

# COMMENTS

## THE ENDANGERED SPECIES ARE NOT ALRIGHT: THE EPA’S RECENT PROGRESS TRYING TO RECONCILE FIFRA AND THE ESA DOES NOT GO FAR ENOUGH

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INTRODUCTION .....	364
A. <i>The History of Pesticides &amp; The Role of the U.S. Environmental Protection Agency</i> .....	365
B. <i>Pesticides &amp; Endangered Species</i> .....	368
1. <i>DDT</i> .....	368
2. <i>Neonicotinoid Insecticides</i> .....	369
3. <i>Sulfoxaflor Insecticide</i> .....	371
I. THE ESA–FIFRA DILEMMA.....	374
A. <i>The Endangered Species Act</i> .....	375
B. <i>The Federal Insecticide, Fungicide, and Rodenticide Act</i> .....	378
1. <i>Pesticide Registration</i> .....	378
2. <i>Pesticide Cancellation</i> .....	380
C. <i>The Main Conflict</i> .....	380
II. The EPA’s Response to Increased Litigation .....	382
A. <i>Main Takeaways from the EPA’s Workplans</i> .....	382
B. <i>Pilot Programs</i> .....	385
1. <i>Federal Mitigation Pilot Project</i> .....	385
2. <i>Vulnerable Species Pilot Project</i> .....	386
III. RECOMMENDATIONS .....	387

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A. <i>Expand the Pilot Project Initiative to Focus on Cumulative Impacts</i> .....	387
B. <i>Immediately Cancel or Suspend the Use of Sulfoxaflor</i> .....	390
CONCLUSION .....	391

## INTRODUCTION

Over the past few decades, the U.S. Environmental Protection Agency (EPA) has approved over one thousand pesticides and active ingredients for sale and distribution throughout the United States.<sup>1</sup> Pesticides are engineered to indiscriminately harm living things, meaning that they can, and do, unintentionally harm endangered species.<sup>2</sup> Currently, EPA-registered pesticides that harm endangered species are used throughout the United States, primarily on agricultural land, but also on lawns, gardens, schoolyards, and more.<sup>3</sup> The EPA's unwillingness to cancel or suspend pesticides stems from the difficult balancing test between the benefits pesticides provide, such as crop yields and disease prevention, and the harm caused to humans, animals, and the environment.<sup>4</sup> Throughout the registration process, the EPA has failed to meet its obligation under the Endangered Species Act (ESA) to ensure that none of its actions jeopardize any threatened or endangered species.<sup>5</sup> In response, environmental groups have sued the EPA in an effort to revoke or suspend certain pesticide registrations.<sup>6</sup>

1. U.S. ENV'T PROT. AGENCY, *BALANCING WILDLIFE PROTECTION AND RESPONSIBLE PESTICIDE USE: HOW EPA'S PESTICIDE PROGRAM WILL MEET ITS ENDANGERED SPECIES ACT OBLIGATIONS* 9 (2022) [hereinafter *EPA WORKPLAN*].

2. See Jaclyn Lopez, *Can't We Just All Get Along: Reconciling Pesticide Use and Species Protection*, 33 VA. ENV'T. L.J. 184, 202 (2015).

3. See Press Release, Ctr. for Biological Diversity, *EPA: Two Most Widely Used Pesticides Likely Harm Majority of Endangered Species* (Nov. 15, 2021), <https://biologicaldiversity.org/w/news/press-releases/epa-two-most-widely-used-pesticides-likely-harm-majority-of-endangered-species-2021-11-15/> (explaining how glyphosate is "likely causing harm to 1,676 of plants and animals under the Endangered Species Act [(ESA)]").

4. See Stephen C. Weller, Albert K. Culbreath, Leonard Gianessi, Larry D. Godfrey & John C. Palumbo, *The Contributions of Pesticides to Pest Management in Meeting the Global Need for Food Production by 2050*, COUNCIL FOR AGRIC. SCI. & TECH. 1, 2-3 (Nov. 2014), [https://www.ag.ndsu.edu/potatoextension/CAST\\_IP55\\_Contributions\\_of\\_Pesticid\\_4992B5674417F.pdf](https://www.ag.ndsu.edu/potatoextension/CAST_IP55_Contributions_of_Pesticid_4992B5674417F.pdf).

5. See Press Release, Ctr. for Biological Diversity, *supra* note 3; *EPA WORKPLAN*, *supra* note 1 (noting that the U.S. Environmental Protection Agency (EPA) has only met its ESA obligations less than 5% of the time when approving pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)); ESA, 16 U.S.C. § 1536(a)(2).

6. See *EPA WORKPLAN*, *supra* note 1, at 9 (resulting "in over 20 lawsuits against the [EPA] challenging its failure to meet its ESA obligations").

The EPA's main issue is the difficulty in reconciling its obligations under the ESA and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).<sup>7</sup> Attempting to meet both its ESA and FIFRA obligations moving forward, the EPA released a workplan on April 12, 2022, aimed at improving the ESA consultation process when registering pesticides under FIFRA.<sup>8</sup> In November 2022, the EPA released its first Workplan Update, clarifying additional strategies that would expedite the original workplan's progress.<sup>9</sup> By meeting its ESA–FIFRA consultation requirements, the EPA can get ahead of potential litigation while saving time and money.<sup>10</sup> But the workplan omits any willingness to cancel pesticides or to study the cumulative impacts that pesticides can have on protected species.<sup>11</sup>

Part I of this Comment considers the EPA's conflicting roles under FIFRA and the ESA, outlines the ESA section 7 consultation process, and discusses the registration and cancellation process of pesticides under FIFRA. Part II dissects the EPA's newly released workplan by analyzing the EPA's next steps in the development of mitigation strategies, specifically looking at the introduction of pilot projects and their role in investigating mitigation measures. Lastly, Part III proposes the use of pilot projects to further investigate the cumulative impacts that pesticides have on protected species from either a species-by-species or geographic approach. Part III also suggests that the EPA submit a notice of intent to cancel the insecticide sulfoxaflor, or alternatively, file an emergency order immediately suspending the use while the EPA considers public comments and reevaluates the expanded pesticide use in response to the Ninth Circuit's order.<sup>12</sup>

#### A. *The History of Pesticides & the Role of the U.S. Environmental Protection Agency*

Pesticides are deeply rooted in the history of human agriculture. Scientists have traced pesticide use back to between 2500–1500 B.C., when the

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7. See *infra* Part I.C.

8. See generally EPA WORKPLAN, *supra* note 1.

9. U.S. ENV'T PROT. AGENCY, ESA WORKPLAN UPDATE: NONTARGET SPECIES MITIGATION FOR REGISTRATION REVIEW AND OTHER FIFRA ACTIONS 15 (2022) [hereinafter ESA WORKPLAN UPDATE].

10. See EPA WORKPLAN, *supra* note 1, at 9 (stating that the old approach to handling ESA considerations was expensive for the EPA).

11. See generally *id.*

12. Press Release, Earthjustice, EPA to Reconsider the use of Bee-Killing Pesticide Sulfoxaflor (Dec. 21, 2022), <https://earthjustice.org/news/press/2022/epa-to-reconsider-the-use-of-bee-killing-pesticide-sulfoxaflor> (giving the EPA 180 days to prepare a new decision on sulfoxaflor).

Sumerians and Chinese used them for insect and disease control.<sup>13</sup> In the late 1930s, the development and use of synthetic pesticides increased leading up to World War II.<sup>14</sup> Between 1960 and 1981, pesticide use tripled in the United States from 196 million pounds to 632 million pounds.<sup>15</sup> Currently, farmers use 1 billion pounds of conventional pesticides each year in an effort to control weeds and other pests, costing farmers \$17.22 billion nationwide.<sup>16</sup>

FIFRA defines pesticide as “any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest . . . .”<sup>17</sup> Pesticide, an umbrella term, encompasses chemicals such as herbicides, insecticides, and fungicides.<sup>18</sup> Herbicides kill weeds and unwanted vegetation, insecticides kill insects, and fungicides stop mold and mildew growth.<sup>19</sup> Pesticide benefits include increases in crop yields and prevention of insect-borne diseases.<sup>20</sup> Scientific studies have examined the difference between pesticide-treated crop yields and crop yields “using standard practices.”<sup>21</sup> The results showed a 24% yield increase for cucumbers, a 167% yield increase for peaches, a 29% yield increase for potatoes, and a 160% yield increase for rice when treated with an herbicide.<sup>22</sup> In similar scientific studies, fungicides used to stop leaf spot, stem rot, and white mold

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13. See Weller et al., *supra* note 4, at 2 (noting the early use of sulfur compounds and botanicals to deal with pests).

14. *Id.* at 2, 11 (explaining that “tremendous activity” in the 1930s led to the development of synthetic and biological pesticides used in and after World War II); see also ECON. RSCH. SERV., U.S. DEPT OF AGRIC., ECON. INFO. BULL. NO. 124, PESTICIDE USE IN U.S. AGRICULTURE: 21 SELECTED CROPS, 1960–2008 1 (2014) [hereinafter PESTICIDE USE IN U.S. AGRICULTURE] (noting that before World War II, farmers managed pests using cultural practices and a few inorganic pesticides, but after World War II, farmers turned to synthetic organic materials).

15. See PESTICIDE USE IN U.S. AGRICULTURE, *supra* note 14, at 11 (detailing the inflation of pesticide use in the United States from 468 million pounds in 1987 to 516 million pounds in 2008).

16. Ohio-Ky.-Ind. Water Sci. Ctr., *Pesticides*, U.S. GEO. SURV. (Mar. 23, 2017), <https://www.usgs.gov/centers/ohio-kentucky-indiana-water-science-center/science/pesticides#overview>; see Shelby Myers, *Analyzing Farm Inputs: The Cost to Farm Keeps Rising*, AM. FARM BUREAU FED’N (Mar. 17, 2022), <https://www.fb.org/market-intel/analyzing-farm-inputs-the-cost-to-farm-keeps-rising> (calculating the rise in average pesticide consumption costs from \$16.91 billion in 2021 to \$17.22 billion in 2022 because of global inflation, increased crop demand, and supply chain impacts from Russia’s invasion into Ukraine).

17. 7 U.S.C. § 136(u).

18. *Pesticides*, NAT’L INST. OF ENV’T HEALTH SCIS., <https://www.niehs.nih.gov/health/topics/agents/pesticides/index.cfm> (Mar. 7, 2023).

19. *Id.*

20. Ohio-Ky.-Ind. Water Sci. Ctr., *supra* note 16.

21. See Weller et al., *supra* note 4, at 8, 12.

22. *Id.* at 12.

increased peanut cultivar yields by more than 190%.<sup>23</sup>

Pesticides are successful because they contain toxic chemicals that have the potential to harm the environment, animals, and human health.<sup>24</sup> The public has not always known of these risks. It was not until the publication of Rachel Carson's book, *Silent Spring*, that people began to understand the dangers of pesticides.<sup>25</sup>

Before a pesticide may be distributed within the United States, the EPA must register it in accordance with FIFRA.<sup>26</sup> The EPA has not always held this major responsibility.<sup>27</sup> When Congress first passed FIFRA in 1947, it granted the U.S. Department of Agriculture (USDA) the responsibility of pesticide regulation, primarily because the EPA had yet to be established.<sup>28</sup> In 1970, President Richard Nixon established the EPA to address the growing public concern about air, water, and land pollution and to ensure the protection and enhancement of the environment.<sup>29</sup> Specifically in his Reorganization Plan, President Nixon noted that the duties of the Secretary of Agriculture and the USDA under FIFRA would become the EPA's responsibility.<sup>30</sup>

Since 1970, the responsibility of pesticide registration and reregistration has expanded; the EPA now bears responsibility for more than 17,000 registered pesticides that contain more than 1,200 active ingredients.<sup>31</sup>

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23. *Id.* at 8.

24. *See* PESTICIDE USE IN U.S. AGRICULTURE, *supra* note 14, at 1 (explaining that “[h]uman health risks can result from direct exposure of farm workers to pesticides or from consumer exposure to pesticide residues on foods.”).

25. *See* Eliza Griswold, *How ‘Silent Spring’ Ignited the Environmental Movement*, N.Y. TIMES MAG. (Sept. 21, 2012), <https://www.nytimes.com/2012/09/23/magazine/how-silent-spring-ignited-the-environmental-movement.html> (quoting Carl Safina, an oceanographer and MacArthur Fellow, who explained, “[n]o one had ever thought that humans could create something that could create harm all over the globe and come back and get in our bodies.”).

26. *See* 7 U.S.C. § 136a(a) (“[N]o person in any State may distribute or sell to any person any pesticide that is not registered under this subchapter.”).

27. *See* *Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and Federal Facilities*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/enforcement/federal-insecticide-fungicide-and-rodenticide-act-fifra-and-federal-facilities> (Mar. 7, 2023).

28. *See id.* (requiring that “persons register pesticides distributed in interstate commerce with the U.S. Department of Agriculture (USDA)”); *EPA History: The Origins of EPA*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/history/origins-epa> (June 24, 2022).

29. Reorganization Plan No. 3 of 1970, 35 Fed. Reg. 15,623 (1970).

30. *Id.*

31. *See* EPA WORKPLAN, *supra* note 1, at 10 (noting that the EPA has to consider stakeholders, including “88 million households, more than two million farms, 23,000 commercial pest control firms, a dozen major pesticide producers, another 100 small producers, 17,000 pesticide formulators, 25,000 distributors,” and more).

When the EPA determines whether to register or reregister a pesticide under FIFRA, it must consider the labeling, the formula, and the tests that support the registration and use of the pesticide.<sup>32</sup>

The EPA has fallen behind on its responsibilities related to pesticide registration, specifically its obligations under the ESA.<sup>33</sup> An example of this shortcoming first appeared with dichloro-diphenyl-trichloroethane, better known as DDT.

## B. Pesticides & Endangered Species

### 1. DDT

DDT was initially used during World War II to control malaria, typhus, body lice, and the bubonic plague.<sup>34</sup> In 1959, the use of DDT peaked at around 79 million pounds, and the USDA considered it “essential” to control pests such as budworms, cotton fleahoppers, garden webworms, and others.<sup>35</sup> Though DDT provided great benefits, it also imposed great harm to animals and human health.<sup>36</sup> In laboratory tests, animals exposed to DDT developed tremors, convulsions, and liver changes if exposed over a long period of time.<sup>37</sup>

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32. See 7 U.S.C. § 136a(c)(1)(A)–(F), (2)(A) (requiring the name and address of the applicant, the name of the pesticide, the pesticide label including any claims to be made for it and its directions, the formula of the pesticide, whether the pesticide is to be classified for general or restricted use, and any tests with results to support use claims).

33. See EPA WORKPLAN, *supra* note 1, at 9 (blaming limited information on protected species to explain why the EPA has struggled to meet its ESA obligations).

34. See Griswold, *supra* note 25 (explaining how “DDT applied to [human] skin in powder form proved an effective means to control lice in soldiers.”); see also NAT’L PESTICIDE INFO. CTR., DDT: GENERAL FACT SHEET (1999), <http://npic.orst.edu/factsheets/ddtgen.pdf> (noting that because of DDT use, “[c]ases of malaria fell from 400,000 in 1946 to virtually none in 1950.”).

35. U.S. ENV’T PROT. AGENCY, EPA-540/1-75-022, DDT: A REVIEW OF SCIENTIFIC AND ECONOMIC ASPECTS OF THE DECISION TO BAN ITS USE AS A PESTICIDE 148, 163 (1975); SUHAS S. VYAVHARE & DAVID KERNS, TEX. A&M AGRILIFE EXTENSION, ENTO-073, COTTON FLEAHOPPERS, 1–2 (2017), [http://lubbock.tamu.edu/files/2017/06/Cotton-flea-hopper\\_ENTO073.pdf](http://lubbock.tamu.edu/files/2017/06/Cotton-flea-hopper_ENTO073.pdf) (detailing how the cotton fleahopper sucks sap out of plants, interfering with the growth pattern of cotton plants and heavy fruit loss in preflowering plants); *Budworms*, THE DAILY GARDEN (Sept. 21, 2016), <https://www.thedailygarden.us/garden-word-of-the-day/budworms> (describing how budworm larvae will “burrow into small flower buds” and emerge to “feed on nearby mature flowers and leaves”).

36. *Dichlorodiphenyltrichloroethane (DDT) Factsheet*, CTRS. FOR DISEASE CONTROL & PREVENTION, [https://www.cdc.gov/biomonitoring/DDT\\_FactSheet.html](https://www.cdc.gov/biomonitoring/DDT_FactSheet.html) (Aug. 16, 2021).

37. NAT’L PESTICIDE INFO. CTR., *supra* note 34.

The concerns about the negative effects that pesticides have on human health and the environment have increased over time.<sup>38</sup> For example, DDT contributed to the decline of the bald eagle.<sup>39</sup> As the use of DDT increased, so did the residues that “washed into nearby waterways, where aquatic plants and fish absorbed it.”<sup>40</sup> The chemicals that bald eagles consumed by eating DDT-contaminated fish inhibited them from creating strong eggshells.<sup>41</sup> The eggs broke during incubation or, alternatively, would not hatch, pushing the species to the edge of extinction.<sup>42</sup> The EPA issued a cancellation order for DDT in 1972, discontinuing its use within the United States.<sup>43</sup>

## 2. *Neonicotinoid Insecticides*

The harm caused by neonicotinoid insecticides, currently the single most popular insecticide class in the United States, came to light recently.<sup>44</sup> Neonicotinoids are effective agents against pests because they bind to pests’ nerve cells, overstimulate them, and destroy them.<sup>45</sup> Pest managers, agrochemical companies, and farmers apply neonicotinoids directly to the soil near the plant’s roots or to the seed as a coating, allowing the plant to absorb the active ingredients and become toxic.<sup>46</sup> Studies conducted by

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38. See, e.g., *More Than 100 Organizations Call for Expeditious Action to Ban Chlorpyrifos*, HUM. RTS. WATCH (Mar. 8, 2021, 9:26 AM), <https://www.hrw.org/news/2021/03/08/more-100-organizations-call-expeditious-action-ban-chlorpyrifos> (documenting how groups of farmworkers, public health groups, environmental, labor, and faith organizations came together to ask the EPA to ban chlorpyrifos because of its associated neurodevelopmental harm to children).

39. *Bald Eagle*, U.S. FISH & WILDLIFE SERV. (Feb. 2021), <https://www.fws.gov/sites/default/files/documents/bald-eagle-fact-sheet.pdf>.

40. *Id.*

41. *Id.*

42. See *id.* (noting that by 1963, there were “only 417 nesting pairs of bald eagles known to exist,” compared to 1782 where it was thought that the United States had “as many as 100,000 nesting eagles”).

43. See *DDT – A Brief History and Status*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/ingredients-used-pesticide-products/ddt-brief-history-and-status> (Apr. 3, 2023).

44. See Courtney Lindwall, *Neonicotinoids 101: The Effects on Humans and Bees*, NAT. RES. DEF. COUNCIL (May 25, 2022), <https://www.nrdc.org/stories/neonicotinoids-101-effects-humans-and-bees> (explaining that neonicotinoids are commonly used on “agricultural crops, gardens, golf courses, and in flea and tick pet treatments”).

45. See *id.* (describing how the insects that come into contact with neonicotinoids will “exhibit uncontrollable shaking and twitching followed by paralysis,” and even at nonlethal doses the insect’s immune system, stamina, memory, and fertility will be weakened).

46. See *id.* (spraying neonicotinoids only puts 2%–5% to five percent on the actual plant, leaving close to 95% in the soil where it can remain active for years or be carried by water

Cornell University and a major pesticide industry-funded study showed that neonicotinoid pesticides are the leading cause of the bee population decline.<sup>47</sup> As a result of the population loss, the U.S. Fish and Wildlife Service (FWS) listed the rusty patched bumble bee on the endangered species list in 2017.<sup>48</sup> Additionally, neonicotinoids cause songbirds to lose weight and migrate later, and cause deer's jaws to become malformed, resulting in shorter lifespans.<sup>49</sup>

The concern about neonicotinoid pesticides led the Center for Food Safety to sue the EPA on behalf of beekeepers in 2017.<sup>50</sup> The EPA conceded that it had not consulted with either the FWS or the National Marine Fisheries Service (NMFS), nor had it given the pesticide registrations a “no-effect” determination, which would have made an ESA consultation unnecessary.<sup>51</sup> Due to the EPA’s failure to consult, the U.S. District Court for the Northern District of California held that the EPA violated the ESA when it “unlawfully issued” fifty-nine registrations for neonicotinoid pesticides and ordered the EPA to make ESA determinations for the pesticides themselves.<sup>52</sup> Stemming from this court order, on June 16, 2022, the EPA released its final Biological Evaluations (BEs) for clothianidin, imidacloprid, and thiamethoxam, three neonicotinoid insecticides, after evaluating the effects on 1,821 listed species and 791 designated critical habitats.<sup>53</sup>

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into new areas); *see also* S. D. Frank & J. F. Tooker, Opinion, *Neonicotinoids Pose Undocumented Threats to Food Webs*, 117 PNAS 22609 (2020), <https://www.pnas.org/doi/epdf/10.1073/pnas.2017221117>.

47. *See* Lindwall, *supra* note 44 (explaining that between April 2020 and 2021, beekeepers lost over 45% of their honeybee colonies).

48. *See id.* (noting that the rusty patched bumble bee was the “first bee in the continental United States to make the endangered species list.”).

49. Sharon Lerner, *The Department of Yes: How Pesticide Companies Corrupted the EPA and Poisoned America*, THE INTERCEPT (June 30, 2021, 11:35 AM), <https://theintercept.com/2021/06/30/epa-pesticides-exposure-opp/>.

50. *CFS Victory! Court Holds Bee-killing Pesticide Approvals Violated the Law*, CTR. FOR FOOD SAFETY (May 9, 2017) [hereinafter *CFS Victory*], <https://www.centerforfoodsafety.org/press-releases/4940/cfs-victory-court-holds-bee-killing-pesticide-approvals-violated-the-law>.

51. *Ellis v. Housenger*, 252 F. Supp. 3d 800, 820 (N.D. Cal. 2017).

52. *See id.* at 820, 826; *CFS Victory*, *supra* note 50; Press Release, Ctr. for Food Safety, Pursuant to CFS Litigation Settlement, EPA Releases Evaluations Showing Severe Risk to Endangered Species from Neonic Pesticides (Aug. 26, 2021), <https://centerforfood.org/press-releases/6443/pursuant-to-cfs-litigation-settlement-epa-releases-evaluations-showing-severe-risk-to-endangered-species-from-neonic-pesticides>.

53. *See EPA Finalizes Biological Evaluations Assessing Potential Effects of Three Neonicotinoid Pesticides on Endangered Species*, U.S. ENV'T PROT. AGENCY (June 23, 2022) [hereinafter *Final Neonicotinoid Biological Evaluations*], <https://www.epa.gov/pesticides/epa-finalizes-biological-evaluations-assessing-potential-effects-three-neonicotinoid> (noting that the purpose of the biological evaluations is “to determine whether they may affect one of more federally listed



The BE results confirmed what scientists and environmentalist groups had assumed: these pesticides harm more than just the bees.<sup>54</sup> Results demonstrated that clothianidin likely adversely affects 67% of species and 56% of critical habitats.<sup>55</sup> The EPA determined that imidacloprid likely adversely affects 79% of species and 83% of critical habitats.<sup>56</sup> Lastly, the EPA found that thiamethoxam likely adversely affects 77% of species and 81% of critical habitats.<sup>57</sup> Because of the “likely to adversely affect” determinations, the EPA began formal consultations with the FWS and the NMFS.<sup>58</sup> During the consultation process, the agencies will develop a biological opinion to determine if these pesticides will “jeopardize” any endangered species or “adversely modify its critical habitat.”<sup>59</sup>

### 3. Sulfoxaflor Insecticide

Another controversial insecticide is sulfoxaflor. Sulfoxaflor attacks the central nervous system of insects and has been linked to the decline of pollinators and small mammals such as chipmunks, shrews, and bats.<sup>60</sup> Honey bees that ingest sulfoxaflor demonstrate reduced larvae emergence,

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endangered or threatened (listed) species or their designated critical habitats.”); *see also* U.S. ENV’T PROT. AGENCY, THIAMETHOXAM EXECUTIVE SUMMARY FOR BIOLOGICAL EVALUATION 4–5 (2022); U.S. ENV’T PROT. AGENCY, CLOTHIANIDIN EXECUTIVE SUMMARY FOR BIOLOGICAL EVALUATION 5–6 (2022); U.S. ENV’T PROT. AGENCY, IMIDACLOPRID EXECUTIVE SUMMARY FOR BIOLOGICAL EVALUATION 3–5 (2022).

54. *See* Jim Daley, *Safety Concerns Mount Over Neonicotinoid Pesticides in Unexpected Places*, PBS NEWS HOUR (May 6, 2019, 12:36 PM), <https://www.pbs.org/newshour/health/safety-concerns-mount-over-neonicotinoid-pesticides-in-unexpected-places> (describing the observations of a wildlife ecologist and ecotoxicologist who documented neonicotinoid impacts on deer and songbirds).

55. In the report, the EPA concluded that clothianidin “[w]ill have no effect on [14 %] of species and [17%] of critical habitats[, and] [m]ay affect but is not likely to adversely affect [19%] of species and [27%] of critical habitats . . . .” *See Final Neonicotinoid Biological Evaluations, supra* note 53.

56. The EPA also found that imidacloprid “[w]ill have no effect on [11%] of species and [10%] of critical habitats[, and] [m]ay affect but is not likely to adversely affect [9%] of species and [7%] of critical habitats . . . .” *See id.*

57. Additionally, the EPA found that thiamethoxam will have “no effect” on 12% of species and 11% of critical habitats. Thiamethoxam “may affect but is not likely to adversely affect [11%] of species and [7%] of critical habitats . . . .” *See id.*

58. *Id.*

59. *Id.*; ESA, 16 U.S.C. § 1536(a)(2).

60. *See* Tara Cornelisse, Nathan Donley & Lori Ann Burd, *The Facts on Sulfoxaflor*, CTR. FOR BIOLOGICAL DIVERSITY 1, 4 (Aug. 2019), [https://www.biologicaldiversity.org/campaigns/pesticides\\_reduction/pdfs/Sulfoxaflor\\_Facts.pdf](https://www.biologicaldiversity.org/campaigns/pesticides_reduction/pdfs/Sulfoxaflor_Facts.pdf) (exposing small mammals to sulfoxaflor resulted in a “significant increase in the death of newborn pups,” due to uncontrollable muscle tightening).

and adults present a lower appetite.<sup>61</sup> Aquatic freshwater macroinvertebrates exposed to sulfoxaflor show decreased reproduction levels and lower adulthood survival rates of aquatic fly larvae.<sup>62</sup> As aquatic freshwater macroinvertebrates serve as prey for fish, amphibians, reptiles, birds, and mammals, a drastic decline in this food source could impact the entire ecosystem.<sup>63</sup>

The EPA initially registered sulfoxaflor in 2013 for various crops until the Ninth Circuit revoked the registration based on the lack of scientific evidence provided to prove pollinator safety.<sup>64</sup> The EPA pulled sulfoxaflor pesticide products from the market in 2015.<sup>65</sup> Due to sulfoxaflor's widespread use, the suspension did not last, and the EPA quickly worked to reregister sulfoxaflor in 2016.<sup>66</sup> To ensure a successful reregistration, the EPA reevaluated the data and only approved sulfoxaflor use on crops that do not attract pollinators and on crops where sulfoxaflor would be applied only when pollinators would be absent.<sup>67</sup> On July 12, 2019, the EPA released a memorandum in support of expanding the uses of sulfoxaflor on various crops and specifically noted that the "EPA ha[d] not made an effects

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61. See *id.* at 1–2 (describing sulfoxaflor as being "very highly toxic" to honey bees at all life stages when exposed on a short-term basis"); see also Kate Anton & Christina Grozinger, *An Introduction to Queen Honey Bee Development*, PENNSTATE EXTENSION, <https://extension.psu.edu/an-introduction-to-queen-honey-bee-development> (Dec. 8, 2022) (defining the term "emerge" to mean "when a bee emerges from its cell as an adult").

62. See Cornelisse et al., *supra* note 60, at 3.

63. See Stacy Stumpf, Patty Valentine-Darby & Evan Gwilliam, *Aquatic Macroinvertebrates – Ecological Role*, NAT'L PARK SERV., <https://www.nps.gov/articles/aquatic-macroinvertebrates-ecological-role.htm> (May 12, 2015) (listing the other ecological roles of aquatic macroinvertebrates as being the processing of live organic material and consuming other macroinvertebrates).

64. Cornelisse et al., *supra* note 60, at 1.

65. See Britt E. Erickson, *Sulfoxaflor Pesticide Returns to U.S. Market*, CHEM. & ENG'G NEWS (July 15, 2019), <https://cen.acs.org/environment/pesticides/Sulfoxaflor-pesticide-returns-US-market/97/web/2019/07> (noting that "the EPA has also granted emergency exemptions to use sulfoxaflor on sorghum and cotton.").

66. See *States, Environmental Groups Challenge EPA Over Sulfoxaflor*, NAT'L AGRIC. L. CTR. (Feb. 4, 2021) [hereinafter *Challenge Over Sulfoxaflor*], <https://nationalaglawcenter.org/states-environmental-groups-challenge-epa-over-sulfoxaflor/> (describing the tighter use restrictions on the 2016 registration compared to the 2013 registration and how the 2016 registration restricted the use of sulfoxaflor to crops that are "not attractive to pollinators"); see also *EPA Finds New Insecticide is Putting Over 100 Species in Jeopardy of Extinction: Sulfoxaflor Likely Harms More than One-Third of Protected Plants, Animals*, CTR. FOR BIOLOGICAL DIVERSITY (July 19, 2022), <https://biologicaldiversity.org/w/news/press-releases/epa-finds-new-insecticide-is-putting-over-100-species-in-jeopardy-of-extinction-2022-07-19/> (noting how the EPA approved uses of sulfoxaflor across more than 200 million acres).

67. See *Sulfoxaflor*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/ingredients-used-pesticide-products/sulfoxaflor> (Mar. 30, 2023).

determination for sulfoxaflor” with respect to endangered species, admitting to a violation of the ESA.<sup>68</sup> The EPA published sulfoxaflor’s draft BE on July 19, 2022, after analyzing the pesticides effects on 1,709 species.<sup>69</sup> The EPA found that sulfoxaflor will likely jeopardize 7% of listed species and adversely modify 4% of critical habitats.<sup>70</sup>

The Center for Food Safety challenged the EPA’s registration of sulfoxaflor in court, arguing that the EPA violated its obligations under the ESA by not considering the effects on endangered species before reregistering the pesticide.<sup>71</sup> The EPA agreed that it violated its ESA obligations, but controversially requested that the Ninth Circuit send the pesticide registration back to the Agency for review while allowing continued sulfoxaflor use until it determined the effects on endangered species.<sup>72</sup> The Ninth Circuit handed down its decision on December 21, 2022, allowing the sulfoxaflor registration to remain in place.<sup>73</sup> But the Ninth Circuit also ordered the EPA to reconsider its decision to expand sulfoxaflor use after concluding that the EPA had “violated federal law by approving additional uses for sulfoxaflor without any public notice and by failing to evaluate impacts on imperiled species.”<sup>74</sup>

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68. See U.S. ENV’T PROT. AGENCY, EPA-HQ-OPP-2010-0889, DECISION MEMORANDUM SUPPORTING THE REGISTRATION DECISIONS FOR NEW USES OF THE ACTIVE INGREDIENT SULFOXAFLOR 10 (2019) (recommending use on alfalfa, cacao, citrus, corn, cotton, cucurbits, grains, pineapple, sorghum, soybeans, strawberries, and tree plantations).

69. See U.S. ENV’T PROT. AGENCY, DRAFT SULFOXAFLOR BIOLOGICAL EVALUATION: EFFECTS DETERMINATION FOR FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES AND DESIGNATED CRITICAL HABITATS 12–13 (2022) [hereinafter DRAFT SULFOXAFLOR BIOLOGICAL EVALUATION] (finding that sulfoxaflor will jeopardize 120 species and thirty-two critical habitats); see also *EPA Releases Draft Assessment of Effects of Sulfoxaflor on Endangered Species for Public Comment*, U.S. ENV’T PROT. AGENCY (July 20, 2022) [hereinafter *EPA Sulfoxaflor Draft Assessment Release*], <https://www.epa.gov/pesticides/epa-releases-draft-assessment-effects-sulfoxaflor-endangered-species-public-comment>.

70. See *EPA Sulfoxaflor Draft Assessment Release*, *supra* note 69 (noting that sulfoxaflor will cause no effect to 36% of listed species and 52% of critical habitats and “[m]ay affect but is not likely to adversely affect 30 percent of listed species and 35 percent of critical habitats”).

71. See *Challenge Over Sulfoxaflor*, *supra* note 66.

72. *Id.*; Press Release, Ctr. for Biological Diversity, Federal Court Rejects Bid by EPA, Pesticide Industry to Keep Bee-Killing Sulfoxaflor on Market Despite Risks to Endangered Species (Jan. 12, 2021), <https://biologicaldiversity.org/w/news/press-releases/federal-court-rejects-bid-epa-pesticide-industry-keep-bee-killing-pesticide-sulfoxaflor-market-despite-risks-endangered-species-2021-01-12/>.

73. See Todd Neeley, *Court Rules Against EPA on Sulfoxaflor*, PROGRESSIVE FARMER (Dec. 27, 2022), <https://www.dtnpf.com/agriculture/web/ag/news/article/2022/12/27/epa-granted-six-months-conduct-act>; see also *Ctr. for Food Safety v. Regan*, 56 F.4th 648, 652 (9th Cir. 2022) (declining to vacate sulfoxaflor’s registration because of the potential harm to the agricultural economy).

74. See *Earthjustice*, *supra* note 12.

Moving forward, the EPA has two main tasks with respect to sulfoxaflor. First, stemming from the Ninth Circuit's order, the EPA has 180 days to invite public comments on the proposed expanded uses and prepare a new sulfoxaflor registration decision.<sup>75</sup> Due to the Ninth Circuit's 180-day timeline, the EPA will have to release the new decision by the end of June 2023.<sup>76</sup> In an effort to meet its first task, the EPA published the sulfoxaflor registration action in the Federal Register on February 23, 2023.<sup>77</sup> Comments were allowed until March 27, 2023.<sup>78</sup> Second, the EPA will conduct a final BE looking to implement mitigation measures that will protect listed species under the ESA, allowing for sulfoxaflor's continued use and sale within the United States.<sup>79</sup>

### I. THE ESA–FIFRA DILEMMA

One of the main issues contributing to rising tensions between the EPA and environmental groups is that, for decades, the EPA failed to conduct section 7 consultations under the ESA when registering potentially jeopardizing pesticides under FIFRA.<sup>80</sup>

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75. *See id.*; *see also* Press Release, Ctr. for Biological Diversity, Legal Victory: Court Rules EPA's Registration of Bee-Killing Insecticide Unlawful, Citing Failure to Assess Risks to Endangered Species (Dec. 21, 2022), <https://biologicaldiversity.org/w/news/press-releases/legal-victory-court-rules-epas-registration-of-bee-killing-insecticide-unlawful-citing-failure-to-assess-risks-to-endangered-species-2022-12-21/>.

76. *See* Neeley, *supra* note 73.

77. Sulfoxaflor; Pesticide Product Registration; Notice of Receipt and Request for Comments, 88 Fed. Reg. 11,437 (Feb. 23, 2023).

78. *See id.* (receiving 12,207 comments before the comment period closed). At the time of this comment's publication, the EPA had received comments but had not yet acted upon them or made any decision with regard to the sulfoxaflor registration."

79. *See EPA Sulfoxaflor Draft Assessment Release*, *supra* note 69 (explaining that if the EPA finds, even after implementing mitigation measures, that sulfoxaflor is likely to adversely affect listed species, it must initiate formal consultation with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS)). At the time of this comment's publication, the EPA had not yet released sulfoxaflor's final Biological Evaluation.

80. *See EPA Adopts New Policy for ESA Consultations & New Pesticide Active Ingredients*, NAT'L AGRIC. L. CTR. (Jan. 20, 2022), <https://nationalaglawcenter.org/epa-adopts-new-policy-for-esa-consultations-new-pesticide-active-ingredients/> (noting that the EPA's January 11, 2022 announcement explained that the EPA will evaluate the potential effects of a new active ingredient on a listed species before registering the active ingredient for use); *see also EPA Announces Endangered Species Act Protection Policy for New Pesticides*, U.S. ENV'T PROT. AGENCY (Jan. 11, 2022), <https://www.epa.gov/newsreleases/epa-announces-endangered-species-act-protection-policy-new-pesticides>.

### A. *The Endangered Species Act*

Congress passed the ESA in 1973 intending to “halt and reverse the trend toward species extinction, whatever the cost.”<sup>81</sup> Two main purposes of the ESA are to: (1) “provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved,” and (2) “provide a program for conservation of such endangered and threatened species.”<sup>82</sup> The FWS and the NMFS (collectively the Services) primarily administer the ESA, which currently protects over 1,300 species.<sup>83</sup>

The ESA requires all federal agencies to consult with the Services to ensure that federal actions are “not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat of such species . . . .”<sup>84</sup> This process is commonly referred to as a section 7 consultation.<sup>85</sup> First, the action agency and the Services begin an informal consultation to determine if the Action will affect any species or critical habitat.<sup>86</sup> This informal consultation ends with the agency producing a biological assessment to determine if the agency’s Action will or will not adversely affect a listed species.<sup>87</sup> Upon determination that the Action *will* affect a protected species or critical habitat, the agency and the Services enter into formal consultation.<sup>88</sup>

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81. *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 184 (1978); ESA, 16 U.S.C. § 1531(b).

82. 16 U.S.C. § 1531(b); *see also Learn More About Threatened and Endangered Species*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/endangered-species/learn-more-about-threatened-and-endangered-species> (Apr. 3, 2023) (differentiating endangered and threatened species by stating “[e]ndangered species are those plants and animals that have become so rare they are in danger of becoming extinct . . . [while] [t]hreatened species are plants and animals that are likely to become endangered within the foreseeable future throughout all or a significant portion of its range.”).

83. *See ESA Basics: 40 Years of Conserving Endangered Species*, U.S. FISH & WILDLIFE SERV. (Feb. 2017), <https://www.fws.gov/sites/default/files/documents/endangered-species-act-basics.pdf> (explaining how the “FWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of the NMFS are mainly marine wildlife”); *Endangered Species: Species Information (Factsheets)*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/endangered-species/endangered-species-species-information-factsheets> (June 14, 2022).

84. 16 U.S.C. § 1536(a)(2); *see also* PERVAZE A. SHEIKH, ERIN H. WARD & R. ELIOT CRAFTON, CONG. RSCH. SERV., R46677, *THE ENDANGERED SPECIES ACT: OVERVIEW AND IMPLEMENTATION* 31 (2021).

85. *ESA Section 7 Consultation*, U.S. FISH & WILDLIFE SERV., <https://www.fws.gov/service/esa-section-7-consultation> (last visited May 9, 2023).

86. *Id.*

87. *See* SHEIKH ET AL., *supra* note 84, at 32 (requiring the biological opinion to describe the Action, any potential impacts, and any “activities the agency plans to undertake to mitigate the adverse effects of the [A]ction.”).

88. *See ESA Section 7 Consultation*, *supra* note 85 (emphasis added).

Upon receiving the biological assessment, the Services must conduct a formal assessment to determine whether the proposed Action will jeopardize any endangered or threatened species.<sup>89</sup> Due to legal challenges and controversy over how to interpret the “jeopardy standard,” the Services created a nine-step consultation framework to ensure that the process is “transparent, replicable, and supported by a complete series of well-reasoned arguments.”<sup>90</sup>

The first step is to “[i]dentify the Action.”<sup>91</sup> After the Services identify and properly describe the federal Action, they must “deconstruct” the Action in step two.<sup>92</sup> Deconstructing the Action allows the Services to better understand the environmental stressors and environmental subsidies that can result from the Action.<sup>93</sup> Through deconstruction, the Services describe four features of the Action: (1) the “specific physical, chemical, and biotic phenomena . . . that are likely to result;” (2) how intense the stressors are in the environment; (3) the “spatial distribution of th[os]e stressors;” and (4) the “temporal distribution of the stressors at particular intensities.”<sup>94</sup>

Step three requires the Services to identify the area where the Action would have its direct or indirect effects.<sup>95</sup> Because the environment changes constantly, the Services monitor the stressors as they move across lands and waters over time.<sup>96</sup> Step four requires the Services to assess how threatened and endangered species will come into contact with the stressors that result from the Action.<sup>97</sup> This exposure analysis relies heavily on biologists’ knowledge of the species’ developmental patterns, the species’ distribution, the species’ ecological relationships to determine the exposure, and the impact to the species.<sup>98</sup> If the Services determine that the species would be exposed to a stressor created by the Action, step five analyzes the species’

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89. SHEIKH ET AL., *supra* note 84, at 33 (emphasis added).

90. NAT’L OCEANIC & ATMOSPHERIC ADMIN., AN ASSESSMENT FRAMEWORK FOR CONDUCTING JEOPARDY ANALYSES UNDER SECTION 7 OF THE ENDANGERED SPECIES ACT 1 (2004) [hereinafter JEOPARDY ANALYSIS FRAMEWORK].

91. *See id.* at 2 (“By regulation, an Action for a consultation includes all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal Agencies in the United States or upon the high seas.”).

92. *Id.* at 3.

93. *See id.* (defining environmental stressors to mean “physical, chemical, or biotic stressors that are directly or indirectly caused by the Action and, for indirect effects, ‘are reasonably certain to occur’”).

94. *Id.*

95. *Id.*

96. *Id.*

97. *Id.*

98. *Id.* at 3–4.

response.<sup>99</sup> Steps six and seven further this analysis by working to understand how the stressors may affect individuals and the population as a whole.<sup>100</sup> Step eight examines the risk to the species as a whole, and Services' biologists conclude whether the Action would jeopardize the continued existence of the threatened or endangered species during step nine.<sup>101</sup>

After concluding the formal consultation, the Services prepare and release a biological opinion that states whether the Action will jeopardize any protected species or critical habitats.<sup>102</sup> Within the biological opinion, the appropriate Secretary "must suggest any *reasonable and prudent alternatives*" that minimize the harm to the species.<sup>103</sup> With respect to biological opinions produced as a response to pesticide use, four final biological opinions under NMFS have resulted in jeopardy determinations for Pacific salmonoids.<sup>104</sup> Section 7 consultations ensure that federal agency actions do not impact endangered species, but the EPA has only met its ESA section 7 obligations under FIFRA when faced with court orders or threats of litigation.<sup>105</sup>

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99. *Id.* at 4.

100. *Id.* at 2 figs.1, 5.

101. *See id.* at 5–6 (noting that the jeopardy determinations are "policy decisions that are informed by and based on the analyses conducted by Service biologists").

102. *See ESA Section 7 Consultation, supra* note 85.

103. SHEIKH ET AL., *supra* note 84, at 34 (emphasis added).

104. *See* NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES ACT SECTION 7 CONSULTATION BIOLOGICAL OPINION ENVIRONMENTAL PROTECTION AGENCY REGISTRATION OF PESTICIDES CONTAINING AZINPHOS METHYL, BENSULIDE, DIMETHOATE, DISULFOTON, ETHOPROP, FENAMIPHOS, NALIED, METHAMIDOPHOS, METHIDATHION, METHYL PARATHION, PHORATE AND PHOSMET 776 (2010) (concluding that the "EPA's proposed registration of pesticides containing bensulide, dimethoate, ethoprop, methidathion, naled, phorate, and phosmet are likely to jeopardize the continued existence of more than 28 endangered and threatened Pacific" salmon); NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES ACT SECTION 7 CONSULTATION BIOLOGICAL OPINION: ENVIRONMENTAL PROTECTION AGENCY REGISTRATION OF PESTICIDES: 2,4-D, TRICLOPYR BEE, DIURON, LINURON, CAPTAN, AND CHLOROTHALONIL 771–72 (2011) (concluding that the registration of 2,4-D would have a jeopardy and adverse modification determination on salmon); NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES ACT SECTION 7 FINAL BIOLOGICAL OPINION: ENVIRONMENTAL PROTECTION AGENCY REGISTRATION OF PESTICIDES ORYZALIN, PENDIMETHALIN, TRIFLURALIN 639 (2012) (concluding the effects of the pesticide use could result in a jeopardy determination for salmon); NAT'L MARINE FISHERIES SERV., ENDANGERED SPECIES ACT SECTION 7 CONSULTATION CONFERENCE AND BIOLOGICAL OPINION: ENVIRONMENTAL PROTECTION AGENCY'S REGISTRATION OF PESTICIDES CONTAINING DIFLUBENZURON, FENBUTATIN OXIDE, AND PROPARGITE 558 (2015) (concluding the negative effects from pesticide use may be extensive enough to jeopardize the existence of salmonoids).

105. *See* Lopez, *supra* note 2, at 188 (describing how the EPA failed to meet its ESA obligations when administering FIFRA absent threat of litigation).

### B. *The Federal Insecticide, Fungicide, and Rodenticide Act*

Generally, under FIFRA, the EPA must “regulate the sale and use of pesticides in the United States through [the] registration and labeling” of pesticide products.<sup>106</sup> An unregistered pesticide cannot be sold or distributed within the United States.<sup>107</sup> Several sections of FIFRA note that the EPA may regulate and approve pesticides if it can be demonstrated that the pesticide will not have an unreasonable adverse effect on the environment.<sup>108</sup> An unreasonable adverse effect on the environment is defined 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 . . . .”<sup>109</sup> The Biological and Economic Analysis Division of the EPA conducts this balancing test to compare the economic and social benefits to the risks to human health, animals, and the environment.<sup>110</sup> Benefits that may be weighed include the prevention of “negative impacts to public health, industry, or agriculture.”<sup>111</sup>

#### 1. *Pesticide Registration*

The EPA may register a pesticide if it meets four criteria: “(1) its labeling complies with FIFRA’s requirements; (2) the composition claims are warranted; (3) the pesticide will perform its intended function; and (4) the pesticide will not cause unreasonable adverse effects on the environment.”<sup>112</sup> FIFRA requires the EPA to review each registered pesticide every fifteen years to ensure that the pesticide meets current scientific and regulatory standards.<sup>113</sup> This fifteen-year review “ensure[s] that each pesticide can

106. See JERRY H. YEN & ROBERT ESWORTHY, CONG. RSCH. SERV., RL31921, PESTICIDE LAW: A SUMMARY OF THE STATUTES 1 (2012); FIFRA, 7 U.S.C. § 136a(a) (“To the extent necessary to prevent unreasonable adverse effects on the environment, the Administrator [of the EPA] may by regulation limit the distribution, sale, or use in any State of any pesticide that is not registered . . .”).

107. 7 U.S.C. § 136a(a).

108. § 136a(c)(5)(C)–(D).

109. § 136(bb).

110. See U.S. ENV’T PROT. AGENCY, EPA 733-F-94-001, THE ROLE OF BEAD IN PESTICIDE REGULATION 1 (1994).

111. See *id.* (providing that pesticides help to “[control] pests that cause or carry human or animal diseases (e.g., bacteria in cooling water systems or toilet bowls); cause environmental damage (e.g., gypsy moths in forests); foul industrial materials (e.g., bacteria and fungi in paint or fuels); or reduce food production (e.g., weeds, diseases, insects)”).

112. Lopez, *supra* note 2, at 193–94; see also 7 U.S.C. § 136a(c)(5).

113. See YEN & ESWORTHY, *supra* note 106, at 1–2 (requiring the EPA to also “reregister each older pesticide product that was first registered prior to 1984”).



carry out its intended function(s) without creating unreasonable adverse effects to human health or the environment” in the process.<sup>114</sup> The EPA must initiate the registration review process by creating a public docket open for public comment.<sup>115</sup> Within the docket, the Preliminary Work Plan summarizes the “information [the] EPA has on the pesticide and the anticipated path forward.”<sup>116</sup> Once the Preliminary Work Plan is released, a sixty-day public comment period begins and will be used to update the Final Work Plan, already present within the docket.<sup>117</sup>

If the EPA requires more data on the pesticide, it issues a Data-Call In notice to the registrant under FIFRA § 3(c)(2)(B) and incorporates all collected data into the Draft Risk Assessment.<sup>118</sup> If the Draft Risk Assessment identifies ecological risks, the EPA initiates a formal ESA section 7 consultation.<sup>119</sup> Upon completion of the ESA consultation, the EPA edits the Proposed Interim Decision to include any changes to use or labeling, any additional data requirements, and the deadlines for any required actions.<sup>120</sup> The EPA publishes the Proposed Interim Decision in the public docket for an additional sixty-day comment period.<sup>121</sup>

The EPA issues an Interim Decision after considering the comments on the Proposed Interim Decision.<sup>122</sup> The Interim Decision may “require new or impose interim risk mitigation measures; identify data or information needed to complete the review . . . ; and require within 60-days of the ID [Interim Decision] publication the submission of updated pesticide labels.”<sup>123</sup> Finally, the EPA issues its Final Decision after completing the listed species assessment and any necessary ESA section 7 consultations with the Services.<sup>124</sup>

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114. See EPA WORKPLAN, *supra* note 1, at 12.

115. *Id.*

116. See *id.* (noting that the Preliminary Work Plan includes “facts about the pesticide and its current use and usage, anticipated risk assessment and data needs, and an overall estimate of the time needed for the reviews”).

117. *Id.*

118. See *id.*; 7 U.S.C. § 136a(c)(2)(B)(i)-(ii) (requiring each registrant of the pesticide in question to provide evidence that it is taking appropriate steps to secure the required data).

119. EPA WORKPLAN, *supra* note 1, at 12; *supra* Section I.A.

120. See EPA WORKPLAN, *supra* note 1, at 12.

121. *Id.*

122. *Id.*

123. *Id.*

124. *Id.*

## 2. *Pesticide Cancellation*

FIFRA gives the EPA authority to cancel pesticides due to ecological harm, but the EPA must decide that the risks of the pesticide use outweigh the benefits.<sup>125</sup> Though not statutorily required, the EPA “typically solicits input from stakeholders and the public relating to risks, benefits, and possible risk-mitigation options before initiating [the] cancellation action.”<sup>126</sup> If the EPA determines that a pesticide no longer complies with the provisions of FIFRA, it may issue a notice of intent to either: (1) cancel the registration with reasons for the action, or (2) hold a hearing to determine whether the registration should be canceled.<sup>127</sup>

Sixty days prior to releasing the notice to the registrant and the public, FIFRA requires that the EPA send the Secretary of Agriculture a copy of the notice and an agricultural economy impact analysis based on the pesticide cancellation.<sup>128</sup> If the Secretary of Agriculture comments within thirty days, then the EPA’s Administrator shall publish the notice and Secretary of Agriculture’s comments in the Federal Register alongside an analysis on the impacts to “production and prices of agricultural commodities, [and] retail food prices . . . .”<sup>129</sup> Additionally, FIFRA requires the EPA to consider use restrictions of the pesticide as an alternative to cancellation and explain any restrictions when submitting the final agency action.<sup>130</sup> The proposed cancellation becomes final within thirty days from the registrant receiving it or publication, unless (1) “the registrant makes the necessary corrections, if possible, or (2) a request for a hearing is made by a person adversely affected by the notice.”<sup>131</sup>

### C. *The Main Conflict*

At their cores, the ESA and FIFRA deal with different areas of regulation: the ESA establishes protections for endangered and vulnerable species, while FIFRA regulates the registration of pesticides used to kill unwanted pests.<sup>132</sup>

125. See *Pesticide Cancellation Under EPA’s Own Initiative*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/pesticide-tolerances/pesticide-cancellation-under-epas-own-initiative#noic-issued> (Dec. 6, 2022).

126. *Id.*

127. See *id.* (explaining how the EPA can cancel the registration if the “use of the pesticides [is] unacceptable, and the registrants either have not made, or cannot make, necessary changes to the terms and conditions of the registration to address the unacceptable risks.”); FIFRA, 7 U.S.C. § 136d(b)(1)–(2).

128. 7 U.S.C. § 136d(b).

129. *Id.*

130. *Id.*

131. *Id.*

132. Compare ESA, 16 U.S.C. § 1531(b) (noting that the ESA’s purpose is to “provide

One of the biggest differences between the ESA and FIFRA is the balancing of economic and environmental interests.<sup>133</sup> The ESA does not impose a balancing test between the economic and environmental benefits because it simply aims to preserve species.<sup>134</sup> The balancing test is essential to FIFRA's functionality, but historically the EPA has not properly analyzed the environmental risks, making the scale unbalanced.<sup>135</sup>

Influences from pesticide manufacturers add weight to the economic side of the scale.<sup>136</sup> Because FIFRA requires pesticide manufacturers to complete numerous tests and registration requirements, the EPA's employees are more likely to be pressured by the chemical manufacturers who "spend tens of millions of dollars on lobbying each year."<sup>137</sup> Even more concerning is that the pesticide manufacturing companies also commonly employ former EPA scientists after they leave the EPA, creating a revolving door between industry and the agency.<sup>138</sup>

These industry influences may explain why the EPA has become more hesitant to ban pesticides.<sup>139</sup> Since the EPA's founding in 1970, it has removed thirty-seven pesticides from the market, but from 2010 to 2020, it has only removed one.<sup>140</sup> The EPA's hesitancy to remove pesticides from the market permits continuous harm to humans, protected species, and the environment.<sup>141</sup>

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means whereby the ecosystems upon which endangered species and threatened species depend may be conserved"), with FIFRA, 7 U.S.C. § 136a(a) (requiring registration of any pesticide before distribution or sale).

133. Compare 16 U.S.C. § 1531(b) (conserving the species and ecosystems without consideration of economic costs and benefits of the area or species), with 7 U.S.C. § 136(bb) (balancing the unreasonable effects on the environment and the economic costs and benefits of the pesticide use).

134. Compare 16 U.S.C. § 1531(b), with 7 U.S.C. § 136(bb).

135. See 7 U.S.C. § 136(bb); see also EPA WORKPLAN, *supra* note 1, at 9; Lopez, *supra* note 2, at 195 (remarking that even after lawsuits over ESA consultations, the EPA still refrains from performing ESA consultations unless under the threat of litigation).

136. See generally Lerner, *supra* note 49 (referencing over two dozen experts' testimonies describing the pressures the EPA faces from powerful agrochemical companies).

137. See *id.* (explaining how agrochemical companies invite EPA scientists to visit farms to convince them that banning any pesticide would cause extensive crop failure).

138. See *id.* (blaming the "enormous corporate influence" and pressure from Congress members for the weakened pesticide regulations).

139. See *id.* (explaining that the EPA cancelled the registration of twelve pesticides between 1970–1980, between 1980–1990 the EPA removed eight pesticides, and between 2000–2010 the EPA removed only four pesticides from the market).

140. *Id.*

141. *Id.*; Britt E. Erickson, *U.S. EPA Renews Effort to Protect Endangered Species From Pesticides*, CHEM. & ENG'G NEWS (Feb. 27, 2022), <https://cen.acs.org/environment/pesticides/US-EPA-renews-effort-protect/100/i8> (noting pesticides such as atrazine, glyphosate,

## II. THE EPA'S RESPONSE TO INCREASED LITIGATION

In recent years, environmental organizations such as the Center for Biological Diversity and the Natural Resources Defense Council have sued the EPA more than twenty times, challenging the registration of over 1,000 pesticide products for failure to meet ESA obligations.<sup>142</sup> As a response to the pressure to improve ESA–FIFRA consultations, the EPA released a workplan to balance wildlife protection and responsible pesticide use moving forward.<sup>143</sup>

### A. Main Takeaways from the EPA's Workplans

As part of the EPA's response, it acknowledged its past failures to consider endangered species when conducting pesticide registration and noted some challenges that hindered its ability to do so.<sup>144</sup> Budgetary and staffing constraints present some of the main challenges to the Pesticide Program.<sup>145</sup> Because the EPA's "Pesticide Program staffing is roughly at the [fiscal year (FY)] 2013 level," it is difficult to keep up with the growing FIFRA obligations.<sup>146</sup> But, in response to the demand for ESA consultations during FIFRA registrations, the President's proposed budget for FY 2023 includes a \$4.9 million budgetary increase and ten additional full-time employees.<sup>147</sup>

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neonicotinoids, chlorpyrifos, diazinon, and malathion all harm endangered species, but the EPA has hesitated in implementing protection measures).

142. See EPA WORKPLAN, *supra* note 1, at 4 ("Over the next six years, existing court-enforceable deadlines will require EPA to complete ESA reviews for 18 pesticides – the most the agency can handle during this period based on its current capacity and processes."); *Ctr. for Biological Diversity v. EPA*, No. 20–73146, 2022 WL 2805090, at \*1 (9th Cir. July 18, 2022) (ordering the EPA to complete its final effect determination for inpyrfluxam products and to initiate any necessary agency consultation by June 22, 2023); *Nat. Res. Def. Council v. EPA*, 38 F.4th 34, 61–62 (9th Cir. 2022) (concluding that the EPA violated the ESA by not making an effects determination before issuing a decision and requiring the EPA to issue an ecological portion of the Interim Decision by October 2022).

143. See generally EPA WORKPLAN, *supra* note 1 (providing a breakdown of the EPA's blueprint for protecting endangered species while continuing to register chemicals that eliminate pests). For further information about EPA's Workplan, see *EPA Announces Plan to Protect Endangered Species and Support Sustainable Agriculture*, ENV'T PROT. AGENCY (Apr. 12, 2022), <https://www.epa.gov/newsreleases/epa-announces-plan-protect-endangered-species-and-support-sustainable-agriculture>.

144. See EPA WORKPLAN, *supra* note 1, at 4–5 (identifying a total of six challenges that must be overcome to succeed in balancing the ESA and FIFRA).

145. See *id.* at 5.

146. See *id.* at 4–5, 21 (explaining that the EPA's Pesticide Program staff peaked in 2005 with 808 people and declined to 603 staff members in 2021).

147. See *id.* at 26 (directing the ten new employees and additional money to conducting risk assessments and making risk management decisions).

The EPA presented four strategies to balance its ESA and FIFRA obligations.<sup>148</sup> The EPA's first strategy targets meeting the ESA obligations for FIFRA actions under the existing and future court-enforceable deadlines.<sup>149</sup> Currently, the EPA's court-enforceable deadlines, ongoing litigation, and settlements have resulted in the EPA needing to complete ESA reviews for over fifty pesticides.<sup>150</sup> The EPA predicts this will fill the Agency's ESA workload beyond 2030.<sup>151</sup> Though under this strategy, the EPA will not issue registrations for new active ingredients without "first making ESA assessments . . . , implementing needed mitigation, and initiating consultation with the Service(s) if necessary."<sup>152</sup> Within the Workplan, the EPA noted that it plans to meet its ESA obligations for the pesticide registration cases that are not on court-ordered deadlines.<sup>153</sup> Due to the large number of pesticides not under court-ordered deadlines, the EPA noted that it "will begin developing a plan on when and how to make" ESA determinations, without offering any further details on a timeline.<sup>154</sup> Also under the first strategy, the EPA plans to develop ESA assessment methods for antimicrobial and biopesticides, as the ESA-FIFRA assessment methods were originally produced only for conventional pesticides.<sup>155</sup>

The EPA's second strategy aims to improve its approach to ESA mitigation.<sup>156</sup> The first goal of this strategy is for the EPA to "[i]dentify and incorporate early mitigation for vulnerable ESA species."<sup>157</sup> The second goal is for the EPA to offer pesticide users and registrants more ESA mitigation measures in two ways.<sup>158</sup> First, the EPA plans to engage with stakeholders to

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148. *See id.* at 38–63.

149. *See id.* at 45 (including dates within the for draft biological evaluations, final biological evaluations, and biological opinions for active ingredients).

150. *See* ESA WORKPLAN UPDATE, *supra* note 9, at 3 (emphasizing that "these cases represent less than 5% of [the] EPA's future pesticide actions that trigger ESA obligations.").

151. *Id.*

152. EPA WORKPLAN, *supra* note 1, at 45.

153. *See id.* at 49 (noting that the EPA is unable to set a timeline for all of these registration assessments and will work on producing an outline in 2023).

154. *Id.* (explaining that the "optimal order for making those determinations" depends on several factors including the EPA's capacity to make ESA determinations and how the pesticide affects the species and its habitat).

155. *Id.* at 51.

156. *Id.* at 53–60.

157. *Id.* at 53–55 (noting that this goal will contain three steps: (1) identify vulnerable species; (2) identify mitigation for vulnerable species; and (3) incorporate any necessary ESA mitigation into FIFRA actions).

158. *Id.* at 56.

develop suitable ESA mitigation measures earlier in the FIFRA process.<sup>159</sup> Second, the EPA will “creat[e] a menu of mitigation that users or registrants can select from . . . .”<sup>160</sup> Pursuant to creating these mitigation measures, the EPA will establish a Federal Mitigation Pilot Project.<sup>161</sup> The EPA’s second strategy will also focus on adopting mitigation measures for all protected species, specifically those on the brink of a jeopardy determination.<sup>162</sup>

The EPA’s Workplan Update expanded on the second goal.<sup>163</sup> In order to improve its ESA mitigation measures, whenever a pesticide poses an ecological risk, the Interim Decision that the EPA issues will include “interim mitigation measures” that help to protect nontarget species from potential pesticide risks.<sup>164</sup> The EPA has divided the potential mitigation measures into “[m]itigation to meet FIFRA obligations” and “[m]itigation to meet ESA obligations.”<sup>165</sup> Some of the FIFRA interim ecological mitigation measures include creating conservation buffers and spray drift buffers between aquatic habitats and conservation areas.<sup>166</sup> The mitigation measures to meet ESA obligations include utilizing the pilot projects and geographic-specific restrictions.<sup>167</sup>

The EPA’s third strategy focuses on improving the interagency consultation process, especially with the Services.<sup>168</sup> Lastly, the fourth strategy plans to improve stakeholder engagement by ensuring that the EPA collects all the necessary data from registrants before the ESA assessment begins.<sup>169</sup> The EPA also aims to improve the consultation process with growers and nonagricultural organizations, including “environmental, tribal, and public interest organizations, as well as organizations that represent pesticide users . . . .”<sup>170</sup>

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159. *Id.*

160. *Id.*

161. *Id.* at 56–57; *see infra* Part II.B.1.

162. EPA WORKPLAN, *supra* note 1, at 54–57.

163. *See* ESA WORKPLAN UPDATE, *supra* note 9, at 7–11.

164. *Id.* at 5, 7 (clarifying that the mitigation measures will be included in Interim Decisions on a case-by-case basis and only after the EPA has assessed the pesticide’s risk to nontarget species).

165. *Id.* at 7.

166. *See id.* at 8 (defining “conservation buffers” to mean “small areas or strips of land in permanent vegetation designed to intercept pollutants and manage other environmental concerns”).

167. *See id.* at 7, 12, 15 (listing other ESA mitigation measures such as implementing ESA mitigation across chemical groups, bridging mitigation measures between similar chemicals and species, and developing programmatic responses to the ESA consultation).

168. EPA WORKPLAN, *supra* note 1, at 61.

169. *Id.* at 62.

170. *Id.* at 62–63.

### B. Pilot Programs

The EPA frequently establishes pilot programs to “test the waters” on a project.<sup>171</sup> Within the workplan, the EPA included two pilot projects to identify mitigation measures for protected species: the Federal Mitigation Pilot Project and the Vulnerable Species Pilot Project.<sup>172</sup>

#### 1. Federal Mitigation Pilot Project

The Federal Mitigation Pilot Project aims to “help federal agencies and stakeholders gain a common understanding of how to reduce exposures to listed species from pesticides by implementing feasible mitigations earlier in the FIFRA registration . . . .”<sup>173</sup> This pilot project promotes interagency cooperation between the EPA, FWS, NMFS, and the USDA.<sup>174</sup> The Services will choose twenty species that are especially vulnerable to pesticides, and the EPA will choose a herbicide, an insecticide, and a fungicide that currently comes into contact with the selected species.<sup>175</sup> The Services choose only species that are vulnerable or at risk for a future jeopardy determination.<sup>176</sup> Additionally, the Services choose certain species for their various habitats and potential exposure to the selected pesticides in different ways.<sup>177</sup>

For each of the pilot species, the EPA, FWS, NMFS, and USDA will develop an initial list of “suitable mitigation measures” that aim to reduce the likelihood of a future jeopardy determination or an adverse effect on the species’ habitats.<sup>178</sup>

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171. U.S. ENV’T PROT. AGENCY, EPA-430-F-15-006, EFFECTIVE PRACTICES FOR IMPLEMENTING LOCAL CLIMATE AND ENERGY PROGRAMS: CONDUCTING AND EVALUATING PILOT PROJECTS 1 (2015) [hereinafter CLIMATE PILOT PROJECTS].

172. *Implementing EPA’s Workplan to Protect Endangered and Threatened Species from Pesticides: Pilot Projects*, U.S. ENV’T PROT. AGENCY [hereinafter *Endangered Species Pilot Projects*], <https://www.epa.gov/endangered-species/implementing-epas-workplan-protect-endangered-and-threatened-species-pesticides#project> (Nov. 16, 2022).

173. *Id.*

174. *See* EPA WORKPLAN, *supra* note 1, at 4, 54 (detailing how the agencies will work together to “develop approaches for identifying and implementing mitigation earlier in the ESA–FIFRA process for select species particularly vulnerable to pesticides”).

175. *See id.* The FWS’s chosen species include: the Poweshiek skipperling, Mitchell’s satyr butterfly, rusty-patched bumblebee, Topeka shiner, prairie bush clover, Santa Cruz long-toed salamander, rayed bean, desert pupfish, fat threeridge, and the gulf moccasin shell. The NMFS’s chosen species include the chinook salmon and elkhorn coral. The EPA’s chosen pesticides include the herbicide glyphosate, the insecticide imidacloprid, and the fungicide pyraclostrobin. *See Endangered Species Pilot Projects, supra* note 172.

176. *See* EPA WORKPLAN, *supra* note 1, at 54 fig. 4.

177. *Endangered Species Pilot Projects, supra* note 172.

178. *Id.*

When creating these mitigation measures, the Services take into account potential effective offsets, any priority areas, the longevity of the mitigations, and the impact on pesticide users' current pest control practices.<sup>179</sup> The EPA aims to use the pilot project to incorporate the new mitigation measures into the registration review of chemicals that also overlap with other vulnerable species.<sup>180</sup> The EPA hopes the project "will provide additional insight on opportunities to engage pesticide users and registrants on mitigation earlier . . . ."<sup>181</sup>

As of November 2022, the EPA, FWS, NMFS, and USDA have discussed "practical, flexible, feasible, and effective measures" to reduce the pilot species' pesticide exposure.<sup>182</sup> Originally, the EPA planned to reach out to states, pesticide users, registrants, and conservation organizations to discuss the proposed mitigation measures but determined that there were sufficient opportunities for public comment relating to how the "EPA is implementing the workplan . . . through calendar year 2022" and that further discussions were unnecessary.<sup>183</sup>

## 2. *Vulnerable Species Pilot Project*

The goal of the Vulnerable Species Pilot Project is to identify species that may have medium- or high-vulnerability to pesticides.<sup>184</sup> The EPA chose species for this pilot project that the FWS identified as vulnerable to pesticides through published biological opinions.<sup>185</sup> The twenty-seven selected pilot species have limited ranges and their habitats overlap, allowing the agencies to test pesticide applications in one location that may affect several species.<sup>186</sup> Potential mitigation measures to be tested include actions such as the "use of equipment or practices that reduce spray drift," implementing no-spray buffers, and enhancing the pesticide's warning labels.<sup>187</sup> Additionally, the agencies are considering prohibiting pesticide applications within critical habitat designations.<sup>188</sup>

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179. *Id.*

180. *See* EPA WORKPLAN, *supra* note 1, at 56.

181. *Id.*

182. *Endangered Species Pilot Projects*, *supra* note 172.

183. *Id.*

184. *Id.*

185. *See id.* (listing the priority species as Mead's milkweed, Palmate-bracted bird's-beak, American burying beetle, Ozark cavefish, Wyoming toad, a group of plants in the Lake Wales Ridge area of Florida, and others).

186. *Id.*

187. *See id.*

188. *Id.*



Looking forward, the EPA “plans to conduct public outreach on the mitigation measures identified for the . . . species in the Vulnerable Species Pilot” by summer 2023.<sup>189</sup> Also in 2023, the EPA plans to expand the Vulnerable Species Pilot project to include more species based on the information gained from the original species.<sup>190</sup> A final determination about how the project could be expanded is expected in 2024.<sup>191</sup>

### III. RECOMMENDATIONS

#### A. *Expand the Pilot Project Initiative to Focus on Cumulative Impacts*

The EPA should create a pilot project to determine if the cumulative effects of multiple pesticides could jeopardize the existence of any protected species. Although the two pilot projects focus on developing important mitigation measures for particularly vulnerable species, neither project looks at how multiple pesticides could together impact those species.<sup>192</sup> FIFRA empowers the EPA to undertake any necessary research to carry out the purposes of the statute; this includes the creation of research pilot projects.<sup>193</sup> The EPA has successfully studied the impacts of individual pesticides on a species, but there is less research surrounding the cumulative impacts of multiple pesticides on a species.<sup>194</sup> The EPA acknowledged this potential harm with respect to humans when it created a framework for a pesticide “cumulative risk assessment.”<sup>195</sup> But the EPA has not taken the same step forward regarding endangered species.

First, total pesticide use within the United States must be quantified and mapped. To aid in the development of this pilot project, the EPA should use

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189. *Id.*

190. *Id.*

191. *Id.*

192. *Id.*

193. FIFRA, 7 U.S.C. § 136r(a), (c); Web-Distributed Labeling User Acceptance Pilot, 75 Fed. Reg. 51,058, 51,060 (Aug. 18, 2010) (utilizing a pilot program to survey if pesticide users would accept a web-distributing labeling program, but noting that the authority to conduct such a study comes from FIFRA § 20(a)).

194. *See generally* DRAFT SULFOXAFLOL BIOLOGICAL EVALUATION, *supra* note 69 (weighing the impacts of certain pesticides on a species in a vacuum, but not examining the potential impact of multiple pesticides on a single species). For more information on the potential effects of these pesticides on endangered species, see *Final Neonicotinoid Biological Evaluations*, *supra* note 53.

195. *Cumulative Assessment of Risk from Pesticides*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/cumulative-assessment-risk-pesticides> (Mar. 10, 2023).

its own interactive webpage titled “*Bulletins Live!*” to map out the various “pesticide use limitations for the protection of threatened and endangered (listed) species and their designated critical habitat.”<sup>196</sup> The United States Geological Survey (USGS) also created pesticide usage maps for numerous pesticides beginning in 1992 and spanning through 2019.<sup>197</sup> Because the USGS pesticide map stopped in 2019, the Department of the Interior should authorize USGS to continue mapping pesticide use; the Department could alternatively give the EPA any unpublished data, should it exist.<sup>198</sup> Additionally, the FWS mapped the critical habitats of protected species under the ESA.<sup>199</sup> Once the EPA gains access to this information, it could move forward in two different ways.

First, the EPA could undertake a species-by-species analysis. Using the two pilot projects as models, the EPA, FWS, and NMFS should choose between five to ten pilot species that are particularly vulnerable to pesticides and have a wide range of habitats.<sup>200</sup> After determining the pilot species, the EPA should utilize the FWS mapping tool to determine the designated habitat ranges where the pilot species would be found.<sup>201</sup> Then, the EPA should compile a list of the herbicides, fungicides, and insecticides that are used within those habitats.<sup>202</sup>

By better understanding both the number and volume of pesticides used within these habitats, scientists can determine how those pesticides may interact with one another. The information gained from studying the cumulative pesticide impact would better inform mitigation measures, one of the EPA’s key goals in approaching the ESA–FIFRA conflict.<sup>203</sup> The result of this pilot project would inform the EPA on the proper use restrictions of pesticides and whether the cumulative impact of pesticides is likely to jeopardize any endangered species.

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196. *Endangered Species Protection Bulletins*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/endangered-species/endangered-species-protection-bulletins> (Mar. 6, 2023); *Bulletins Live! Two – View the Bulletins*, U.S. ENV’T PROT. AGENCY [hereinafter *Bulletins Live!*], <https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins> (Jan. 30, 2023).

197. *Pesticide National Synthesis Project: Estimated Annual Agricultural Pesticide Use*, U.S. GEOLOGICAL SURV., <https://water.usgs.gov/nawqa/pnsp/usage/maps/county-level/> (Oct. 15, 2021).

198. *Id.*

199. *Critical Habitat for Threatened & Endangered Species [USFWS]*, U.S. FISH & WILDLIFE SERV. [hereinafter *Threatened & Endangered Species Critical Habitat Map*], <https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77> (last visited May 9, 2023).

200. *Endangered Species Pilot Projects*, *supra* note 172.

201. *Threatened & Endangered Species Critical Habitat Map*, *supra* note 199.

202. *Id.*; *Bulletins Live!*, *supra* note 196; U.S. GEOLOGICAL SURV., *supra* note 197.

203. See EPA WORKPLAN, *supra* note 1, at 53–54.

Second, the EPA could establish a cumulative pesticide pilot project based on geographic range. This should be done on a state-by-state basis. For the purposes of the pilot project, the Services and the EPA should choose a small number of states where pesticide use is especially heavy. Once the EPA selects the states, the EPA and the Services should analyze the locations that each state has designated as critical habitat, using the FWS mapping tool.<sup>204</sup> Once the agencies have determined the critical habitats, the mapping tools provided by USGS and the EPA's *Bulletins Live!* should be combined to determine if any protected species or critical habitats are being impacted by multiple pesticides.<sup>205</sup> Within the ESA Workplan Update, the EPA chose Hawaii as a starting point due to its high level of biodiversity and isolated nature.<sup>206</sup> But the EPA plans to evaluate "Hawaii as a whole rather than pesticide-by-pesticide or species-by-species."<sup>207</sup> Though the EPA plans to utilize the state-by-state approach when evaluating Hawaii, there remains no mention of assessing the cumulative impacts of multiple pesticides on the species within Hawaii.<sup>208</sup>

Under the Administrative Procedure Act § 704, agency actions may only be challenged if they are final.<sup>209</sup> Pilot projects are flexible and can be changed by the EPA based on changing needs or information.<sup>210</sup> Due to these qualities, pilot projects are not considered final agency actions and thus, cannot be challenged in court.<sup>211</sup> Due to this flexibility, the EPA should begin with small numbers of species and states to better determine how many pesticides a cumulative impact study would take into account and how many species may be jeopardized.

The funding for this pilot project should come from the \$4.9 million increase for FY 2023 that the EPA received for "conducting risk assessments and making risk management decisions."<sup>212</sup> This pilot program would qualify for funding because researching and developing mitigation measures

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204. *Threatened & Endangered Species Critical Habitat Map*, *supra* note 199.

205. *Id.*; *Bulletins Live!*, *supra* note 196; U.S. GEOLOGICAL SURV., *supra* note 197.

206. *See* ESA WORKPLAN UPDATE, *supra* note 9, at 18.

207. *Id.*

208. *See id.*

209. *See* Administrative Procedure Act, 5 U.S.C. § 704 ("Agency action made reviewable by statute and final agency action for which there is no other adequate remedy in a court are subject to judicial review."); *see also* *Bennett v. Spear*, 520 U.S. 154, 177–78 (1997) ("[T]wo conditions must be satisfied for agency action to be 'final': First, the action must mark the 'consummation' of the agency's decisionmaking process . . . [a]nd second, the action must be one by which 'rights or obligations have been determined,' or from which 'legal consequences will flow.'") (citations omitted).

210. CLIMATE PILOT PROJECTS, *supra* note 171.

211. *Id.*; *see also* 5 U.S.C. § 704.

212. *See* EPA WORKPLAN, *supra* note 1, at 26.

that ensure cumulative pesticide impacts do not adversely affect protected species could be characterized as a risk assessment.<sup>213</sup>

*B. Immediately Cancel or Suspend the Use of Sulfoxaflor*

Under FIFRA, the EPA Administrator may cancel pesticides that cause unreasonable adverse effects on the environment.<sup>214</sup> The EPA should utilize its authority under FIFRA to stop the sale of sulfoxaflor insecticides due to the finding that sulfoxaflor can inflict harm on 120 endangered species and thirty-two critical habitats.<sup>215</sup> California has already banned sulfoxaflor,<sup>216</sup> but the EPA should not wait for individual state actions and should ban the insecticide altogether. Because the draft biological opinion showed a potential jeopardy finding, and because it is not required by statute, the EPA should skip solicitation from stakeholders and the public related to the risks and benefits of canceling the registration.<sup>217</sup> The EPA likely already knows what is at stake with respect to this insecticide due to the ongoing litigation and the biological opinion research.<sup>218</sup> Therefore, the EPA should immediately file a notice of intent to cancel sulfoxaflor.<sup>219</sup>

Alternatively, the EPA could file an emergency order that immediately suspends the registration of sulfoxaflor, making sulfoxaflor unavailable during the 180-day period while the EPA makes an ESA determination.<sup>220</sup> The draft biological opinion's jeopardy determination should be considered an emergency under the circumstances and, thus, give the EPA Administrator the power to immediately suspend the registration without filing a notice of intent to cancel beforehand.<sup>221</sup> The

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213. *See id.*

214. 7 U.S.C. § 136d(b).

215. *See* § 136k(a) (“Whenever any pesticide or device is found by the Administrator . . . [to be] in violation of any part of the provisions of this subchapter . . . the Administrator may issue a written or printed ‘stop sale, use, or removal’ order . . . .”); DRAFT SULFOXAFLOR BIOLOGICAL EVALUATION, *supra* note 69, at 13.

216. *See* Press Release, Earthjustice, Court Rejects California’s Approval of Bee-killing Pesticide Sulfoxaflor (Dec. 6, 2021), <https://earthjustice.org/press/2021/court-rejects-californias-approval-of-bee-killing-pesticide-sulfoxaflor> (explaining how a California Superior Court ruled that sulfoxaflor could no longer be used in the state).

217. DRAFT SULFOXAFLOR BIOLOGICAL EVALUATION, *supra* note 69, at 13.

218. *Id.*

219. *See* 7 U.S.C. § 136d(b)(1).

220. *See* § 136d(c)(3) (“Whenever the Administrator determines that an emergency exists that does not permit the Administrator to hold a hearing before suspending, the Administrator may issue a suspension order in advance of notification to the registrant.”); Neeley, *supra* note 73.

221. Neeley, *supra* note 73.; DRAFT SULFOXAFLOR BIOLOGICAL EVALUATION, *supra* note 69, at 13.

suspension would provide immediate relief and protection to those species found in potential jeopardy while the Agency develops the final biological opinion with proper mitigation measures.

### CONCLUSION

The EPA must balance its obligations under the ESA and FIFRA more effectively.<sup>222</sup> The EPA cannot continue to only meet its ESA obligations 5% of the time when registering pesticides.<sup>223</sup> The EPA's new workplan takes a step in the right direction as it prioritizes the safety of endangered species and is creative in finding new ways to develop mitigation measures to meet the EPA's obligations.<sup>224</sup> Pushing the workplan further would require the mention of suspension or cancellation of harmful pesticides, which is something that a captured EPA may not be inclined to take on.<sup>225</sup> The use of pilot programs to create a "menu" of mitigation measures is an encouraging step, but the avoidance of attempting to research the cumulative impacts of multiple pesticides keeps endangered species at risk, and these risks must be taken into account. The EPA should continually work to find a balance between protecting endangered species and responsibly using pesticides.<sup>226</sup>

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222. See ESA, 16 U.S.C. § 1536(a)(2) (ensuring that federal agencies actions do not to jeopardize the existence of any protected species); 7 U.S.C. § 136a(g)(1)(A)(iii) (requiring the Administrator to complete the registration review for all pesticides by October 1, 2022 or fifteen years after the initial registration).

223. See EPA WORKPLAN, *supra* note 1, at 9.

224. See *id.* at 53–60.

225. See *supra* Part I.C.

226. See EPA WORKPLAN, *supra* note 1, at 56.