have not been shown to definitively increase yield potentials, and in fact, the yields of herbicide-tolerant or insect-resistant seeds may be occasionally lower than the yields of conventional varieties."⁶⁰

Endangered and Threatened Species

Endangered and threatened species found on national wildlife refuges include the following species that will likely be harmed by neonicotinoid pesticides and/or the planting of GE crops:

⁵⁵ *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).

⁵⁶ M. Mellon & J. Rissler, Union of Concerned Scientists, *Gone to Seed: Transgenic Contaminants in the Traditional Seed Supply* (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).

⁵⁷ *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>.

⁵⁸ 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>.

⁵⁹ Doug Gurian-Sherman, Union of Concerned Scientists, *Failure to Yield: Evaluating the Performance of Genetically Engineered Crops*, at 1-5 (2009), available at http://www.ucsusa.org/sites/default/files/legacy/assets/documents/food_and_agriculture/failure-to-yield.pdf; Jack A. Heinemann, *Reply to comment on sustainability and innovation in staple crop production in the US Midwest*, 12:4 *Int'l J. of Ag. Sustainability* 387, 387-390 (2014), available at <http://www.tandfonline.com/doi/pdf/10.1080/14735903.2014.939843>.

⁶⁰ USDA, *Genetically Engineered Crops in the United States*, at p.12, 41 (Feb. 2014), available at [https://www.beyondpesticides.org/assets/media/documents/USDA_GE\[smallpdf.com\].pdf](https://www.beyondpesticides.org/assets/media/documents/USDA_GE[smallpdf.com].pdf).

SPECIES	LISTING STATUS	REFUGE FOUND
Lost River Sucker	Endangered	Tule Lake NWR
Lost River Sucker	Endangered	Lower Klamath NWR
Lost River Sucker	Endangered	Clear Lake NWR
Lost River Sucker	Endangered	Upper Klamath NWR
Short-nose Sucker	Endangered	Tule Lake NWR
Short-nose Sucker	Endangered	Upper Klamath NWR
Short-nose Sucker	Endangered	Lower Klamath NWR
Short-nose Sucker	Endangered	Clear Lake NWR
Least Tern (Interior)	Endangered	Bald Knob NWR
Piping Plover	Threatened	Bald Knob NWR
Least Tern (Interior)	Endangered	Overflow NWR
Red-cockaded Woodpecker	Endangered	Felsenthal NWR
Giant Garter Snake	Threatened	Merced NWR
Valley Elderberry Longhorn Beetle	Threatened	Sacramento River NWR
Red Knot	Threatened	Bombay Hook NWR
Red-cockaded Woodpecker	Endangered	Upper Ouachita NWR
Piping Plover	Endangered	Clarence Cannon NWR
Least Tern (Interior)	Endangered	Yazoo NWR
Least Tern (Interior)	Endangered	Hillside NWR
Least Tern (Interior)	Endangered	St. Catherine Creek NWR
Red-cockaded Woodpecker	Endangered	Alligator River NWR
Southwestern Willow Flycatcher	Endangered	Bosque del Apache NWR
Rio Grande Silvery Minnow	Endangered	Bosque del Apache NWR
Least Tern (Interior)	Endangered	Sequoyah NWR
American Burying Beetle	Endangered	Sequoyah NWR
Least Tern (Interior)	Endangered	Reelfoot NWR
Least Tern (Interior)	Endangered	Chickasaw NWR
Least Tern (Interior)	Endangered	Lower Hatchie NWR
Orange-footed Pearly Mussel	Endangered	Tennessee NWR
Pink Mucket Pearly Mussel	Endangered	Tennessee NWR
Ring Pink Mussel	Endangered	Tennessee NWR
Rough Pigtoe	Endangered	Tennessee NWR
Pygmy Madtom	Endangered	Tennessee NWR
Least Tern (Interior)	Endangered	Cross Creeks NWR
Gray Bat	Endangered	Cross Creeks NWR
Indiana Bat	Endangered	Cross Creeks NWR
Gray Bat	Endangered	Wheeler NWR

The above list does not include threatened and endangered species that will be harmed as a result of offsite or downstream transport or other runoff exposure to pesticides as a result of the Service’s action here, which is likely to be additionally significant. Indeed, dozens, if not hundreds, of listed species will likely also be harmed as a result of the increased amounts of pesticides that will runoff into nearby waters after renewed pesticide application events commence.

ESA VIOLATIONS

Consultation under Section 7 of the ESA is required whenever a discretionary agency action “may affect” any listed species or its critical habitat.⁶¹ The “may affect” threshold is very low, and ensures that “actions that have any chance of affecting listed species or critical habitat—even if it is later determined that the actions are ‘not likely’ to do so—require at least some consultation under the ESA.”⁶² According to the Fish and Wildlife Consultation handbook, the “may affect” threshold is met if “a proposed action may pose *any* effects on listed species or designated critical habitat.”⁶³ This analysis includes an examination of both the direct effects of the action as well as its indirect effects, which are defined as “those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur.”⁶⁴ Consultation is still required even if the effects of the action are entirely beneficial or unknown.⁶⁵

Here, because of FWS’s decision, endangered and threatened species on wildlife refuges will immediately experience real world consequences because of the renewed agricultural use of GE crops and neonicotinoid pesticides in the Refuge System. As explained above, the use of neonicotinoid pesticides and/or GE crops in the Refuge System may substantially increase impacts to the above-listed species as well as the quality of their habitats, water, air, and food-sources.

Nevertheless, FWS issued this decision without first initiating consultation activities. This failure violates the procedural and substantive requirements of Section 7 of the ESA.⁶⁶ By issuing this decision without first completing consultation, FWS is in violation of its substantive duty under the Section 7(a)(2) to ensure that its actions do not jeopardize the continued existence of

⁶¹ 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(a) (“Each Federal agency shall review its actions at the earliest possible time to determine whether any action may affect listed species or critical habitat. If such a determination is made, formal consultation is required ...”); *see also Wash. Toxics Coalition v. EPA*, 413 F.3d 1024, 1032 (9th Cir. 2005).

⁶² *Karuk Tribe of Cal. v. U.S. Forest Serv.*, 681 F.3d 1006, 1028 (9th Cir. 2012).

⁶³ U.S. Fish and Wildlife Serv. & Nat’l Marine Fisheries Serv., *Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act* at xvi(1998) (emphasis in original).

⁶⁴ 50 C.F.R. § 402.02.

⁶⁵ *Cal. ex rel. Lockyer v. U.S. Dep’t of Agric.*, 575 F.3d 999, 1018 (9th Cir. 2009) (“*any possible effect*, whether beneficial, benign, adverse or of an undetermined character, triggers the requirement.” (quoting 51 Fed. Reg. 19,926, 19,949 (June 3, 1986) (emphasis in original))); 50 C.F.R. § 402.02 (agency “action” includes “actions intended to conserve listed species or their habitat”).

⁶⁶ 16 U.S.C. § 1536(a)(2).

threatened and endangered species found on refuges.⁶⁷ Similarly, FWS is also in violation of its substantive duty under Section 7(a)(2) to ensure its actions do not result in the destruction or adverse modification of critical habitat.⁶⁸ Under Section 7(d), FWS is further in violation of the ESA for making an irretrievable and irreversible commitment of resources before completing the consultation process.⁶⁹

Not only does this action pass the “may affect” threshold, it also likely exceeds the “likely to adversely affect” threshold as well, thereby triggering the requirement to conduct formal consultation. By failing to do so here, the Service violated Section 7(a)(2) of the Act. Further, by failing to secure an ITS, not only is the Service at risk of violating Section 9 of the Act, but it is also putting every farmer or pesticide applicator that uses these pesticides in the Refuge System at risk of being in violation of the ESA’s take prohibition.

CONCLUSION

If the U.S. Fish and Wildlife Service does not act within 60 days to correct the violations described in this letter, the Centers will initiate litigation in a federal court to resolve this matter. If you have any questions, believe any of the information contained above is in error, or would like to discuss how to resolve these ongoing violations of the ESA without the need for litigation, please do not hesitate to contact Hannah Connor at hconnor@biologicaldiversity.org or (202) 681-1676, or George Kimbrell at gkimbrell@centerforfoodsafety.org or 971-271-7372.

Sincerely,

/s/ Hannah Connor
Senior Attorney
Center for Biological Diversity

/s/ George Kimbrell
Legal Director
Center for Food Safety

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ 16 U.S.C. § 1536(d).