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**THE UNITED STATES DISTRICT COURT
 OF ARIZONA**

Center for Biological Diversity,)	
National Family Farm Coalition,)	
Center for Food Safety, and)	
Pesticide Action Network North)	Case No. 4:20-cv-00555-DCB
America,)	
)	SECOND AMENDED AND
<i>Plaintiffs,</i>)	SUPPLEMENTAL
)	COMPLAINT FOR
v.)	DECLARATORY AND
)	EQUITABLE RELIEF
United States Environmental)	
Protection Agency, et al.,)	
)	
<i>Defendants.</i>)	
and)	
)	
Bayer Cropsciences LP, et al.,)	
)	
<i>Defendant-Intervenors.</i>)	
)	
)	

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INTRODUCTION AND NATURE OF ACTION

1 2. This is a civil action for equitable and declaratory relief.
 2
 3 Plaintiffs National Family Farm Coalition, Center for Biological Diversity,
 4 Pesticide Action Network, and Center for Food Safety (Plaintiffs) challenge
 5 the October 27, 2020 decision to approve new use registrations for three
 6 dicamba products, *see* Ex. A,¹ the Notices of Registrations, *see* Exs. B-D²
 7 (collectively, the Registration Actions), and the March 2022 amendments to
 8 the registrations (Registration Amendments) for Minnesota and Iowa. *See*
 9 Exs. F, G, H. Defendants Environmental Protection Agency (EPA), Edward
 10 Messina, Director of the Office of Pesticide Programs, and Michael S. Regan,
 11 Acting Administrator of EPA (collectively EPA or Defendants) authorized
 12 these Registration Actions and Registration Amendments in violation of the
 13 Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), 7 U.S.C. § 136 *et*
 14 *seq.*, Endangered Species Act (ESA), 16 U.S.C. § 1531 *et seq.*, and the
 15 Administrative Procedure Act (APA), 5 U.S.C. § 701 *et seq.*

16 2. This is an administrative law case, about a federal agency
 17 stubbornly doubling down on a prior approval that the Ninth Circuit just held
 18 unlawful and vacated in June 2020. In its rush to re-approve this novel
 19 dicamba spraying again, EPA failed to follow the Court's order and more
 20
 21

22
 23 ¹ EPA, *Memorandum Supporting Decision to Approve Registration for*
 24 *the Uses of Dicamba on Dicamba Tolerant Cotton and Soybean* (Oct. 27,
 2020) (attached as Exhibit A).

25 ² EPA, *Engenia Regulatory Notice and Label* (Oct. 27, 2020) (attached
 26 as Exhibit B); EPA, *Tavium Regulatory Notice and Label* (Oct. 27, 2020)
 27 (attached as Exhibit C); EPA, *XtendiMax Regulatory Notice and Label* (Oct.
 28 27, 2020) (attached as Exhibit D).

1 generally to comply with FIFRA's mandates and the ESA. Instead, it tried to
2 paper over the problems the Court found and in the process created new ones.

3 3. Dicamba (3,6-dichloro-2-methoxybenzoic acid) is a broad-
4 spectrum herbicide, a type of pesticide, a toxic substance intended to harm or
5 kill. It is an effective weed-killer, but its toxicity is not limited to weeds. It
6 can also kill many desirable broadleaf plants, bushes, and trees.

7 4. It also has a well-known drawback: dicamba is volatile, moving
8 easily off a field on which a farmer has sprayed it. It can drift if the wind
9 blows during application; it can drift if applied during temperature
10 inversions; it can drift after application when it volatilizes, or turns to vapor,
11 during hot weather. Dicamba is well known to cause widespread damage to
12 conventional crops and wild plants and significantly injure farmers' crops and
13 the environment. As a result of its toxicity and its tendency to drift, dicamba
14 has historically been limited to clearing fields of weeds, either before crops
15 were planted or before newly planted crops emerged.

16 5. This changed in 2016. The agrichemical company Monsanto
17 Company (Monsanto) had previously licensed a patented gene from the
18 University of Nebraska that it then proceeded to genetically engineer into
19 soybean and cotton plants, to make them resistant to dicamba. In a vast and
20 extremely risky new experiment, in 2016, EPA for the first time registered a
21 "new use" of these dicamba products: to be sprayed during the 2017 summer
22 growing season, over-the-top of soybean and cotton crops that Monsanto
23 genetically engineered with resistance to the pesticide.

24 6. That approval led to over 25 million more pounds of dicamba
25 sprayed annually, increases of 8-12 fold in pounds, across nearly 100 million
26 acres, at new times of the year and in novel ways. The approval created a
27 debacle that agronomists say is unprecedented in the history of U.S.

1 agriculture: the spraying of massive amounts of dicamba, resulting in
2 millions of acres of crops damaged and sometimes destroyed by dicamba
3 spray droplets drifting off-field during application; dicamba vapor clouds
4 damaging vast fields from fencerow to fencerow; dicamba-laced water
5 running off sprayed fields; and even dicamba-contaminated rainfall in areas
6 of intensive use. Millions of acres of off-field dicamba drift and runoff resulted
7 in widespread destruction of crops, economic losses, social upheaval to rural
8 communities, and harm to endangered species and other wildlife.

9 7. This is the third case in a series since 2016 regarding EPA's
10 approvals of these dicamba products for this new and novel spraying. The
11 Ninth Circuit heard each of the prior cases directly under 7 U.S.C. § 136n(b).
12 In the first suit, Petition for Review, *Nat'l Family Farm Coalition v. EPA*, No.
13 17-70196 (9th Cir. Jan. 20, 2017), the same four nonprofits that are the
14 Plaintiffs here challenged EPA's original November 2016 registration of the
15 dicamba products. That initial registration was for 2 years.

16 8. After completing briefing and an August 2018 oral argument, but
17 before the Court issued a decision, EPA issued a second 2-year continuation
18 of the registrations, this time until December 2020. The Court held the 2016
19 case moot and required petitioners to refile an expedited case. *Nat'l Family*
20 *Farm Coalition v. EPA*, 747 F. App'x 646 (9th Cir. 2019).

21 9. The Plaintiffs did so, then challenging the November 2018
22 decision. Petition for Review, *Nat'l Family Farm Coalition v. EPA (NFFC I)*,
23 No. 19-70115 (9th Cir. Jan. 11, 2019). The Ninth Circuit heard oral argument
24 again in April 2020 and in June 2020 issued its decision, granting Plaintiffs'
25 petition for review and holding that EPA had violated FIFRA in issuing the
26 registration decision. *Nat'l Family Farm Coalition v. EPA (NFFC II)*, 960
27 F.3d 1120, 1144 (9th Cir. 2020).

1 10. Among other holdings, the Ninth Circuit concluded that EPA
2 violated FIFRA by substantially underestimating several important risks and
3 costs, including the amount of dicamba sprayed, the number of injury reports,
4 and the amount and costs of crop damage from spraying. The Court also
5 found that EPA completely failed to consider and account for several other
6 costs, such as economic losses ensuing from anti-competitive effects of the
7 registrations, as well as the social costs of strife and dissension in farming
8 communities triggered by rampant off-target dicamba damage to neighbors'
9 crops. Finally, it also held that EPA violated FIFRA by predicated its
10 conclusion that its approval would have no adverse economic and
11 environmental effects on label mitigation—in the form of weather-related
12 label use restrictions—that substantial record evidence demonstrated were so
13 extreme that farmers could not both follow them and have any hope of
14 controlling weeds. EPA failed to consider and analyze whether following
15 those directions was possible in real world farming conditions. *NFFC II*, 960
16 F.3d at 1144.

17 11. In light of the “substantial” flaws in EPA’s decision, the Ninth
18 Circuit did not find it necessary to reach the ESA arguments and vacated the
19 registrations. *Id.* at 1145.

20 12. The registrant companies again applied for new registrations just
21 weeks after the Ninth Circuit’s decision, on July 2. EPA then approved those
22 registrations just days before the presidential election, on October 27,
23 announcing it at a press conference in a Georgia cotton field.

24 13. The Registration Actions proved just as damaging as the prior
25 dicamba registrations. In December 2021, EPA released a report admitting to
26 widespread dicamba damage in 29 of 34 states during the 2021 growing
27 season and potential harms to federally protected species. *See* Ex. H. This
28

1 prompted EPA's Registration Amendments in March 2022, which add more
2 use restrictions for Iowa and Minnesota.

3 14. The Registration Actions and Registration Amendments
4 challenged here have many of the same fundamental flaws as the prior
5 approval vacated in June 2020 as well as some new ones.

6 15. First, the Registration Actions again either underestimate or
7 ignore risks and costs to farmers and the environment from its decision.
8 These include: damage to crops and wild plants resulting from off-field drift
9 and run-off of dicamba; economic harm from crop damage; anti-competitive
10 effects resulting in economic losses from forced purchase of dicamba-resistant
11 seeds for defense against drift damage; social strife in farming communities
12 between dicamba users and those whose crops are damaged by dicamba drift;
13 and reliance on an impossible label without analyzing whether it can actually
14 be followed in real world conditions.

15 16. Among other violations, EPA again failed to study and account
16 for the substantial likelihood that even trained pesticide applicators, despite
17 their best efforts, cannot both follow the use directions and control weeds.
18 The Registration Actions provide many of the same highly restrictive use
19 directions as the 2017 label discussed and found deficient in *NFFC II*, and
20 several additional, complicated restrictions that the Ninth Circuit warned
21 would likely result in increased non-compliance in future growing seasons.
22 EPA's failure to consider this aspect of the registrations will result in further
23 destruction of crops and environmental harm in violation of FIFRA. 7 U.S.C.
24 § 136a(C)(5).

25 17. EPA also trumped up the benefits of dicamba over-the-top
26 spraying but again left out any assessment of its true economic costs to
27 farmers, as FIFRA requires. 7 U.S.C. § 136(bb). These products resulted in
28

1 the destruction of crops and significant economic losses from off-field drift
2 and runoff. And, as the Ninth Circuit explained, harm from drift also caused
3 “defensive adoption”; that is, farmers with no choice but to buy and plant soy
4 and cotton seeds genetically engineered with resistance in order to protect
5 against the otherwise inevitable drift damage. That impact had
6 monopolizing, anti-competitive effects on agricultural markets: for instance
7 small seed companies losing sales of non-dicamba-resistant seeds and
8 farmers losing their right to plant what they choose (and in terms of forced
9 purchase of more expensive seeds). *NFFC II*, 960 F.3d at 1142. EPA *again*
10 failed to analyze and consider these economic impacts in its approval.

11 18. EPA also failed to take into account the social costs of the
12 registrations on farming communities. The unprecedented drift crisis during
13 past growing seasons resulted in “severe strain on social relations in farming
14 communities,” *id.* at 1143, as farmers began threatening farmers; destroying
15 their neighbors’ crops, trees, ornamentals, and gardens; and even resorting to
16 acts of violence. *Id.* These substantial impacts are nowhere accounted for in
17 this decision, let alone rigorously analyzed, in violation of FIFRA. 7 U.S.C. §
18 136(bb).

19 19. Second, the decision also found separate ways to violate FIFRA
20 beyond the substantive errors in the registrations. For example, the prior
21 registration was a “conditional” registration, because EPA admitted it lacked
22 all the necessary studies in order to register the products “unconditionally.”
23 Instead, it ordered the manufacturers to submit more studies on numerous
24 important issues, such as off-field drift harm to trees.

25 20. This time EPA issued an “unconditional” registration for these
26 products. Unconditional registration requires that EPA assess and find that a
27 pesticide will not cause unreasonable adverse effects when used “in
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1 accordance with widespread and commonly recognized practice.” 7 U.S.C. §
2 136a(C)(5). It also requires EPA to find that the pesticide “will perform its
3 intended function” without causing unreasonable adverse effects on the
4 environment.” 7 U.S.C. § 136a(C)(5). EPA’s byzantine, unrealistic use
5 requirements for the products are *not* common practice nor do they permit
6 farmers to use the product for its intended function effectively: to kill weeds,
7 and still follow them. To register a pesticide unconditionally, EPA must find
8 that it can be sprayed and accomplish its intended purpose in the real world
9 of farming, using common and accepted methods and *still* not cause
10 unreasonable adverse effects, not according to whatever hypothetically EPA
11 can think up to put on a label.

12 21. Third, EPA also violated FIFRA and the APA by failing to
13 provide a formal notice and comment period despite approval a new use of
14 these products. EPA’s failure forced Plaintiffs to file protectively also in this
15 court, rather than only in the Ninth Circuit directly, like the case’s
16 predecessors. A new use approval requires notice and comment, and FIFRA
17 decisions with notice and comment proceed directly to the Court of Appeals.
18 Because there was no prior *lawful* new use, this attempt is still EPA’s first
19 attempt at a lawful new use, which under FIFRA should require notice and
20 comment. Yet EPA did not provide notice and an opportunity to comment
21 before issuing the challenged Registration Actions in 2020.

22 22. Fourth, EPA took the occasion of issuing the Registration Actions
23 approving three specific dicamba products also to make a sweeping rule
24 change for not just those pesticides, but also *all* pesticides, and in a footnote
25 no less. The last few seasons of rampant dicamba drift, coupled with EPA’s
26 failure to contain it, has forced states to step into the regulatory breach and
27 install their own state-specific restrictions, using a provision under FIFRA
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1 section 24(c) that permits states to take quick action to address special local
 2 needs in their states. In the footnote, EPA now has declared for the first time
 3 that states can no longer use this authority and can only undertake any
 4 restrictive action using much more time-consuming measures, such as state
 5 legislative action or formal agency rulemaking. This was a reversal of a
 6 decades-old rule. EPA made this rule change without any notice and
 7 comment, despite earlier promises that it would have notice and comment if
 8 it ever did alter states' rights in this way. EPA's failure to hold notice and
 9 comment prior to its removal of states' authority under FIFRA section 24(c)
 10 violated the APA.

11 23. Fifth, the Registration Actions and Registration Amendments
 12 violate the Endangered Species Act. Despite documented damage, lack of
 13 analysis, and potential harm to hundreds of endangered plants and animals
 14 and their critical habitats, EPA made the unprecedented finding, again, that
 15 the Registration Actions would have "no effect" and, therefore, did not consult
 16 with the expert wildlife agencies in violation of Section 7(a)(2). 16 U.S.C. §
 17 1536(a)(2). And despite EPA's admission that hundreds of incidents occurred
 18 in counties with federally protected species in 2021, EPA's Registration
 19 Amendments fail to explain how additional restrictions will prevent further
 20 harms. Plaintiffs submitted a 60-day notice letter³ on December 14, 2020 to
 21 exhaust those claims before amending this complaint to include them.

24 ³ *Notice of Intent to Sue for Violations of the Endangered Species Act*
 25 *Concerning EPA's Authorized Uses of Dicamba on Genetically Engineered*
 26 *Cotton and Soybean* (Dec. 14, 2020), *available at*
 27 [https://www.centerforfoodsafety.org/files/noi-letter-dicamba_12_14_2020-](https://www.centerforfoodsafety.org/files/noi-letter-dicamba_12_14_2020-final_90779.pdf)
 28 [final_90779.pdf](https://www.centerforfoodsafety.org/files/noi-letter-dicamba_12_14_2020-final_90779.pdf).

1 24. Sixth, the Registration Amendments violate FIFRA because EPA
2 lacked substantial evidence to support its determination that the
3 Registration Amendments would prevent unreasonable adverse effects on the
4 environment. Instead, the Registration Amendments include use restrictions
5 that EPA had found infeasible or ineffective months before in its December
6 2021 Report and fail to include any restrictions that may mitigate the social
7 and economic impacts found in December 2021.

8 25. The Registration Actions challenged here are also based on many
9 of the same studies EPA now admits were compromised due to political
10 interference. *See* Memorandum from Michal Freedhoff to the Office of
11 Chemical Safety and Pollution Prevention (Mar. 10, 2021). In approving the
12 2018 continuation, senior leadership directed staff to “(1) rely on a limited
13 data set of plant effects endpoints; (2) discount specific studies (some with
14 more robust data) used in assessing potential risks and benefits; and (3)
15 discount scientific information on negative impacts.” *Id.* In doing so, EPA
16 failed to act with scientific integrity in 2018, and now again in 2020.

17 26. Accordingly, for the reasons stated above, Plaintiffs ask the Court
18 to hold and declare that EPA substantially and procedurally violated FIFRA
19 and the APA in issuing the Registration Actions registering these dicamba
20 products without substantial evidence and without holding notice and
21 comment and violated FIFRA and the APA in approving the Registration
22 Amendments. Plaintiffs also ask the Court to hold and declare that EPA
23 violated section 7(a)(2) of the ESA, 16 U.S.C. § 1536(a)(2), by failing to
24 complete consultation necessary to ensure that the Registration Actions are
25 not likely to jeopardize the continued existence of listed species or destroy or
26 adversely modify their critical habitat and failing to address harms to species
27 in the Registration Amendments. Plaintiffs also ask that the Court vacate
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1 these registrations and Registration Amendments and grant relief as
 2 necessary and appropriate to halt the use and sale of dicamba products
 3 authorized by this decision. Plaintiffs also ask the Court to hold that EPA
 4 violated FIFRA and the APA with regard to its new restriction of states'
 5 FIFRA 24(c) authority without holding notice and comment and to vacate
 6 that decision.

7 8 JURISDICTION AND VENUE

9 27. This Court has jurisdiction pursuant to 7 U.S.C. § 136n(a) of
 10 FIFRA because EPA issued the Registration Actions and Registration
 11 Amendments without a public hearing. *See infra* ¶ 243. Jurisdiction is also
 12 proper under 28 U.S.C. § 1331 (federal question), 28 U.S.C. § 1346 (United
 13 States as defendant), 28 U.S.C. §§ 2201-02 (declaratory relief), and 5 U.S.C. §
 14 702 (APA).

15 28. Venue properly lies in this Court pursuant to 28 U.S.C. §
 16 1391(e)(1)(c) because one or more Plaintiffs reside in this district, and
 17 pursuant to 28 U.S.C. § 1391(e)(1)(b), because a substantial part of the events
 18 or omissions giving rise to the claim occurred, or a substantial part of
 19 property that is the subject of the action is situated, in this district.

20 29. Arizona is among the 34 states authorized by the Registration
 21 Actions for application of the three registered dicamba products. Numerous
 22 farmer and gardener members of Plaintiff organizations reside in Arizona
 23 and are thus exposed to the threat of dicamba drift on their property in
 24 Arizona. Others are conservationists that reside in Arizona whose
 25 professional and personal interests in Arizona endangered species and
 26 wildlife are injured.

PARTIES

30. The Plaintiffs in this case are the same for nonprofit organizations that were the plaintiff/petitioners in the prior cases.

National Family Farm Coalition

31. National Family Farm Coalition (NFFC) is a nationwide nonprofit corporation that serves as a national link for a coalition of family farm and rural groups on the challenges facing family farms and rural communities. Founded in 1986, NFFC today represents farmers and ranchers from 30 grassroots member organizations in 42 states, including where the EPA has approved the registrations challenged here. NFFC's combined grassroots strength and national level experience enables a unique role in securing a sustainable, economically just, healthy, safe, and secure food and farm system. Most relevant here, since the mid-1990s, NFFC has devoted significant resources to addressing the harms stemming from the use of pesticides on genetically engineered, pesticide-resistant crops. NFFC has also published reports and worked to address problems farmers have faced through concentration in the seed industry, including diminished options, higher costs, and the increased use of toxic herbicides.

32. NFFC and its members are being, and will be, adversely affected by EPA's Registration Actions. *See infra* ¶¶ 368-397.

Center for Biological Diversity

33. The Center for Biological Diversity (CBD) is a nonprofit membership organization headquartered in Arizona. CBD was founded in 1989 to fight the growing number of threats to biodiversity. CBD's mission is to secure a future for all species, great and small, hovering on the brink of extinction through science, policy, education, and environmental law. The

1 Center has a full-time staff of scientists, lawyers, and other professionals who
2 work exclusively on campaigns to save species and their habitats. One of
3 CBD's flagship programs is its environmental health program, which focuses
4 on, among other things, the adverse impacts of pesticides, such as those
5 approved by EPA here. CBD's members rely on CBD to represent their
6 interests in protecting biodiversity and conserving threatened and
7 endangered species and their habitats.

8 34. CBD and its members are being, and will be, adversely affected
9 by EPA's Registration Actions. *See infra* ¶¶ 368-397.

10 **Pesticide Action Network North America**

11 35. Pesticide Action Network North America (PANNA) is a
12 California-based, nonprofit corporation founded in 1982 to combat the
13 proliferation of pesticide-intensive, monocrop agriculture. PANNA's mission
14 is to advance a vision of agriculture that replaces the use of hazardous
15 pesticides with healthier, ecologically-sound pest management. In addition to
16 having thousands of members who are conservationists, many of PANNA's
17 members are also farmers, who live, farm, and recreate in many locations
18 where the approved dicamba use has been sprayed or will be sprayed. Since
19 the outset of the dicamba controversy, PANNA has worked to reduce the
20 negative health and livelihood impacts of pesticide drift in the states where
21 over-the-top dicamba has been approved for use.

22 36. PANNA and its members are being, and will be, adversely
23 affected by the Registration Actions. *See infra* ¶¶ 368-397.

24 **Center for Food Safety**

25 37. CFS is a nonprofit membership organization with its
26 headquarters in in San Francisco, California and offices in Portland, Oregon
27 and Washington, D.C. Since its inception in 1997, CFS's mission has been to
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1 empower people, support farmers, and protect the environment from the
 2 harmful impacts of industrial agriculture. This mission includes a flagship
 3 CFS program on the adverse environmental and socioeconomic impacts of
 4 pesticides. CFS has specifically worked on the dicamba controversy since its
 5 inception. CFS represents more than 970,000 farmer and consumer members,
 6 in every state throughout the country, including over 300,000 in the 34 states
 7 covered by the over-the-top dicamba approval challenged in this case.

8 38. CFS and its members are being, and will be, adversely affected
 9 by EPA's Registration Actions. *See infra* ¶¶ 368-397.

10 **Defendants**

11 39. Defendant Edward Messina is the Director of the Office of
 12 Pesticide Programs of EPA and is being sued in his official capacity.

13 40. Defendant Michael S. Regan is the Acting Administrator and
 14 Deputy Administrator of EPA and is being sued in his official capacity.

15 41. Defendant EPA is an agency of the United States federal
 16 government. FIFRA vests EPA with responsibility for registering pesticides
 17 and ensuring that pesticide registrations comply with all applicable law.

18 42. Defendants Messina, Regan, and EPA are collectively referred to
 19 as EPA or Defendants.

20 **STATUTORY BACKGROUND**

21 **Federal Insecticide, Fungicide, and Rodenticide Act**

22 43. FIFRA is the comprehensive federal statutory scheme regulating
 23 pesticides (including herbicides like dicamba, one subcategory of pesticides),
 24 including their use, sales, and labeling. 7 U.S.C. § 136 *et seq.* The statute is
 25 administered by EPA at a federal level, *id.* § 136a(a), with robust roles for
 26 states in regulation and enforcement, *id.* § 136w-1.
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1 44. The main mechanism used to regulate pesticides is known as
 2 registration. 7 U.S.C. § 136a(a). Before any pesticide can be sold or used in
 3 the United States, EPA must register the pesticide: provide a license that
 4 establishes the terms and conditions under which the pesticide may be
 5 lawfully sold, distributed, and used within the United States. *Id.* § 136a(c).
 6 The terms and conditions of the registration include exactly what product can
 7 be sold and used, and for what specific uses, and how it can be used (*e.g.*,
 8 what crops it can be sprayed on and how). 40 C.F.R. §§ 152.115, 156.10.

9 *Unreasonable Adverse Effects on the Environment*

10 45. In registering pesticides, the core baseline statutory standard
 11 EPA applies is the “unreasonable adverse effects” standard. That is, FIFRA
 12 applies a cost-benefit analysis “to ensure that there is no unreasonable risk
 13 created for people or the environment from a pesticide.” *Pollinator*
 14 *Stewardship Council v. EPA*, 806 F.3d 520, 522-23 (9th Cir. 2015). EPA may
 15 deny an application for registration when “necessary to prevent unreasonable
 16 adverse effects on the environment.” *Id.*; 7 U.S.C. § 136a(a).

17 46. FIFRA defines “unreasonable adverse effects on the
 18 environment” to mean “any unreasonable risk to man or the environment,
 19 taking into account the economic, social, and environmental costs and
 20 benefits of the use of any pesticide.” 7 U.S.C. § 136(bb).

21 47. Congress anticipated EPA’s careful balancing of costs and
 22 benefits would “take *every* relevant factor [the agency] can conceive into
 23 account.” S. Rep. 838, 92d Cong. 2d Sess., *reprinted in* 1972 U.S.C.C.A.N.
 24 3993, 4032-33.

25 48. Congress intended for EPA, among other relevant factors, to
 26 carefully consider “hazards to farmworkers, hazards to birds and animals and
 27 children yet unborn . . . the need for food and clothing and forest products,
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1 forest and grassland cover to keep the rain where it falls, prevent floods,
2 provide clear water . . . aesthetic values, the beauty and inspiration of nature,
3 the comfort and health of man.” *Id.*

4 49. In order to register a new pesticide, a manufacturer must submit
5 an application for registration, describing how the pesticide will be used, the
6 claims made of its benefits, the ingredients, and a description of all tests and
7 studies done and their results, concerning the product’s health, safety, and
8 environmental effects. 7 U.S.C. § 136a(c).

9 *New Uses of an Existing Pesticide*

10 50. FIFRA also provides for the registration not just of a pesticide
11 active ingredient, but also any “new uses” of an already registered pesticide,
12 such as here, over-the-top spraying of dicamba products on soy and cotton
13 engineered with resistance to the pesticide.

14 51. EPA must hold notice and comment for new use registrations.
15 FIFRA requires that EPA “shall publish” in the Federal Register a “notice of
16 receipt of application” and a “notice of issuance” for every pesticide product
17 registration that utilizes a “new active ingredient” or that entails a “changed
18 use pattern.” 7 U.S.C. § 136a(c)(4); 40 C.F.R. § 152.102.

19 52. A “new use” is defined to include, among other things, “any
20 additional use pattern that would result in a significant increase in the level
21 of exposure, or a change in the route of exposure, to the active ingredient of
22 man or other organisms.” 40 C.F.R. § 152.3. New uses include uses of “new
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1 active ingredients, first food use, first outdoor use, first residential use, or
 2 other actions of significant interest.”⁴

3 *Conditional Registration of New Uses*

4 53. In order to obtain registration, an applicant must submit
 5 sufficient data concerning the pesticide’s health, safety, and environmental
 6 effects, in order to ensure that EPA prohibits pesticides that would cause
 7 unreasonable adverse effects on the environment. *Pollinator Stewardship*
 8 *Council*, 806 F.3d at 523; 7 U.S.C § 136a(c)(5).

9 54. Sometimes, however, EPA may receive sufficient data to
 10 determine that short-term use of a pesticide is reasonable, but that there is
 11 not sufficient data supporting its long-term use. In these “special
 12 circumstances,” EPA can grant a conditional registration of the pesticide or
 13 pesticide new use. *See* 7 U.S.C. § 136a(c)(7).

14 55. For new uses like those at issue here, in the situation where
 15 there are insufficient data for unconditional registration, Section 3(c)(7)(B)
 16 authorizes EPA to “conditionally amend” the existing registration of a
 17 pesticide to allow for new uses, while the missing data are prepared and
 18 submitted. This is the type of action EPA took previously in the 2018
 19 registration decision with regards to the dicamba pesticide products, the
 20 decision vacated by the Ninth Circuit. *NFFC II*, 960 F.3d at 1133.

21 56. For such a conditional new use registration, EPA must find that,
 22 notwithstanding the lack of data for unconditional registration, there are still
 23 “satisfactory data pertaining to the proposed additional use.” 7 U.S.C.

24
 25 ⁴ EPA, *Public Participation Process for Registration Actions*,
 26 [https://www.epa.gov/pesticide-registration/public-participation-process-](https://www.epa.gov/pesticide-registration/public-participation-process-registration-actions)
 27 [registration-actions](https://www.epa.gov/pesticide-registration/public-participation-process-registration-actions) (last visited Dec. 16, 2020).

1 § 136a(c)(7)(B). And EPA must find that the conditional new use amendment
 2 will not “significantly increase the risk of any unreasonable adverse effect on
 3 the environment.” *Id.*⁵

4 *Unconditional Registration*

5 57. On the other hand, unconditional registration is the type of
 6 registration EPA granted in the challenged Registration Actions.

7 58. In contrast to conditional registration, unconditional registration
 8 necessarily requires all data to evaluate the environmental risks. EPA must
 9 “review[] all relevant data in [its] possession” and “determine[] that no
 10 additional data are necessary” to its decision. 40 C.F.R. §§ 152.112(b), (c).

11 59. EPA can unconditionally register the pesticide only if it will “not
 12 generally cause unreasonable adverse effects on the environment” and not do
 13 so “when used in accordance with widespread and commonly recognized
 14 practice.” *Id.* § 152.112(e).

15 60. In FIFRA’s legislative history, Congress stated that “[i]f a
 16 pesticide is such that when used in accordance with its label or common
 17 practice it is injurious to man, other vertebrates, or useful plants, it cannot be
 18 registered under the Act and cannot be sold or distributed in interstate
 19 commerce.” S. Rep. 838, 92d Cong. 2d Sess., *reprinted in* 1972 U.S.C.C.A.N.
 20 3993, 3996.

21
 22
 23 ⁵ There are two other types of conditional registrations which require
 24 different findings from EPA: for “me too” pesticides, 7 U.S.C. § 136a(c)(7)(A),
 25 which are substantially similar to existing registered pesticides; and
 26 conditional registration for new active ingredients, 7 U.S.C. § 136a(c)(7)(C).
 27 *See NRDC v. EPA*, 857 F.3d 1030 (9th Cir. 2017) (judicial review of a
 28 conditional new active ingredient registration). Neither of these are at issue
 here.

1 61. As compared to conditional registration, unconditional
 2 registration imposes a higher standard, both in terms of the data it requires
 3 as well as its risk standard. Whereas for conditional only “satisfactory data”
 4 are required, 7 U.S.C. § 136a(c)(7)(B), for unconditional, EPA must determine
 5 that “no additional data are necessary.” 40 C.F.R. § 152.112(c).

6 62. Thus the required unconditional registration finding of no
 7 “unreasonable adverse effects” is tied to two prerequisites: (1) that the
 8 pesticide when used as approved will perform its intended function and that
 9 (2) that its use in common and widespread practice will not cause
 10 unreasonable adverse effects.

11 63. Whereas for conditional, EPA must only determine that the
 12 conditional new use will not “significantly increase the risk of any
 13 unreasonable adverse effect” beyond the already existing registration, 7
 14 U.S.C. § 136a(c)(7)(B), an unconditional registration requires that EPA must
 15 find the pesticide “will perform its intended function without unreasonable
 16 adverse effects on the environment.” *Id.* § 136a(c)(5)(C). EPA must also find
 17 that “when used in accordance with widespread and commonly recognized
 18 practice [the pesticide] will not generally cause unreasonable adverse effects
 19 on the environment.” *Id.* § 136a(c)(5)(D).

20 *Amended Registrations*

21 64. EPA possesses sole authority to approve all proposed labeling
 22 and may order any changes necessary to ensure that the label complies with
 23 FIFRA. 40 C.F.R. §§ 152.112(f), 156.10(a)(6).

24 65. Following such label approval, “[a] registrant may distribute or
 25 sell [the] registered product with the composition, packaging and labeling
 26 currently approved by the Agency.” *Id.* § 152.130(a).

1 66. Thereafter, the label may not be changed, except in the most
 2 minor and technical ways, without EPA permission. *See* 7 U.S.C. § 136a(f)(1);
 3 40 C.F.R. §§ 152.44, 152.46.

4 67. With respect to label alterations and revisions, manufacturers
 5 are required to submit to the EPA an application for an amended registration
 6 supported by extensive scientific test data. 40 C.F.R. § 152.44.

7 *Registration Review*

8 68. FIFRA requires EPA to review all registered pesticide every
 9 fifteen years and determine whether the pesticide still meets the FIFRA
 10 standard for registration: that the pesticide not cause “unreasonable adverse
 11 effects on the environment.” 7 U.S.C. § 136a(a), (g); 40 C.F.R. § 155.40(a).

12 69. Registration review enables EPA to reassess a pesticide in light
 13 of evolving science, improved ability to detect risks, and policy changes. EPA
 14 must ensure that each pesticide’s registration “is based on current scientific
 15 and other knowledge regarding the pesticide, including its effects on human
 16 health and the environment.” 40 C.F.R. § 155.40(a)(1). Accordingly, EPA may
 17 identify and solicit data or information that it does not have, but would be
 18 useful to its review. *Id.* § 155.50(b)-(c). Among other things, EPA must
 19 “assess any changes that may have occurred since the Agency’s last
 20 registration decision in order to determine the significance of such changes
 21 and whether the pesticide still satisfies the FIFRA standard for registration.”
 22 *Id.* § 155.53(a).

23 70. Before completing a registration review, EPA may issue, when it
 24 determines it to be appropriate, an interim registration review decision. 40
 25 C.F.R. § 155.56. Among other things, an interim registration review decision
 26 may require new risk mitigation measures, impose interim risk mitigation
 27 measures, identify data or information required to complete the review,
 28

1 include schedules for submitting the required data, and conduct the new risk
2 assessment and completing the registration review. *Id.*

3 71. Whether EPA issues an interim registration review decision or a
4 review decision, it must first publish a proposed decision and allow at least
5 sixty days for public comment. *Id.* § 155.58(a). In the proposed decision, EPA
6 must state its proposed findings with respect to the FIFRA standard for
7 registration and its rationale, identify proposed risk mitigation measures or
8 other remedies as needed and describe its rationale, state whether it believes
9 that additional data are needed and, if so, describe what is needed, specify
10 proposed labeling changes, and identify deadlines for completing any
11 required actions. *Id.* § 155.58(b). After considering comments on the proposed
12 decision, EPA issues a final decision. *Id.* § 155.58(c). EPA must explain any
13 changes to the proposed decision and provide a response to significant
14 comments. *Id.* The registration review docket remains open “until all actions
15 required in the final decision on the registration review case have been
16 completed.” *Id.*

17 *Judicial Review*

18 72. Under FIFRA, final actions of EPA “not following a hearing,”
19 such as the Registration Actions at issue here, are “judicially reviewable by
20 the district courts of the United States. 7 U.S.C. § 136n(a). This Circuit has
21 explained that a “hearing” or “public hearing” within the meaning of FIFRA’s
22 judicial review provision is a “quasi-judicial” process to for fact-finding and
23 development of a complete record, a process that is not met by the submission
24 of written comments to the agency alone. *See United Farm Workers of Am. V.*
25 *EPA*, 592 F.3d 1080, 1087 (9th Cir. 2010). Judicial review must be “searching
26 and careful, subjecting the agency decision to close judicial scrutiny.”
27 *Containerfreight Corp. v. United States*, 752 F.2d 419, 422 (9th Cir. 1985).

1 EPA's decision can only be upheld only if it is supported with "substantial
 2 evidence" in the record. 7 U.S.C. § 136n(b); *see Pollinator Stewardship*
 3 *Council*, 806 F.3d at 533 (stating that the standard of review under FIFRA is
 4 whether the registration "is supported by substantial evidence when
 5 considered on the record as a whole," and that "[t]he substantial evidence
 6 standard affords an agency less deference than the arbitrary and capricious
 7 standard."). The agency's action may be upheld only on the "basis articulated
 8 by the agency itself." *Pollinator Stewardship Council*, 806 F.3d at 532
 9 (quoting *Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto.*
 10 *Ins. Co.*, 463 U.S. 29, 50 (1983)).

11 *State Regulation of New Uses under FIFRA 24(c)*

12 73. Until the current decision, for several decades, EPA has
 13 interpreted Section 24(c), 7 U.S.C. § 136v(c), as permitting states to take
 14 prompt action to address local agricultural, environmental, or public health
 15 needs by adding further restrictions to federal pesticide labels.⁶
 16 FIFRA Section 24(c) further provides: "A State may provide registration for
 17 additional uses of federally registered pesticides formulated for distribution
 18 and use within that State to meet special local needs in accord with the
 19 purposes of this Act and if registration for such use has not previously been
 20 denied, disapproved, or canceled by the Administrator." 7 U.S.C § 136v(c)(1).

21
 22
 23
 24
 25
 26 ⁶ *See* EPA, *Guidance on FIFRA 24(c) Registrations*,
 27 <https://www.epa.gov/pesticide-registration/guidance-fifra-24c-registrations>
 28 (last visited Dec. 16, 2020)

1 **Endangered Species Act**

2 74. When a species is listed as threatened or endangered under the
3 ESA, section 7(a)(2) requires that “each federal agency shall, in consultation
4 with and with the assistance of the [Service], insure that any action
5 authorized, funded, or carried out by such agency is not likely to jeopardize
6 the continued existence of any endangered species or threatened species or
7 result in the destruction or adverse modification of habitat of such species
8 which is determined by the [Service] . . . to be critical.” 16 U.S.C. § 1536(a)(2).

9 75. The “institutionalized caution” embodied in the ESA requires
10 federal agencies to give the benefit of the doubt to listed species and places
11 the burden of risk and uncertainty on the proposed action. *See Sierra Club v.*
12 *Marsh*, 816 F.2d 1376, 1386 (9th Cir. 1987); *Tennessee Valley Auth. v. Hill*,
13 437 U.S. 153, 180 (1978).

14 76. The ESA establishes an interagency consultation process to assist
15 federal agencies in complying with their substantive section 7(a)(2) duty to
16 guard against jeopardy to listed species or destruction or adverse
17 modification of critical habitat. Under section 7(a)(2), federal agencies must
18 consult with the appropriate expert fish and wildlife agency to determine
19 whether their actions will jeopardize any listed species’ survival or adversely
20 modify designated critical habitat and, if so, to identify ways to modify the
21 action to avoid that result. *See* 50 C.F.R. § 402.14. The National Marine
22 Fisheries Service (NMFS) is the expert fish and wildlife agency with respect
23 to most anadromous and marine species, and Fish and Wildlife Service (FWS)
24 is the expert agency with respect to many terrestrial and freshwater species.

25 77. The Services have adopted joint regulations governing the section
26 7(a)(2) consultation process. Under the joint regulations, a federal agency
27 must initiate a section 7(a)(2) consultation with NMFS or FWS whenever it
28

undertakes an “action” that “may affect” a listed species or critical habitat. 50 C.F.R. § 402.14(a). The threshold for a “may affect” determination and the required ESA section 7(a)(2) consultation is low. *See* 51 Fed. Reg. 19,926, 19,949 (June 3, 1986) (“Any possible effect, whether beneficial, benign, adverse, or of an undetermined character, triggers the formal consultation requirement.”). *See also* FWS, *Endangered Species Consultation Handbook* at 3-13, 4-26 (1998). An agency is relieved of the obligation to consult only if the action will have “no effect” on listed species or designated critical habitat.

78. The joint regulations broadly define the scope of agency actions subject to ESA section 7(a)(2) mandates to encompass “all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by [f]ederal agencies.” 50 C.F.R. § 402.02 (definition of “action”). Courts interpret the term “agency action” broadly under the ESA. *See, e.g., Karuk Tribe of California v. U.S. Forest Service*, 681 F.3d 1006, 1020 (9th Cir. 2012) (en banc).

79. Under the ESA, the “action area” is broadly defined as “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.” 50 C.F.R. § 402.02. The potential “effects” of an agency action that an agency must consider are similarly broad and include both the “direct” and “indirect” effects of the action and all activities “interrelated or interdependent” with that action. *Id.*

80. In insuring that any action is not likely to jeopardize a listed species or result in the adverse modification of critical habitat, the ESA’s Section 7 requires that every agency “shall” use only the “best scientific and commercial data available” at every step of the process. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(g)(8).

1 81. If an agency determines that its action “may affect” but is “not
2 likely to adversely affect” a listed species or its critical habitat, ESA
3 regulations permit “informal consultation,” in which there is no requirement
4 for a biological opinion so long as NMFS or FWS concurs in writing with the
5 “not likely to adversely affect” determination. 50 C.F.R. § 402.13. If the
6 Service(s) do not concur in the “not likely to adversely affect” determination
7 or if the action agency determines that the action is “likely to adversely
8 affect” the listed species, the agencies must engage in “formal consultation.”
9 50 C.F.R. §§ 402.12, 402.14(a), (b).

10 82. Formal consultation “is a process between the Service and the
11 [f]ederal agency that commences with the [f]ederal agency’s written request
12 for consultation under section 7(a)(2) of the Act and concludes with the
13 Service’s issuance of the biological opinion under section 7(b)(3) of the Act.”
14 50 C.F.R. § 402.02.

15 83. Not only does a Section 7(a)(2) consultation assist the action
16 agency in discharging its duty to avoid jeopardy, but the biological opinion
17 also affects the agency’s obligation to avoid the “take” of listed species. Under
18 ESA Section 9, 16 U.S.C. § 1538(a)(1)(B), it is illegal for any person – whether
19 a private or governmental entity – to “take” any endangered species of fish or
20 wildlife listed under the ESA. “Take” is defined to mean harass, harm,
21 pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to
22 engage in such conduct. *Id.* at § 1532(19). The Service has defined “harm” to
23 include “significant habitat modification or degradation which actually kills
24 or injures fish or wildlife by significantly impairing essential behavioral
25 patterns, including breeding, spawning, rearing, migrating, feeding or
26 sheltering.” 50 C.F.R. § 222.102.

1 84. As part of a consultation, the Service determines whether to
 2 authorize the take of listed species through the issuance of an incidental take
 3 statement. An incidental take statement may be issued only if the action can
 4 proceed without causing jeopardy. 16 U.S.C. § 1536(b)(4). An incidental take
 5 statement must: (1) specify the impact of the incidental take on the listed
 6 species; (2) specify “reasonable and prudent measures” the agency considers
 7 necessary to minimize that impact; and (3) set forth mandatory terms and
 8 conditions. *Id.*

9 85. Section 7(d) of the ESA, 16 U.S.C. § 1536(d), provides that once a
 10 federal agency initiates consultation on an action under the ESA, the agency
 11 “shall not make any irreversible or irretrievable commitment of resources
 12 with respect to the agency action which has the effect of foreclosing the
 13 formulation or implementation of any reasonable and prudent alternative
 14 measures which would not violate subsection (a)(2) of this section.” The
 15 purpose of Section 7(d) is to maintain the environmental status quo pending
 16 the completion of consultation. Section 7(d) prohibitions remain in effect
 17 throughout the consultation period and until the federal agency has satisfied
 18 its obligations under Section 7(a)(2) that the action will not result in jeopardy
 19 to the species or adverse modification of its critical habitat.

20 21 **Administrative Procedure Act**

22 86. The APA provides for judicial review of final agency actions.
 23 “Agency action” is defined to include “the whole or a part of an agency rule,
 24 order, license, sanction, relief, or the equivalent or denial thereof, or failure to
 25 act.” 5 U.S.C. § 551(13). The APA provides that “[a] person suffering legal
 26 wrong because of agency action, or adversely affected or aggrieved by agency
 27

1 action within the meaning of a relevant statute, is entitled to judicial review
2 thereof.” *Id.* § 702.

3 87. Under the APA, a reviewing court shall “hold unlawful and set
4 aside agency action, findings, and conclusions” that it finds to be “arbitrary,
5 capricious, an abuse of discretion, or otherwise not in accordance with the
6 law” or “without observance of procedure required by law.” *Id.* §§ 706(2)(A),
7 (D).

8 88. Under the APA, an agency must publish notice of a proposed rule
9 in the Federal Register and provide comment opportunities to the public
10 before adopting a rule. *Id.* § 553(b), (c).

11 89. The APA defines “rule” as “the whole or a part of an agency
12 statement of general or particular applicability and future effect designed to
13 implement, interpret, or prescribe law or policy.” *Id.* § 551(4).

14 90. An agency must follow the procedures of the APA for a
15 substantive amendment of a prior regulation and cannot avoid the
16 procedures of the APA by taking action and calling that action a mere
17 guidance that interprets the existing regulation.

18 STATEMENT OF FACTS

19 Dicamba

20 91. Dicamba is an herbicide in the Benzoic Acid family used for
21 selective control of emerged broadleaf weeds. It is extremely toxic to all
22 broadleaf plants, including conventional cotton and soybean.

23 92. It can also damage or kill fruiting vegetables, fruit trees, grapes,
24 beans, peas, potatoes, tobacco, flowers, and ornamental plants. It can also
25 damage or kill many species of large trees, including oaks, elms, and maples.
26 Dicamba damage is easily identified by its signature marker: “leaf cupping.”
27
28

1 93. Consequently, EPA previously restricted dicamba's soybean and
2 cotton uses to before planting (preplant) to clear a field of early-season weeds
3 and to season's end to control late-season weeds (preharvest in soybeans,
4 postharvest in cotton); however, EPA had never allowed direct, over-the-top
5 application to these crops during the critical growing seasons of spring and
6 summer.⁷

7 94. Monsanto licensed the gene that, when genetically engineered
8 into soybean and cotton crops, made them resistant to dicamba.
9 Concurrently, Monsanto and several other pesticide companies reformulated
10 dicamba herbicides for use on these engineered crops.

11 95. The challenged Registration Actions approve three dicamba
12 products for over-the-top spraying: XtendiMax (Monsanto/Bayer); Engenia
13 (BASF); and Tavium (Syngenta). These pesticide products are part of a crop
14 system, sold and used with genetically engineered, dicamba-resistant cotton
15 and soy seeds.

16 *Dicamba and Drift Harm*

17 96. Several dicamba properties render it much more likely than other
18 herbicides to cause widespread damage to plants and other organisms, both
19 on treated fields and in surrounding areas. First, as an auxin-mimicking
20 herbicide, dicamba is highly toxic to an extremely broad range of flowering
21 plants, including trees, shrubs, soybeans and cotton, as well as nearly all
22 vegetables and fruit crops.

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24
25 ⁷ Post-emergent use of dicamba is limited to cereal crops that are
26 naturally tolerant of dicamba, such as corn or wheat, but even with these
27 crops applications must be made early in the growing season to avoid injury
28 that occurs when larger seedlings are sprayed.

1 97. Second, dicamba is also very potent, such that vanishingly small
2 amounts can cause considerable damage.

3 98. And third, while the majority of herbicides pose a drift threat
4 only when they are being applied, dicamba is extremely volatile and is known
5 to volatilize from soil and plant surfaces days after the initial application,
6 forming vapor clouds that drift and damage plants at great distances from
7 the application site.

8 99. Dicamba contaminates the environment via spray drift, vapor
9 drift, in rainfall, and in runoff from dicamba-treated fields. Such pollution
10 has ramped up dramatically with the over-the-top spraying dicamba
11 registrations. *See infra* ¶¶ 115-200.

12 100. Spray drift occurs during application. As dicamba spray solution
13 is forced under pressure through a nozzle, spray droplets are formed. Small
14 droplets remain aloft for considerable periods, and are carried by even
15 moderate winds to damage crops or wild plants in neighboring fields. Spray
16 drift damage increases with wind speed and is characterized by injury that
17 declines in severity with distance from the treated field.

18 101. Vapor drift arises from volatilization of dicamba, that is, its
19 conversion from liquid or solid form to vapor. Dicamba volatilizes during
20 spray operations, but also up to several days after an application, as dicamba
21 residues left on treated soil and plant surfaces evaporate. Vapor drift
22 increases with temperature, and thus is far more common with late spring
23 and summer over-the-top spraying of dicamba than with traditional preplant
24 use. Vapor drift is also worse under still conditions, with little or no wind,
25 which promote vapor accumulation. Finally, vapor drift is characterized by
26 broad-scale injury that is uniform in severity, fencerow to fencerow.

1 102. The damaging effects of spray and vapor drift increase
2 dramatically during a temperature inversion, an extremely common
3 atmospheric condition in which cool air at the earth's surface is trapped by
4 warmer air above it. The trapped cool air accumulates a concentrated cloud of
5 dicamba spray droplets and vapor, which is then easily moved by light winds
6 to cause broad-scale injury to crops and plants near and far from areas of use.

7 103. Dicamba is also subject to atmospheric loading, where intensive
8 spraying by many farmers in a localized area results in substantial clouds of
9 airborne dicamba that can then, as with temperature inversions, move off-
10 field to cause widespread damage.

11 104. Dicamba can also damage off-field plants when rainfall washes it
12 out of the atmosphere and brings it down to earth.

13 105. Moreover, rainfall washes dicamba from the plant surfaces and
14 soil of a treated field into receiving streams and other water bodies, where it
15 can damage plants as a water contaminant.

16 106. The environmental risks from dicamba use are numerous.
17 Animals and plants, including threatened and endangered species, those in
18 danger of extinction, may be exposed to dicamba via atmospheric loading
19 (spray drift, volatilization), contamination of soils, and runoff from treated
20 fields.

21 107. Spray drift and volatilization of dicamba impacts vegetation near
22 crop fields, and also at a distance, impacting plants in many different
23 habitats as well as the animals that consume them and the larger ecosystem.

24 108. Mammals, birds, and insects are directly exposed to dicamba and
25 its far more toxic breakdown product, 3,6-dichlorosalicylic acid (DCSA),
26 through ingesting it in treated fields, through ingesting crop material that
27
28

1 leaves the field via wind or runoff, and through consuming insects that have
2 fed on crops contaminated with dicamba products.

3 109. Bees and other pollinators are at risk from direct exposure to
4 dicamba spray or vapor drift and by feeding on dicamba-sprayed crops and
5 other plants exposed to dicamba. Importantly, dicamba spray and vapor drift
6 can also impact pollinators indirectly, far beyond the treated field, by
7 suppressing the flowering plants they require for pollen and nectar.

8 110. Dicamba enters water bodies via runoff and drift, where it has
9 been frequently detected. Dicamba-laced runoff water can impact off-field
10 plants for weeks after application.

11 111. Dicamba also harms plants through its presence in rainwater.⁸ A
12 recent study of twelve sites in Missouri during the 2019 season revealed that,
13 at some sites, dicamba remained detectable throughout the season. The
14 detection of dicamba in rainwater directly correlated with adoption rates of
15 dicamba-resistant crops; areas with higher adoption had more dicamba in
16 rainwater. University of Missouri weed scientists determined that, in the
17 sites located in the southeastern corner of Missouri, the amounts in
18 rainwater were high enough to harm sensitive crops, especially with repeated
19 exposure.

24 ⁸ Emily Unglesbee, *New 2,4-D and Dicamba Data: Four Things*
25 *Missouri Scientists Learned About 2,4-D and Dicamba in 2020*, Progressive
26 Farmer (Dec. 7, 2020),
27 [https://www.dtnpf.com/agriculture/web/ag/crops/article/2020/12/07/four-](https://www.dtnpf.com/agriculture/web/ag/crops/article/2020/12/07/four-things-missouri-scientists-2-4)
28 [things-missouri-scientists-2-4](https://www.dtnpf.com/agriculture/web/ag/crops/article/2020/12/07/four-things-missouri-scientists-2-4).

Chronological History and Procedural Background

112. While dicamba has been sold in other forms since 1967, prior to the 2016 new use registration actions for dicamba, dicamba uses on soybeans and cotton were limited to pre-plant and pre-harvest applications in soybeans and pre-plant and post-harvest applications in cotton. Monsanto (now Bayer) first sought registrations for new uses of dicamba on genetically engineered soy and cotton in 2010 and 2012, originally seeking registration of a different dicamba pesticide, M1691.

113. Monsanto and BASF developed new dicamba products, while DuPont/Corteva obtained a license to market Monsanto's product under a different name.

Dramatic Dicamba Increases

114. As shown in the graph below, from 2012-2016, farmers applied, on average, 768,000 pounds of dicamba to soybeans and cotton, combined, each year. In just the first year of dicamba's registration for over-the-top spraying, dicamba usage on these crops rose to nearly 10 million pounds per year. 2018-2020 saw further substantial increases. The 13 million pounds applied to soybeans and nearly 5 million pounds sprayed on cotton represented a more than 23-fold increase in the amount of dicamba sprayed on these crops in just the second year over-the-top spraying was permitted. The large volume of dicamba sprayed, and the spraying later in the season when hot conditions exacerbated drift, had devastating consequences.

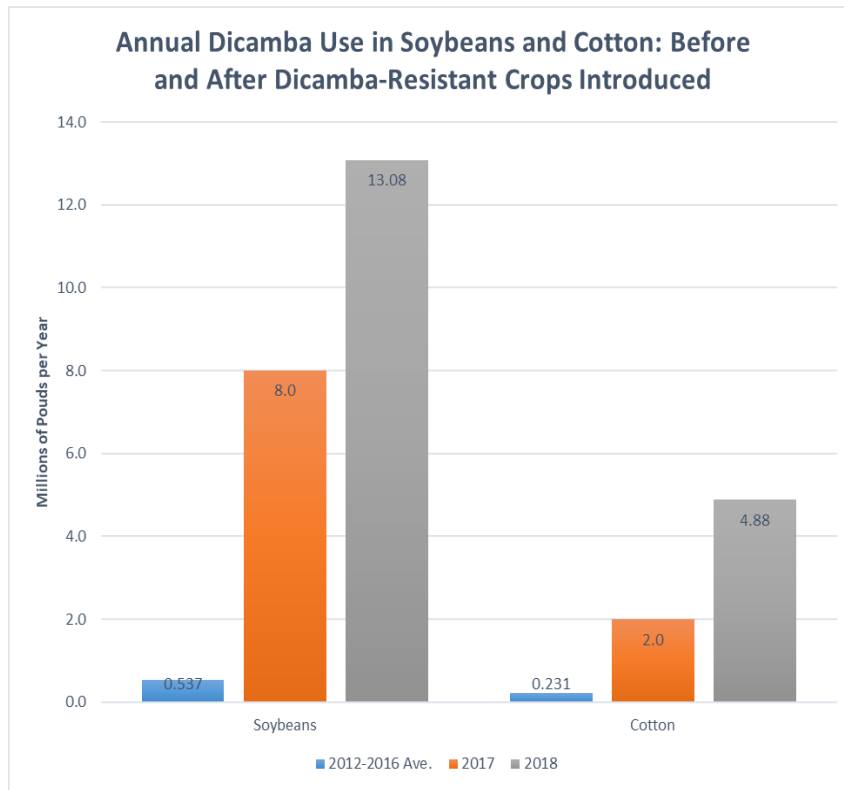


Figure 1: Annual dicamba use for soybeans and cotton before dicamba-resistant crops were introduced (average figure for 2012-2016) and the two years after broad introduction (2017, 2018). Based on EPA figures.

Dicamba Drift

115. Monsanto knew of the serious drift threat posed by its dicamba-resistant crop system for more than a decade, as it was extensively discussed in meetings of the company's Dicamba Advisory Council as long ago as 2009. Monsanto and its advisors not only foresaw drift damage, but anticipated lawsuits ("neighbors suing each other"), and discussed possible measures to address it, such as an "indemnity fund for crop loss." Rather than reconsider its dicamba project, however, Monsanto decided that the threat of dicamba drift damage could be exploited to market its seeds to soybean farmers "who

1 do not see value in [the dicamba-resistance] trait” for their own purposes.
2 These farmers would be “educated” into buying dicamba-resistant soybean
3 seeds to avoid drift damage arising from a neighbor’s use of dicamba (*i.e.*
4 “Protection from your neighbor.”)

5 116. In 2010, Monsanto officer John Soteres was developing
6 arguments to “defend[] dicamba relative to drift and volatilization to nearby
7 crops,” noting that Monsanto would need to address these issues not only
8 with regulators, “but also potentially in the courts.”

9 117. Agronomists studying dicamba drift informed EPA that
10 Monsanto’s system would likely harm off-field plants, affecting organisms
11 that rely on those plants, including pollinators, via habitat loss. EPA was also
12 aware that dicamba use would increase with resistant crops and that
13 neighbors of dicamba users would plant resistant crops for self-defense.

14 118. Monsanto received further warnings of the damaging effects its
15 dicamba crop system would have in 2011. One of its employees wrote in a
16 summary of academic surveys the company commissioned, “DON’T DO IT;
17 expect lawsuits,” while Del Monte Foods called the new system a “potential
18 disaster” in a 2011 letter.

19 119. Unsuprisingly Monsanto observed extensive dicamba drift
20 damage in its own field trials. From 2012-2014, the company reported to EPA
21 73 off-target incidents that occurred during its testing of M1691, the
22 precursor to XtendiMax that Monsanto first sought to register for over-the-
23 top use. Significant dicamba damage happened again in 2014 at a training
24 facility in Missouri. The Missouri Dept. of Agriculture informed EPA of two
25 incidents in 2013 and 2014, in which M1691 dicamba vapor caused drift
26 damage to non-resistant soybeans at 2,800 feet and 2.2 miles, respectively,
27 from treated fields of dicamba-resistant soy.

1 120. Instead of studying the issue further, Monsanto responded to
2 EPA's growing concern by halting its own field-testing of XtendiMax with
3 VaporGrip Technology in 2015. Monsanto also prohibited trials by
4 independent academics and expressed concerns to BASF about "how tightly
5 BASF controls the release of data by third parties." EPA proposed a small
6 omnidirectional vapor drift buffer zone far smaller in width than the
7 distances it knew dicamba vapor could travel, but subsequently dropped even
8 this proposal.

9 121. In 2016, Monsanto elaborated upon its 2009 scheme of using
10 protection from drift damage as a marketing strategy. The company
11 conducted a careful analysis to project the number of dicamba damage
12 episodes—from 1,300 to over 3,200—that would occur in each of the first five
13 years of its system's use and calculated the staff budget that would be
14 required for investigation of these complaints.

15 122. Similarly, in a September 2016 meeting, BASF also identified
16 "defensive planting" as a marketing strategy. That following January, BASF
17 had a market research document that confirmed the role of defensive
18 planting in contributing to sales.

19 *Harm to Endangered Species*

20 123. Dicamba's volatile nature and propensity to drift poses a serious
21 risk of harm to endangered and threatened species and the habitats they
22 depend upon. Harmful direct, indirect, and cumulative effects on many
23 ESA-listed species, including, but not limited to, mammals, birds, reptiles,
24 terrestrial-phase amphibians, terrestrial invertebrates, and terrestrial
25 plants, are also foreseeable due to the known effects of dicamba. Listed
26 species may be affected through multiple routes of exposure at once, for
27 instance through runoff and spray drift at the same time, as well as through
28

1 food chain and ecosystem collapses associated with the vast mortality caused
2 by these pesticides to insects and terrestrial invertebrates.

3 124. Prior to the 2016 registration, EPA knew that protected animals
4 such as the whooping crane, feed in sprayed crop fields and that hundreds of
5 other endangered plants and animals are threatened by volatility and drift
6 either because they are found near those fields or are dependent upon plants
7 near those fields, whether those plants are protected or not by the ESA.

8 125. In 2011, EPA's initial risk assessment found the proposed
9 dicamba new use would potentially harm all ESA-listed species that might
10 come in contact with the pesticide. EPA, *Ecological Risk Assessment for*
11 *Dicamba* (March 8, 2011) ("no species currently listed as federally threatened
12 or endangered can be excluded from the potential for adverse effects from the
13 proposed new use of dicamba.").

14 126. On March 24, 2016 EPA's risk assessment again admitted that
15 dicamba, applied at the allowed rate, may harm many protected plant and
16 animal species; it expressly found that "potential direct risk concerns could
17 not be excluded for" any birds, mammals, or terrestrial plants.⁹ This list
18 included 322 ESA-protected species within 11 states, 183 ESA-protected
19 species within 16 additional states, and 307 ESA-protected species in 7 more
20 states, for a total of 812 species in 34 states. *Id.* at 4.

23 ⁹ EPA, *Addendum to Dicamba Diglycolamine Salt(DGA) and its*
24 *Degradate, 3,6-dichlorosalicylic acid (DCSA) Section 3 Risk Assessment:*
25 *Refined Endangered Species Assessment for Proposed New Uses on*
26 *Herbicide-Tolerant Soybean and Cotton in 16 states(Arkansas, Illinois, Iowa,*
27 *Indiana, Kansas, Louisiana, Minnesota, Mississippi, Missouri, Nebraska,*
28 *North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Wisconsin) 2-*
3 (Mar. 24, 2016) [hereinafter *Risk Assessment in 16 states*].

1 127. Instead of consulting with FWS as required for the 2016
2 registration, EPA instead concluded that the registration would have “no
3 effect” on any of the hundreds of species it had already identified as at-risk.

4 128. EPA made this finding through first constricting the
5 registration’s “action area” to just the sprayed crop fields themselves,
6 eliminating nearly all species from the action area.¹⁰

7
8 ¹⁰ EPA, *Addendum to Dicamba Diglycolamine (DGA) Salt and its*
9 *Degradate, 3,6-dichlorosalicylic acid (DCSA) Section 3 Risk Assessment: Refined*
10 *Endangered Species Assessment for Proposed New Uses on*
11 *Herbicide-Tolerant Cotton and Soybean in 7 U.S. States (Alabama, Georgia,*
12 *Kentucky, Michigan, North Carolina, South Carolina, and Texas)* 6 (Mar. 24,
13 2016) (eliminating all but 10 of 183 listed species) [hereinafter *Risk*
14 *Assessment in 7 states*]; *id.* at 7-8 (eliminating all but 8 of 307 listed species);
15 EPA, *Addendum to Dicamba Diglycolamine Salt (DOA) and its Degradate,*
16 *3,6-dichlorosalicylic acid (DCSA) Section 3 Risk Assessment: Refined*
17 *Endangered Species Assessment for Proposed New Uses on Herbicide-*
18 *Tolerant Soybean and Cotton in 11 U.S. States: (Arizona, Colorado,*
19 *Delaware, Florida, Maryland, New Mexico, New Jersey, New York,*
20 *Pennsylvania, Virginia and West Virginia)* 7-8 (Mar. 24, 2016) (eliminating
21 all but 6 of 322 listed species) [hereinafter *Risk Assessment in 11 states*];
22 EPA, *Addendum to Dicamba Diglycolamine (DGA) Salt and its Degradate,*
23 *3,6-dichlorosalicylic acid (DCSA) Refined Endangered Species Risk*
24 *Assessments for New Uses on Herbicide-Tolerant Cotton and Soybean in 34*
25 *U.S. States (Alabama, Arizona, Arkansas, Colorado, Delaware, Florida,*
26 *Georgia, Illinois, Iowa, Indiana, Kansas, Kentucky, Louisiana, Maryland,*
27 *Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Mexico, New*
28 *Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma,*
Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia,
West Virginia and Wisconsin) to Account for Listed Species not included in
the Original Refined Endangered Species Risk Assessments 5-7 (Nov. 8,
2016); (overall only 27 species within the action area) [hereinafter *Risk*
Assessment in 34 states]; EPA, *Summary of New Information and Analysis of*
Dicamba Use on Dicamba-Tolerant (DT) Cotton and Soybean Including
Updated Effects Determinations for Federally Listed Threatened and
Endangered Species 10 (Oct. 31, 2016) (unknown number of newly listed
terrestrial species not found to overlap treated field).

1 129. For the remaining species on the treated field, EPA made a “no
2 effect” determination using a risk assessment methodology that does not
3 evaluate whether its registration actions meet the low ESA “may affect”
4 threshold, but, rather, whether exposing species or habitat to a pesticide
5 exceeds EPA’s self-determined “level of concern” (LOC) and other
6 “thresholds.” An LOC is a term EPA created for the FIFRA context because
7 LOC measures “adverse effects” not whether the actions “may affect” species
8 or critical habitat.

9 130. Using this flawed methodology, EPA knew before it registered
10 dicamba that its list of restrictions would not completely eliminate the effects
11 of off-site drift on species. *See, e.g., EPA, Final Registration of Dicamba on*
12 *Dicamba-Tolerant Cotton and Soybean* 28 (Nov. 9, 2016) (measures “reduce
13 the likelihood of spray drift and volatilization” beyond fields); *id.* (“if further
14 refinements that included more realistic exposure scenarios were conducted,
15 these risks would likely fall below the agency’s levels of concern”); EPA,
16 *Review of Benefits as Described by the Registrant of Dicamba Herbicide for*
17 *Postemergence Applications to Soybean and Cotton and Addendum Review of*
18 *the Resistance Management Plan as Described by the Registrant of Dicamba*
19 *Herbicide for Use on Genetically Modified Soybean and Cotton* 5 (March 30,
20 2016) (label instruction “may reduce the potential for drift to off-target
21 sites”).

22 131. EPA also knew that no drift mitigation could prevent some of
23 America’s most iconic and critically endangered animals—such as the
24 California condor, Florida panther, and whooping crane—from ingesting
25 dicamba, because they are “reasonably expected to occur on soybean and
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1 cotton fields.”¹¹ Accordingly, EPA admitted its label restrictions would not
 2 eliminate any adverse effects, but only reduce drift beyond the fields’ borders
 3 “to where the [No Observed Adverse Effect Concentration (NOAEC)] is not
 4 expected to be exceeded.” EPA, *Final Registration of Dicamba on Dicamba-*
 5 *Tolerant Cotton and Soybean* 18 (Nov. 9, 2016). Still, EPA declared that the
 6 registration would have “no effect” even on the species it admitted are in
 7 those fields and dismissed its duty to consult with FWS.

8 132. EPA proceeded to also use this methodology to dismiss its duty to
 9 consult with FWS to insure spraying millions of acres does not affect any of
 10 the 499 critical habitats designated by FWS in and around fields in the 34
 11 states where EPA authorized XtendiMax spraying.

12 133. To support this conclusion, EPA invented a rule to determine
 13 when its action would trigger consultation with respect to critical habitat,
 14 and substituted them for the ESA’s “may affect” standard: modification
 15 occurs when 1) “cotton or soybean fields are habitat for the species and there
 16 is a ‘may affect’ determination for the species associated with exposure to
 17 dicamba”; and/or 2) “the species uses cotton or soybean fields and one or more
 18 effects on taxonomic groups predicted for dicamba . . . on cotton and soybean
 19 fields would modify one or more of the designated [primary constituent
 20 elements]. If neither of the above conditions are met, EPA concludes ‘no
 21 modification.’”¹²

22 134. EPA used this new rule to predicate its critical habitat “no effect”
 23 determinations on its earlier flawed determinations that dicamba would have
 24

25 ¹¹ EPA, *Risk Assessment in 16 states, supra* n. 9 at 7-8.

26 ¹² EPA, *Risk Assessment in 7 states, supra* n. 10, at 29-30; EPA, *Risk*
 27 *Assessment in 11 states, supra* n. 10, at 25.

1 “no effect” on any of the 812 species. EPA also based these conclusions on its
 2 unsupported assumption that if any listed species does not use cotton or
 3 soybean fields, the critical habitat “assessment” for such species is
 4 automatically “no modification.”

5 135. EPA also reversed on its position regarding an omnidirectional
 6 buffer to protect species. In 2016, EPA initially proposed to limit the action
 7 area to treated fields by relying on mitigation that included an in-field,
 8 downwind buffer for spray drift, plus an omnidirectional buffer for volatility,
 9 both 110 feet.¹³ Monsanto then submitted volatility studies that convinced
 10 EPA to eliminate the volatilization buffer, which had been based on
 11 university research,¹⁴ and instead rely entirely on the downwind-only buffer,
 12 further reducing protections for species.¹⁵

13 *2016 Registration*

14 136. In November 2016, EPA conditionally registered three dicamba
 15 products for new use under FIFRA section 3(c)(7)(B). The 2016 registration
 16 greatly extended permissible times to spray dicamba deep into the hot
 17 summer months, for the first time allowing a new use for post-emergent,
 18 over-the-top applications to cotton and soybean crops genetically engineered
 19 with resistance to the pesticide. *Id.* The registration covered millions of acres
 20 in 34 states.

21 _____
 22 ¹³ EPA, *Risk Assessment in 34 states*, *supra* n. 10, at 3.

23 ¹⁴ EPA, *M-1691 Herbicide, EPA Reg. No. 524-582 (Active Ingredient:*
 24 *Dicamba Diglycolamine Salt) and M-1768 herbicide, EPA Reg. No. 524-617*
 25 *(AI: Diglycolamine Salt with VaporGrip™) – Review of EFED Actions and*
 26 *Recent Data Submissions Associated with Spray and Vapor Drift of the*
Proposed Section 3 New Uses on Dicamba-Tolerant Soybean and Cotton 2-3
 (Nov. 3, 2016).

27 ¹⁵ EPA, *Risk Assessment in 11 states*, *supra* n. 10, at 6.

1 137. EPA based its 2016 registration on the supposition that the three
2 dicamba products were less volatile than prior dicamba formulations. Even
3 so, EPA found it necessary to impose a host of use instructions, a form of
4 mitigation, contained on a lengthy label. These instructions restricted
5 applications to a narrow range of wind speeds, required a downwind buffer,
6 stipulated a maximum spray boom height, and specified temperature and
7 humidity adjustments, among other instructions. EPA claimed these
8 instructions would “effectively limit” any impacts if followed.

9 138. These registrations were time-limited with two-year automatic
10 expiration dates “because of the concerns about resistance and off-target
11 movement,” unless EPA determined before that date that off-site incidents
12 were not occurring at “unacceptable frequencies or levels.”

13 139. At this time, Monsanto recognized its research left many
14 unanswered questions about the real-world risks posed by dicamba’s
15 volatility. In a February 2016 email to coworkers, a Monsanto researcher
16 wrote: “We don’t know how long a sensitive plant needs in a natural setting
17 to show volatility damage. We don’t know what concentration in the air
18 causes a response, either . . . There is a big difference for plants exposed to
19 dicamba vapor for 24 vs. 48 hours. Be careful using this externally.”¹⁶

20 140. BASF also knew dicamba still posed risks. A BASF executive
21 admitted that “from a practical standpoint” Engenia was not different from
22 older dicamba versions, and the company privately told applicators that drift
23

24
25 ¹⁶ Johnathan Hettinger, *‘Buy it or else’: Inside Monsanto and BASF’s*
26 *moves to force dicamba on farmers*, Midwest Center for Investigative
27 Reporting (Dec. 4, 2020), <https://investigatemitdwest.org/2020/12/04/buy-it-or-else-inside-monsanto-and-basfs-moves-to-force-dicamba-on-farmers/>.

1 could harm farmers' harvests.¹⁷ Monsanto responded to BASF's admission
2 that volatility was an issue with an email from a Monsanto salesmen to
3 coworkers stating: "We need to get on this right now . . . Deny! Deny!
4 DENY!"¹⁸

5 141. In response to the registrations, Plaintiffs (then petitioners) filed
6 a petition for review to the Ninth Circuit in January 2017. That petition for
7 review, along with subsequent filings, argued that Defendants disregarded
8 environmental and crop harms from foreseeable off-field drift, failed to
9 consider socioeconomic impacts, and lacked substantial evidence to support
10 the registrations. Plaintiffs also argued that EPA violated its duties under
11 the ESA, by failing to consult with the United States Fish and Wildlife
12 Service or the National Marine Fisheries Service to insure that conditionally
13 registering dicamba for uses on genetically engineered cotton and soybean in
14 the thirty-four states will not jeopardize any listed species or destroy or
15 adversely modify any of their critical habitats, *see* 16 U.S.C. § 1536 (a)(2).

16 *The 2017 Growing Season*

17 142. Farmers began using the dicamba products for the first time
18 during the 2017 planting season under the new use registration. The events
19 that transpired were unprecedented in the history of U.S. agriculture.

20 143. In the registration decision, EPA had concluded that its label
21 mitigation was "expected to eliminate any offsite exposures." But complaints
22 skyrocketed. By the end of the season Professor Kevin Bradley of the
23 University of Missouri issued a report finding 2,708 formal complaints
24 nationwide.

25
26 ¹⁷ *Id.*

27 ¹⁸ *Id.*

1 144. Based on estimates by university weed scientists, 2.5 million
2 acres of soybean were damaged by dicamba drift by mid-July, a figure rising
3 to 3.6 million acres by the end of the summer. This was about 4% of all
4 soybean acreage nationwide. And these numbers substantially under-
5 reported the total damage, since the majority of injured farmers do not report
6 drift incidents. In addition, a still higher percentage of susceptible soybeans
7 were injured: an astounding fifty percent of non-dicamba-resistant soybeans
8 in Illinois.

9 145. And this was just the soybean damage; many other crops were
10 also damaged, including tomatoes, melons, fruit and nut trees, and
11 vegetables, as well as residential gardens, shrubs, and trees. According to
12 Missouri weed science expert, Dr. Kevin Bradley, “[*w*]e have never seen
13 anything like this before . . . in our agricultural history.”

14 146. Numerous state agricultural departments also reported to EPA
15 extensive damage. University scientists expressed unanimous concern that
16 the dicamba products were more volatile than manufacturers admitted. One
17 of the key messages from state and academic experts was that the EPA label
18 restrictions were not working because they did not address volatility.

19 147. During this time, university scientists affirmed volatility, or
20 vapor drift, as one of the major routes of dicamba drift injury, based on air
21 sampling data, field volatility studies, and field visits. EPA received
22 extensive test results showing that, contrary to Monsanto’s claims, the
23 products volatilized for as many as 3 or 4 days following the application.

24 148. By late summer 2017, Monsanto and BASF began responding to
25 these damage reports by taking measures to shield themselves from
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1 lawsuits.¹⁹ Among other pretexts, Monsanto began to blame the damage on a
 2 different BASF weed killer, glufosinate.²⁰

3 149. Monsanto designed a form for investigators to use in looking into
 4 farmer complaints, which would “gather data that could defend Monsanto.”²¹
 5 BASF drafted a script for its investigators that directed them to deny liability
 6 for drift damage and to assure the complainant that even severe damage
 7 would not result in yield loss.

8 150. In internal communications in summer 2017, Monsanto made
 9 clear it would only investigate a dicamba drift complaint if it came from a
 10 Monsanto customer. It treated its employees’ investigative visits to such
 11 “driftees” as an opportunity to sell them dicamba-resistant seeds to avoid
 12 crop injury from future drift.²² A Monsanto sales employee emailed: “I think
 13 we can significantly grow business and have a positive effect on the outcome
 14 of 2017 if we reach out to all the driftee people.”²³

15 *Minor Federal Label Adjustments for the 2018 Season*

16 151. Faced with the unprecedented 2017 summer of drift, and
 17 pressured to take some action to stop it, in October 2017, EPA and Monsanto
 18 amended the 2016 registration and added further new mitigation, use
 19 instructions, and requirements. These label amendments included a
 20 restricted use pesticide designation for the dicamba products, a lower
 21
 22

23 ¹⁹ *Id.*

24 ²⁰ *Id.*

25 ²¹ *Id.*

26 ²² *Id.*

27 ²³ *Id.*

1 application wind speed limit, applicator training, greater record-keeping
2 burdens, and a ban on spraying from dusk to dawn.

3 152. However, EPA declared that the revised document “did not affect
4 the conclusions in the supporting assessment of risk,” and that, rather than
5 provide any new data or analysis supporting the new measures’ efficacy, EPA
6 “continue[d] to rely on all the assessments” supporting the original
7 registration.” *NFFC II*, 960 F.3d at 1128. In other words, EPA continued to
8 rely on its 2016 conclusions and risk assessments.

9 153. Plaintiffs amended their petition for review to encompass these
10 new revisions to the registration.

11 154. In an October 19, 2017 email to officers of Monsanto, BASF, and
12 DuPont, Iowa State University weed scientist Micheal Owen explained that
13 the label amendments did not address volatility, which remained a
14 “significant risk.” He recommended only pre-emergence use of dicamba
15 products and concluded that “the risks attributable to the off-target
16 movement of dicamba applied postemergence are greater than the benefits,”
17 a viewpoint he said was shared by most academics and state regulatory
18 agencies.

19 *The 2018 Growing Season*

20 155. The 2017 label amendments failed to prevent continuing massive
21 dicamba drift damage in 2018. By July, Dr. Bradley reported an estimated
22 1.1 million acres of soybean damage in 18 states. The number of official
23 dicamba damage reports rose even higher than 2017 in the leading soybean-
24 production states of Iowa, Illinois, Indiana, Ohio, Nebraska, and North
25 Dakota. *NFFC II*, 960 F.3d at 1127-28.

26 156. Dicamba drift slowed the growth of affected soybeans and often
27 slashed yields, costing farmers many millions of dollars in lost revenue. The
28

1 damage was so severe that by late July 2018, the U.S.'s fourth largest
2 soybean seed seller wrote to EPA urging prohibition of over-the-top
3 applications of dicamba. Another university expert told EPA that the 2018
4 season demonstrated "*that minimizing the off target movement of dicamba to*
5 *a reasonable level is NOT possible.*" *NFFC II*, 960 F.3d at 1139 (emphasis
6 added).

7 157. Just as Monsanto and BASF had anticipated years before, the
8 widespread damage placed pressure on farmers to purchase dicamba-
9 resistant soybean seeds, not out of choice, but defensively, to protect
10 themselves from rampant dicamba drift damage. *NFFC II*, 960 F.3d at 1142.

11 158. However, growers of other crops, who lacked a dicamba-resistant
12 alternative, were left defenseless. As in 2017, dicamba caused extensive
13 damage to specialty crops, vegetables, tobacco, and fruit trees. For example, a
14 North Dakota vegetable farmer had his crops destroyed by successive waves
15 of dicamba drift. An Arkansas beekeeping operation experienced sharp
16 declines in honey production in areas hard-hit by dicamba drift, which
17 deprived his bees of sufficient flowering plants for their nectar needs, causing
18 him to move his operation out of state.

19 159. A second year of massive atmospheric loading of dicamba also
20 took a toll on residential and shade trees as well as other ornamental plants
21 throughout rural America.

22 160. Dicamba drift damage also provoked disputes between dicamba
23 users and those affected by drift, turning farmer against farmer, family
24 against family, tearing apart the fabric of rural communities. In at least one
25 case, a dicamba drift dispute resulted in a gunshot death.

161. Overall, two years of dicamba use in 2017 and 2018 resulted in 4,200 official complaints and more than 4.7 million acres of soybeans injured, as well as scores of other plants and crops, including valuable specialty crops.

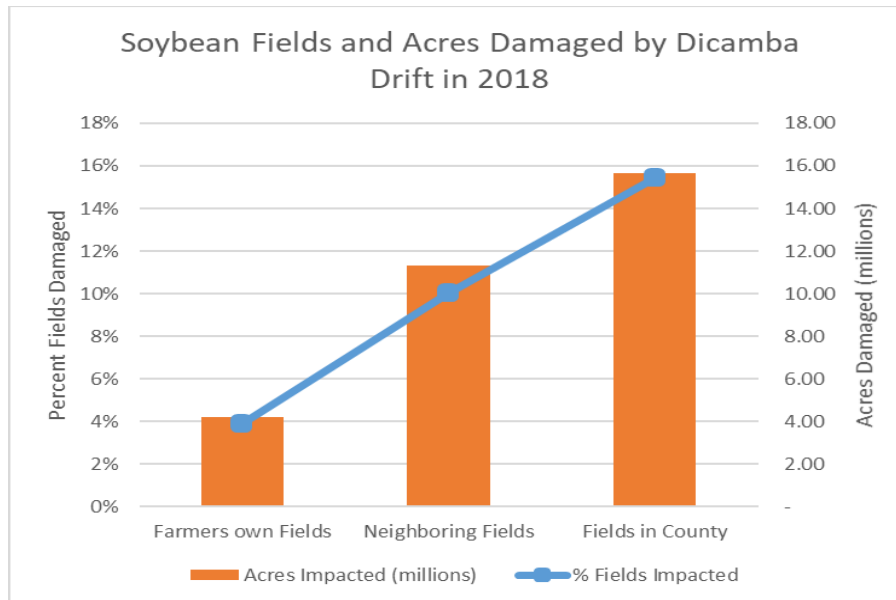


Figure 2: Farmers in 19 major soybean states were surveyed by USDA and reported dicamba damaged fields of their own, their neighbors', and in their counties. Source: USDA Agricultural Resource Management Survey (2018), as reported in EPA, *Dicamba Use on Genetically Modified Dicamba-Tolerant (DT) Cotton and Soybean: Incidents and Impacts to Users and Non-Users from Proposed Registrations* 31, tbl. 8 (Oct. 26, 2020).

162. These figures are substantial underestimates, however, since only a small fraction of injured farmers report drift damage episodes. *NFFC II*, 960 F.3d at 1138. Indeed, as shown in Figure 2, a USDA survey in 2018 found that soybean growers alone suffered at least 65,000 adverse effect incidents to their own fields from dicamba drift, “25 times the number of dicamba incidents reported to EPA for all crops.” Farmers reported still more injury when queried about dicamba damage to their neighbors’ fields and in their county, with damage rising to an astounding 10% and nearly 16% of

1 soybean fields, representing over 11 million and *nearly 16 million damaged*
2 *acres*, respectively. *See supra* fig. 2.

3 163. Some of the states that imposed restrictions over and above the
4 EPA label experienced substantial decreases in the number of complaints.
5 For example, in Minnesota in 2017, there were 250 complaints of dicamba
6 crop damage but in 2018 only 29. By contrast, other states that did not so
7 impose additional requirements had their complaints of dicamba injury rise.
8 Illinois, which did not impose any conditions, had 245 complaints in 2017, but
9 that number increased to 330 in 2018.

10 164. Despite these two years of unprecedented widespread drift
11 damage, in late October 2018, EPA continued the 2016 new use registration
12 for another 2 years. EPA continued the registration even though it did not
13 make a finding that drift damage episodes were not occurring at
14 “unacceptable frequencies or levels” – the condition that EPA had stipulated
15 for continuing the registration.

16 165. In continuing the registration, EPA now admits it allowed
17 “political interference” to “compromise[] the integrity of [its] science.” Senior
18 leadership directed staff to “(1) rely on a limited data set of plant effects
19 endpoints; (2) discount specific studies (some with more robust data) used in
20 assessing potential risks and benefits; and (3) discount scientific information
21 on negative impacts.” Memorandum from Michal Freedhoff to the Office of
22 Chemical Safety and Pollution Prevention (Mar. 10, 2021).

23 166. EPA for the first time assessed field studies of dicamba spray and
24 vapor drift conducted by university scientists from 2016 to 2018. These
25 twelve studies collectively revealed dicamba drift damage to susceptible off-
26 field plants at far greater distances than the registrant studies and modeling
27
28

1 EPA had relied upon for prior registrations. More than half of the studies
2 identified injury to plants at distances greater than 130 feet (39.6 m).

3 167. Based on these studies, EPA scientists provisionally
4 recommended expansion of the action area to 196 feet (60 meters) on all sides
5 of fields where overlap would be possible with endangered species' range.
6 Once EPA scientists had confirmed the validity of an additional 2018 study,
7 which revealed injury to dicamba-sensitive soybeans 136 meters from the
8 edge of a treated field, they then recommended expansion of the action area
9 to 443 feet (135 meters) beyond the fields.

10 168. On October 11, 2018, EPA conveyed to Monsanto that "with all of
11 the uncertainty on the Endangered Species side, there is still a lot of work
12 left." However, less than two weeks later, on October 31, 2019, EPA acted in
13 accordance with the directive to "discount scientific information negative
14 impacts" and added only a 57-foot buffer, a buffer eight times smaller than
15 recommended by the EPA's scientists, which is only required in the minority
16 of counties with listed species (8% of counties). *See* Memorandum from
17 Michal Freedhoff to the Office of Chemical Safety and Pollution Prevention
18 (Mar. 10, 2021).

19 169. EPA concluded that the 57-foot buffer mitigation provided
20 "reasonable" protection to species under a FIFRA standard.²⁴

21 170. However, EPA admitted that, but for the inadequate 57-foot
22 buffer, its conclusion for all of the new species it analyzed in the 2018
23 addendum and new action area would have been "may affect." EPA,
24 *Summary of New Information*, *supra* n. 10 at 111-19 (listing all species as
25 "May Affect" absent the new 57-foot buffer); EPA, *Registration Decision for*

26
27 ²⁴ EPA, *Summary of New Information*, *supra* n. 10, at 49-50.

1 *the Continuation of Uses of Dicamba on Dicamba Tolerant Cotton and*
 2 *Soybean* 13 (Oct. 31, 2018) (“69 species would be may-affect with no
 3 additional mitigation.”); *Id.* (“12 critical habitats would be “modification” with
 4 no additional mitigation”).

5 171. Instead of consulting, EPA chose to rely on the unsupported
 6 buffer and “maintained” its previous “no effect” determinations “for all taxa
 7 except listed non-monocot plants that may exist near the treated field.” *Id.* at
 8 12-13. Even for those species, EPA again unilaterally determined “no effect.”

9 172. Because drift “may have resulted in effects” to species off-field,
 10 EPA revised its action area to the field to the treated field plus 30 meters.
 11 EPA, *Summary of New Information*, *supra* n. 10, at 57. However, despite this
 12 expansion, EPA only revisited 14 critical habitats located within the
 13 expanded action area and concluded that 12 would have “modification,” but
 14 that the 57-foot buffer excluded these from the action area, resulting in “no
 15 modification” for all. *Id.*

16 *The 2019 and 2020 Growing Seasons*

17 173. The 2019 and 2020 summer growing seasons followed the same
 18 damaging drift patterns as those prior: drift damage to crops, trees, gardens,
 19 and the environment generally; real world farming conditions making it
 20 impossible to effectively and lawfully spray; state regulators overwhelmed
 21 with injury complaints even as farmers stopped filing them feeling them
 22 futile; and more farmers forced to defensively adopt dicamba-resistant
 23 soybeans.

24 174. Across the U.S., these widespread incidences of dicamba drift
 25 damage to plants and trees on both public and private lands continued to
 26 expose endangered species. Plants and trees are critical to environmental
 27 health and have complex relationships with pollinators such as lepidopterans
 28

(moths and butterflies) and coleopterans (beetles), which serve as food for protected birds and many fish. Flowering plants exposed to dicamba showed a reduction in flower expression and delayed onset of flowering. They were also less likely to be visited by pollinators.

2019 Reported Injuries

175. Nearly 5,600 farmers reported dicamba damage to Bayer and BASF, makers of dicamba, from 2017-2019.²⁵ EPA estimates this could be as much as a 25-fold underreporting of incidents. In 2019, nearly 3,000 drift incidents were reported to EPA. Ex. A, at 9.

176. According to AAPCO, there was approximately a *10% increase* in reported incidents as compared to 2018. *Id.*

177. Compared to prior years, 2019 was “*as bad, if not worse, than last year*,” according to Leo Reed, president-elect of the Association of American Pesticide Control Officials (AAPCO) and pesticide licensing manager for the Office of Indiana State Chemist.²⁶

178. In Illinois, the number of complaints soared from about 120 in the pre-dicamba era to more than 700. In Indiana, it went from 60 to 200.²⁷

²⁵ Johnathan Hettinger, *EPA documents show dicamba damage worse than previously thought*, Midwest Center for Investigative Reporting (Oct. 30, 2020), https://www.stltoday.com/news/local/state-and-regional/epa-documents-show-dicamba-damage-worse-than-previously-thought/article_36f21c52-7459-5ee0-8bae-21bf5e9f89d2.html.

²⁶ Emily Unglesbee, *EPA Gets Limited Dicamba Data*, Progressive Farmer (Aug. 20, 2019), <https://www.dtnpf.com/agriculture/web/ag/crops/article/2019/08/20/dicamba-injury-complaints-rise-epa>.

²⁷ Dan Charles, *Pesticide Police, Overwhelmed By Dicamba Complaints, Ask EPA For Help*, NPR (Feb. 6, 2020),

1 179. Illinois led the country in dicamba injury, with regulators
2 actively investigating 724 cases of alleged dicamba injury, a record for the
3 state.²⁸ Illinois regulators mentioned that you would be hard-pressed to find a
4 non-dicamba-resistant soybean field in some counties that was not damaged
5 because there were whole counties that appeared to be damaged.

6 180. With the exception of Missouri, most of the states in EPA Region
7 7 (Iowa, Kansas, Missouri, and Nebraska) investigated as many or more
8 injury cases in 2019 than 2018.²⁹ In Indiana, dicamba drift complaints rose
9 from 135 in 2018 to 178 in 2019.³⁰

10 181. Despite the exponential numbers of reported injuries, these
11 numbers nonetheless discount the actual drift incidents dramatically.³¹ In
12 states like Missouri, complaint numbers went down, but almost certainly not
13 because drift stopped. Rather, according to a 2019 survey of farmers in
14 Missouri, 80% of them are not bothering to file formal complaints anymore, in
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16

17 [https://www.npr.org/sections/thesalt/2020/02/06/800397488/pesticide-police-](https://www.npr.org/sections/thesalt/2020/02/06/800397488/pesticide-police-overwhelmed-by-dicamba-complaints-ask-epa-for-help)
18 [overwhelmed-by-dicamba-complaints-ask-epa-for-help.](https://www.npr.org/sections/thesalt/2020/02/06/800397488/pesticide-police-overwhelmed-by-dicamba-complaints-ask-epa-for-help)

19 ²⁸ Emily Unglesbee, *Dicamba Fatigue*, Progressive Farmer (Dec. 9,
20 2019),
21 [https://www.dtnpf.com/agriculture/web/ag/crops/article/2019/12/10/states-](https://www.dtnpf.com/agriculture/web/ag/crops/article/2019/12/10/states-report-another-year-dicamba)
[report-another-year-dicamba.](https://www.dtnpf.com/agriculture/web/ag/crops/article/2019/12/10/states-report-another-year-dicamba)

22 ²⁹ *Id.*

23 ³⁰ Robert D. Waltz, *Analysis of Off-Target Movement of Dicamba*
24 *Herbicides in Indiana*, The Office of Indiana State Chemist (Oct. 30, 2019),
[https://www.oisc.purdue.edu/pesticide/iprb/iprb_159_dicamba_24c_analysis.p](https://www.oisc.purdue.edu/pesticide/iprb/iprb_159_dicamba_24c_analysis.pdf)
25 [df.](https://www.oisc.purdue.edu/pesticide/iprb/iprb_159_dicamba_24c_analysis.pdf)

26 ³¹ Kevin Bradley, *Your Dicamba Report Card*, University of Missouri
27 (2019), [https://plantsciencesweb.missouri.edu/cmc/pdf/2019/bradley-](https://plantsciencesweb.missouri.edu/cmc/pdf/2019/bradley-dicamba.pdf)
[dicamba.pdf.](https://plantsciencesweb.missouri.edu/cmc/pdf/2019/bradley-dicamba.pdf)

1 large part because they do not think it does any good.³² All but one of
 2 Missouri's eight pesticide inspectors left their jobs in 2018-2019, with heavy
 3 workload and burnout as contributing factors.

4 182. A survey of farmers across 60 counties in Nebraska found that
 5 only 7% of farmers who saw dicamba injury filed an official complaint with
 6 the Nebraska Department of Agriculture.³³

7 183. Similarly, in a survey conducted by AAPCO, 19 states reported
 8 nearly 1,400 cases of alleged dicamba injury in 2019.³⁴ The regulators from
 9 these states acknowledged that these numbers are likely far lower than the
 10 actual cases of injury. "We're hearing the same thing as other regulators—
 11 people are just not reporting," said Ryan Williams, an Oklahoma pesticide
 12 regulator who represented the EPA Region 6 states of Arkansas, Louisiana,
 13 New Mexico, Oklahoma, and Texas at the meeting. "*They're tired of reporting*
 14 *and not getting any results.*"

15 184. The extraordinary costs from dicamba injury was felt upon state
 16 agencies as well. Indiana regulators investigated 178 injury cases in 2019,
 17 another state record.³⁵ Investigations of dicamba injury in the past few years
 18 have caused a ballooning budget for the Office of the Indiana State Chemist,
 19
 20

21 ³² Charles, *supra* n. 27.

22 ³³ Rodrigo Werle et al., *Survey of Nebraska Farmers' Adoption of*
 23 *Dicamba-Resistant Soybean Technology and Dicamba Off-Target Movement*,
 32 Weed Technology 754 (Dec. 2018),
 24 [https://www.cambridge.org/core/journals/weed-technology/article/abs/survey-](https://www.cambridge.org/core/journals/weed-technology/article/abs/survey-of-nebraska-farmers-adoption-of-dicambaresistant-soybean-technology-and-dicamba-offtarget-movement/7BBA31C5FB37C66E6E413EA025098812)
 25 [of-nebraska-farmers-adoption-of-dicambaresistant-soybean-technology-and-](https://www.cambridge.org/core/journals/weed-technology/article/abs/survey-of-nebraska-farmers-adoption-of-dicambaresistant-soybean-technology-and-dicamba-offtarget-movement/7BBA31C5FB37C66E6E413EA025098812)
[dicamba-offtarget-movement/7BBA31C5FB37C66E6E413EA025098812](https://www.cambridge.org/core/journals/weed-technology/article/abs/survey-of-nebraska-farmers-adoption-of-dicambaresistant-soybean-technology-and-dicamba-offtarget-movement/7BBA31C5FB37C66E6E413EA025098812).

26 ³⁴ Unglesbee, *supra* n. 28.

27 ³⁵ *Id.*

1 but have produced few clear-cut answers for the state's farmers. The EPA
2 spent \$2.2 million investigating dicamba injury.

3 185. The Missouri Department of Agriculture has indicated it will add
4 six new positions to get a handle on its dicamba backlog, expected to cost over
5 \$600,000 a year.³⁶

6 186. Communication with EPA over dicamba problems hit an all-time
7 low in 2019.³⁷ Unlike the weekly conference calls and data reporting of 2018,
8 very little regular communication between state regulators and EPA occurred
9 in 2019.

10 187. States have also reported environmental harm beyond crop fields
11 from 2018-2020.³⁸ Illinois reported that their Department of Natural
12 Resources noticed a decline in tree health and was investigating. Nebraska
13 state foresters saw an increase in damage to the state's trees. South Dakota
14 State University Extension scientists analyzed samples from injured trees as
15 part of a multi-state study on the long-term effects of herbicide injury on
16 trees.

17 188. In some areas, the damage is so severe that tree mortality is
18 higher than from the Emerald Ash Borer, an insect that has killed tens of
19
20
21

22 ³⁶ Brendan Crowley, *Hundreds seeking dicamba complaint resolutions;*
23 *regulators say they need help* (Mar. 3, 2020),
24 [https://www.joplinglobe.com/news/local_news/hundreds-seeking-dicamba-](https://www.joplinglobe.com/news/local_news/hundreds-seeking-dicamba-complaint-resolutions-regulators-say-they-need-help/article_a123cc30-caa7-5c7b-bc7b-d6f7f6274304.html)
25 [complaint-resolutions-regulators-say-they-need-help/article_a123cc30-caa7-](https://www.joplinglobe.com/news/local_news/hundreds-seeking-dicamba-complaint-resolutions-regulators-say-they-need-help/article_a123cc30-caa7-5c7b-bc7b-d6f7f6274304.html)
[5c7b-bc7b-d6f7f6274304.html](https://www.joplinglobe.com/news/local_news/hundreds-seeking-dicamba-complaint-resolutions-regulators-say-they-need-help/article_a123cc30-caa7-5c7b-bc7b-d6f7f6274304.html).

26 ³⁷ Unglesbee, *supra* n.28.

27 ³⁸ *Id.*

1 millions of trees across 25 states, experts said.³⁹ “Our No. 1 problem on our
 2 trees is herbicide damage,” said Laurie Stepanek, forest health specialist
 3 with the Nebraska Forest Service. Stepanek said the damage has no
 4 boundaries, ranging from urban communities to native forests to tree
 5 nurseries. “We’ve got it everywhere, unfortunately. It’s so widespread and
 6 affecting so many trees.”

7 189. Lou Nelms, a retired biologist and former nursery owner who has
 8 documented tree injury in central Illinois for five straight years, has been
 9 finding injured sycamore trees in the middle of downtown areas across
 10 central Illinois, as far as a mile and a half from the closest crops.⁴⁰ Lab
 11 samples confirmed that dicamba was present.

12 190. Research out of the University of Missouri found that 1/200th of
 13 the current dicamba application concentration can injure trees, with apple,
 14 red maple, peach, and pin oak being the most sensitive.⁴¹ Pecan trees were
 15 found to be similarly sensitive,⁴² and the University of Georgia extension
 16

17 ³⁹ Johnathan Hettinger, *‘We’ve got it everywhere’: Dicamba damaging*
 18 *trees across Midwest and South*, Midwest Center for Investigative Reporting
 19 (June 16, 2020), <https://investigatemitwest.org/2020/06/16/weve-got-it-everywhere-dicamba-damaging-trees-across-midwest-and-south/>.

20 ⁴⁰ *Id.*

21 ⁴¹ Brian R. Dintelmann et al, *Investigations of the sensitivity of*
 22 *ornamental, fruit, and nut plant species to driftable rates of 2,4-D and*
 23 *dicamba*, 34 Weed Technology 331 (June 2020),
 24 [https://www.cambridge.org/core/journals/weed-](https://www.cambridge.org/core/journals/weed-technology/article/abs/investigations-of-the-sensitivity-of-ornamental-fruit-and-nut-plant-species-to-driftable-rates-of-24d-and-dicamba/73EACCF936DD92308C28D0AFD62EA2E1)
 25 [technology/article/abs/investigations-of-the-sensitivity-of-ornamental-fruit-](https://www.cambridge.org/core/journals/weed-technology/article/abs/investigations-of-the-sensitivity-of-ornamental-fruit-and-nut-plant-species-to-driftable-rates-of-24d-and-dicamba/73EACCF936DD92308C28D0AFD62EA2E1)
 26 [and-nut-plant-species-to-driftable-rates-of-24d-and-](https://www.cambridge.org/core/journals/weed-technology/article/abs/investigations-of-the-sensitivity-of-ornamental-fruit-and-nut-plant-species-to-driftable-rates-of-24d-and-dicamba/73EACCF936DD92308C28D0AFD62EA2E1)
 27 [dicamba/73EACCF936DD92308C28D0AFD62EA2E1](https://www.cambridge.org/core/journals/weed-technology/article/abs/investigations-of-the-sensitivity-of-ornamental-fruit-and-nut-plant-species-to-driftable-rates-of-24d-and-dicamba/73EACCF936DD92308C28D0AFD62EA2E1).

28 ⁴² M. Lenny Wells et al., *Simulated Single Drift Events of 2,4-D and*
Dicamba on Pecan Trees, 29 HortTechnology 360 (Apr. 2, 2019),

1 office estimates that synthetic auxins (dicamba, 2,4-D) score an 8 out of 10 for
2 their potential to contribute to long-term injury to pecan trees.⁴³

3 191. Monitoring by the Arkansas Audubon Society identified 243
4 instances of possible or probable dicamba damage on a wide variety of plants
5 across 17 eastern Arkansas counties in 2019.⁴⁴ Similar monitoring in 2020
6 identified 116 instances of probable dicamba damage and 4 instances of
7 possible dicamba damage. Eleven monitored sites where damage was
8 documented in 2019 had signs of damage in 2020 as well, indicating that
9 damage to species was occurring in multiple years. The most frequently
10 reported species of plant with probable damage was the sycamore tree.

11 192. Another 2019 monitoring study across 21 Illinois counties found
12 that 59 out of the 83 locations analyzed had dicamba damage that was rated
13 as moderate, severe, or extreme.⁴⁵ Trees were the type of plant that most
14 often showed symptoms of damage.

15 193. Ohio State University extension states that “For woody plants
16 and other perennial species, the potential for long-term or accumulating
17

18 [https://journals.ashs.org/horttech/view/journals/horttech/29/3/article-](https://journals.ashs.org/horttech/view/journals/horttech/29/3/article-p360.xml)
19 [p360.xml](https://journals.ashs.org/horttech/view/journals/horttech/29/3/article-p360.xml).

20 ⁴³ Lenny Wells, *Herbicide Injury of Pecan Trees*, UGA Cooperative
21 Extension Circular (Apr. 2019),
https://secure.caes.uga.edu/extension/publications/files/pdf/C%201146_1.PDF.

22 ⁴⁴ Dan Scheiman, *Dicamba Symptomology Community Science*
23 *Monitoring Report*, Audubon Arkansas (Nov. 9, 2020),
24 [https://ar.audubon.org/sites/default/files/static_pages/attachments/community](https://ar.audubon.org/sites/default/files/static_pages/attachments/community_science_monitoring_report_1920.pdf)
[_science_monitoring_report_1920.pdf](https://ar.audubon.org/sites/default/files/static_pages/attachments/community_science_monitoring_report_1920.pdf).

25 ⁴⁵ Kim Erndt-Pitcher & Martin Kemper, *Tree and Plant Health*
26 *Monitoring Report*, Prairie Rivers Network (2018-2019),
27 [https://prairierivers.org/wp-content/uploads/2020/07/Tree-and-Plant-Health-](https://prairierivers.org/wp-content/uploads/2020/07/Tree-and-Plant-Health-Monitoring-Report.pdf)
[Monitoring-Report.pdf](https://prairierivers.org/wp-content/uploads/2020/07/Tree-and-Plant-Health-Monitoring-Report.pdf).

1 effects is a concern. Herbicide drift may reduce winter hardiness and long-
 2 term vigor, which can result in high replacement costs and years of lost
 3 revenue waiting for new plants to produce.”⁴⁶

4 194. More than 60 areas managed by the Illinois Department of
 5 Natural Resource, including state parks and nature preserves, reported
 6 herbicide damage in 2018 or 2019.⁴⁷

7 *2020 Injuries*

8 195. By July 2020, scientists said weather conditions had made a
 9 “perfect storm” leading to drift from June spraying. “*It’s far worse than past*
 10 *years*,” said Meaghan Anderson, a field agronomist for Iowa State University,
 11 based in central Iowa.⁴⁸ “You can tell pretty quickly which soybean fields are
 12 not Xtend soybeans in my area, because they are all cupped and puckered
 13 up.”⁴⁹

14 196. States continued to struggle with dicamba damage in 2020. For
 15 example, Iowa recorded a record-high 215 investigations into auxin injury
 16
 17
 18
 19

20 ⁴⁶ Cassandra Brown et al., *Frequently Asked Questions*, Ohio State
 21 University College of Food, Agricultural, and Environmental Sciences,
 22 [https://ipm-drift.cfaes.ohio-state.edu/dicamba-and-24-d-fact-sheet-](https://ipm-drift.cfaes.ohio-state.edu/dicamba-and-24-d-fact-sheet-series/frequently-asked-questions)
[series/frequently-asked-questions](https://ipm-drift.cfaes.ohio-state.edu/dicamba-and-24-d-fact-sheet-series/frequently-asked-questions).

23 ⁴⁷ Hettinger, *supra* n. 39.

24 ⁴⁸ Emily Unglesbee, *Off-Target, Once Again*, Progressive Farmer (July
 25 9, 2020),
 26 [https://www.dtnpf.com/agriculture/web/ag/crops/article/2020/07/09/amid-](https://www.dtnpf.com/agriculture/web/ag/crops/article/2020/07/09/amid-legal-limbo-dicamba-injury-rise)
[legal-limbo-dicamba-injury-rise](https://www.dtnpf.com/agriculture/web/ag/crops/article/2020/07/09/amid-legal-limbo-dicamba-injury-rise).

27 ⁴⁹ *Id.*

(potentially dicamba), up from a confirmed 83 dicamba injury cases in the state in 2019.⁵⁰

197. In 2020, complaints increased in Minnesota as compared to 2018 and 2019 to over 9,000 acres, most related to soybeans, but also involving trees and specialty crops.⁵¹

198. Bayer/Monsanto received more complaints in 2020 from Iowa and Minnesota than in prior years.⁵²

199. In Indiana, the number of 2020 dicamba complaints still exceeded the state's overall average of 13 annual pesticide investigations before dicamba-resistant crops were commercialized.⁵³

200. The label remained impossible to follow in real world farming conditions. For example, data compiled by the University of Minnesota showed that central Minnesota farmers had fewer than 40 hours when they could legally apply dicamba from June 1 to June 15.⁵⁴ During the ideal two-week window for spraying dicamba in North Central Iowa in 2020, there

⁵⁰ Emily Unglesbee, *EPA Registers Dicamba Again*, Progressive Farmer (Oct. 27, 2020), <https://www.dtnpf.com/agriculture/web/ag/crops/article/2020/10/27/epa-approves-three-dicamba-federal>

⁵¹ Gil Gullickson, *Dicamba: Sunrise or Sunset?*, Successful Farming (October 7, 2020), <https://www.agriculture.com/news/crops/dicamba-sunrise-or-sunset>.

⁵² *Id.*

⁵³ Emily Unglesbee, *States Mull 2021 Dicamba Limits*, Progressive Farmer (Dec. 8, 2020), <https://www.dtnpf.com/agriculture/web/ag/crops/article/2020/12/08/states-working-restrict-dicamba-2021>.

⁵⁴ Gullickson, *supra* n. 51.

were *only a total of 40 hours that dicamba could legally be sprayed*, “resulting in large quantities of dicamba being applied in a small time period.”⁵⁵

The Ninth Circuit 2020 Decision in *NFFC v. EPA*, 960 F.3d 1120 (9th Cir. 2020)

201. The 2017 case completed briefing, and the Court heard oral argument in August 2018. However, before the Court could issue a decision EPA continued the registration in fall 2018. The Court subsequently dismissed Plaintiffs’ petition for review as moot. Plaintiffs then filed their petition for review of the October 2018 registration, which the Court expedited. *NFFC II*, 960 F.3d at 1130.

202. The Court held oral argument in April 2020 and in June 2020 handed down its opinion, holding that EPA violated FIFRA in granting the prior dicamba product registrations and vacating them. *NFFC II*, 960 F.3d at 1120-1145.⁵⁶

Conditional Registration Standard

203. Because it was a conditional new use registration, the Court explained that EPA had to make two determinations: a determination that the applicant had submitted satisfactory data and a determination that the registration would not “significantly increase the risk of any unreasonable

⁵⁵ Bob Hartzler & Prashant Jha, *Dicamba 2020: What went wrong in Iowa?*, Iowa State University (July 8, 2020), <https://crops.extension.iastate.edu/blog/bob-hartzler-prashant-jha/dicamba-2020-what-went-wrong-iowa>.

⁵⁶ Because the Court ruled in Plaintiffs’ favor on the FIFRA arguments, it did not need to reach the question of whether the registration also violated the ESA. *NFFC II*, 960 F.3d at 1125.

1 adverse effect on the environment.” *Id.* at 1124 (citing 7 U.S.C.
2 § 136a(c)(7)(B)); *id.* at 1133 (“We conclude that substantial evidence does not
3 support the EPA’s conclusion that both statutory prerequisites were
4 satisfied.”).

5 *Flawed Data*

6 204. On the “satisfactory data” finding, and studies on the herbicide
7 products, the Court noted that Monsanto, prior to the 2016 registration, did
8 not permit its herbicide formulation or its volatility to be available for
9 independent study, so the few small field trials were all done by Monsanto.
10 *NFFC II*, 960 F.3d at 1134. Based on these studies, EPA had concluded in
11 2016 that the dicamba products would “eliminate any offsite exposures and
12 effectively prevent risk potential to people and non-target species” and that
13 the products “created minimal risks, if they existed at all.” *Id.* However the
14 Court explained “EPA’s conclusion was incorrect” as the record of massive
15 drift damage in 2017 and 2018 showed and “EPA later acknowledged.” *Id.*

16 205. Later, Monsanto and EPA added other studies it characterized as
17 “confirmatory,” that is, confirming the data used to support the 2016
18 registration; but, as explained above, that 2016 data, far from being
19 satisfactory, had instead “of course, resulted in millions of acres of reported
20 dicamba damage.” *Id.* at 1135.

21 206. EPA also relied on hundreds of telephone reports of injury to
22 Monsanto, for which Monsanto almost entirely “absolved” its product and
23 instead blamed the drift damage on older formulations of dicamba used on
24 adjacent post-emergent corn fields. *Id.* The Court concluded that explanation
25 “however is not supported by the data,” because those older varieties had
26 been in use for a number of years and neither EPA nor Monsanto explained
27 why “*the number of herbicide drift complaints had skyrocketed* in 2017 and
28

1 2018, after XtendiMax, Engenia, and FeXapan were registered for post-
2 emergent use.” *Id.* (emphasis added). In fact, record evidence showed that the
3 use of older dicamba formulations on corn had been falling, not rising and
4 was only used on about 12% of corn acreage. *Id.* Finally, the record data also
5 included research conducted by various universities such as Arkansas,
6 Purdue, Wisconsin-Madison, Michigan State, and Nebraska in 2018 when
7 Monsanto finally permitted them to undertake independent studies of
8 volatility. However, rather than support EPA’s conclusions, that data showed
9 that the over-the-top dicamba formulations actually “could volatilize and drift,
10 resulting in visual injury to plants.” *Id.*

11 207. While the Court held that EPA’s data had “several flaws,” *id.* at
12 1124, it ultimately did not need to determine whether substantial evidence
13 supported that finding, because it held that EPA did not support with
14 substantial evidence the no “unreasonable adverse effect” finding, for
15 multiple reasons. *Id.*

16 *Failure to Support Registration with Substantial Evidence*

17 208. The Court made 6 different FIFRA holdings with supporting
18 factual findings, separated into 2 parts of 3 each. First, EPA “substantially
19 understated three risks it acknowledged.” *Id.* Second, EPA “also entirely
20 failed to acknowledge three other risks.” *Id.*

21 *Substantially Understated Risks*

22 209. As to the first trio of violations—those risks EPA at least
23 acknowledged but failed to support with substantial evidence—first, the
24 Court held that EPA “substantially understated” the amount of dicamba-
25 resistant seed acreage that would be planted, correspondingly “the amount of
26 dicamba herbicide that had been sprayed on post-emergent crops.” *Id.*
27 Specifically the Court held that EPA relied on a Monsanto prediction and
28

1 that “reliance was improper” because the record showed it was at least a 25%
2 underestimate of the actual dicamba-resistant seed acreage and
3 commensurately the amount of dicamba herbicide applied. *Id.* at 1136.

4 210. Second, the Court held that EPA’s conclusion that state dicamba
5 drift injury reports “could have either under-reported or over-reported” the
6 actual amount of damage was not supported by substantial evidence because
7 “the record clearly shows that complaints understated the amount of dicamba
8 damage.” *Id.* at 1137. According to EPA’s own documents, drift injury
9 complaints spiked in 2017 and 2018, and EPA had “no explanation for the
10 spike other than” the new over-the-top products. *Id.*

11 211. EPA improperly attempted to minimize “the significance of the
12 increase in complaints” by crediting a view that injuries could be being over-
13 reported. EPA admitted that many stakeholders—the Association of
14 American Pesticide Control Officials, university researchers, and some
15 growers—said the complaints were under-reported, but EPA declared that
16 “others” instead believed injuries were being over-reported. *Id.* at 1137.
17 However, the Court examined the record, which showed that “Monsanto, and
18 only Monsanto, was the ‘others’” on which EPA opaquely relied. *Id.* Monsanto
19 speculated that the damage was caused by older dicamba or other herbicides
20 used on nearby corn fields, but the Court determined, as explained above,
21 that corn use was decreasing, and dicamba damage is easily detected from
22 other herbicides by a signature “leaf cupping” on affected plants. *Id.*

23 212. The Court held that EPA’s “purported agnosticism” as to the
24 damage being over or under reported was “contradicted by *over-whelming*
25 *record evidence that dicamba damage was substantially under-reported.*” *Id.*
26 (emphasis added).

1 213. For example, the Court pointed to the conclusion of an Iowa State
2 professor, Robert Hartzler, who surveyed university field agronomists and
3 sent EPA his conclusion that “We know the reported incidences represent a
4 very small fraction of total drift cases. As farmers are reluctant to involve
5 regulatory agencies.” *Id.* at 1138 (concluding that less than 25% were
6 reported). Similarly, an Indiana state chemist estimated that only 1 out of 10
7 farmers damaged by dicamba drift actually filed complaints. *Id.* In record
8 documents, EPA itself had even admitted that “not all reports of crop damage
9 were reported.” *Id.* If complaints to state departments of agriculture were
10 under-reported, then “the amount of actual dicamba damage was, of course,
11 even greater” than what EPA’s 2018 decision document admitted. *Id.*

12 214. Third, EPA “refused to quantify or estimate the amount of
13 damage caused” or “even to admit that there was any damage at all.” *Id.* EPA
14 claimed that non-dicamba-resistant soybean crop damage was merely
15 “potential” and that it did “not have information” to quantify the damages. *Id.*
16 With regards to all other crops, damage to specialty crops, vegetable, and
17 ornamental, fruit, and shade trees, EPA referred to them generally as only
18 “alleged” damage to the “landscape.” *Id.*

19 215. The Court held that EPA in fact did have “information from
20 which it could have quantified dicamba damage, even if it could not have
21 calculated with precision the reduction in yield caused by the damage.” *Id.*
22 EPA officials *themselves* had given a September 2018 PowerPoint
23 presentation that showed in 2017 that more than 3.6 million acres of
24 soybeans were damaged by dicamba, and in the registration decision EPA
25 again used the 3.6 million figure. The same source, Professor Bradley of the
26 University of Missouri, had reported that by mid-July 2018, already another
27 1.1 million acres had been damaged. *Id.*

1 216. The Court held that EPA also actually had a “great deal of
2 quantitative information about extensive dicamba damage during both 2017
3 and 2018.” *Id.* The Court again held that EPA’s decision was contrary to the
4 record. EPA did have sufficient information to quantify the damage,
5 including a number of studies, presentations, articles, and other
6 documentation which included acreage totals and significant numbers of
7 complaints. *Id.*

8 217. Among them, the Court pointed to emails to EPA officials from
9 university weed scientists and state department of agriculture
10 representatives reporting injury to “specialty crops, vegetables, and
11 ornamental, fruit, and shade trees.” *Id.* The Court recounted numerous
12 transmittals from state experts to EPA on damage, including Dr. Ford
13 Baldwin of Arkansas and Dr. Bradley of Missouri. *Id.* at 1138-39. From the
14 Kansas Department of Agriculture: “we have been over run with dicamba
15 complaints.” *Id.* at 1139. From the North Dakota State University pesticide
16 program specialist: “what we now know, in 2018, is that minimizing off target
17 movement of dicamba to a reasonable level is NOT possible . . . this level of
18 movement is completely unacceptable.” *Id.* Tennessee: “wave after wave of
19 dicamba exposure.” Professor Larry Steckel of the University of Tennessee:
20 stated that the drift crisis “is like nothing I have ever seen before . . .
21 Dicamba drift for the past three years has often travelled a half mile to three-
22 quarters of a mile and all too frequently, well beyond that.” *Id.* (estimating
23 40% of Tennessee non-DT soybean acres damaged).

24 218. Accordingly, based on this record evidence, the Court held that
25 EPA’s refusal to quantify the amount of damage caused was contrary to
26 FIFRA and not supported by substantial evidence.

1 *Risks EPA Unlawfully Failed to Acknowledge and Consider*

2 219. In addition to the ways in which EPA substantially understated
3 the risks it acknowledged, the Court held that the second trio of FIFRA
4 violations, risks that EPA “entirely failed to acknowledge,” were risks that
5 EPA was “statutorily required to consider.” *Id.* at 1139.

6 220. First, EPA failed to acknowledge and consider problems of users’
7 inability to follow the label instructions, despite EPA’s heavy reliance on
8 these instructions as mitigation. *Id.* at 1139-40. The Court held that
9 “extensive evidence in the record” indicated there was a risk of “substantial
10 non-compliance” with the EPA label. *Id.* at 1139. The product use
11 instructions are mitigation: EPA’s “no unreasonable adverse effect”
12 determination was predicated on the label being followed. Thus the inability
13 to follow it would result in dicamba drift damage.

14 221. As the Court explained, the term “label” is a misnomer here “as
15 that term is normally understood.” *Id.* at 1140. Rather, the product use
16 directions were 40 pages long and had gone through several iterations (2016,
17 2017 revisions, and 2018 revisions). There were myriad instructions and
18 restrictions, including: time of day; wind speed (between 3-10 mph);
19 temperature inversions; rain within 24 hours, wind direction; in-field
20 downwind buffer; spraying equipment ground speed; spraying equipment
21 length and height above ground; number of applications per season and per
22 crop; certification and training; and others. *Id.*

23 222. The record evidence was “substantial” that “even conscientious
24 applicators had not been able to consistently adhere” to the use directions in
25 real world farming conditions. *Id.* Rather, the record evidence showed that
26 the instructions were “*difficult if not impossible*” to follow. *Id.* at 1124
27 (emphasis added).

1 223. The dicamba use “label” was “probably the most complex label I
2 have ever seen in my 40-year career,” according to one agricultural company
3 executive. *Id.* at 1140 (estimating that over the course of the entire 2017
4 summer, his operation only had 44 hours of application time that would have
5 been allowed under the label). Other users told EPA that “there doesn’t
6 appear to be any way for an applicator to be 100% legal in their application”
7 and “there is no legal way to spray the field,” putting applicators in a “no
8 win” situation. *Id.* at 1140. Still others called trying to follow the instructions
9 in real world farming conditions in their locations—such as blustery west
10 Texas—“*basically a fairy tale. You can’t do it. Your fairy godmother has to*
11 *pull out a wand, tap a pumpkin and turn it into a carriage.*” *Id.* at 1141
12 (emphasis added).

13 224. Nor was the evidence merely experiential. The Court explained
14 that Purdue professors calculated the difficulty in complying with the label
15 using actual rainfall events in 2018, taking into account the restrictions
16 based on wind speed and temperature inversions and calculated that there
17 were *only 47 hours during the entire month of June* in which spraying the
18 dicamba products would have been legal. *Id.* And of those total monthly
19 hours, there were only 2 (24 hour) days where, during an 8-hour day,
20 application would have been possible (11 hours one day, 8 hours another); the
21 remaining hours were scattered throughout the rest of the month in smaller
22 stray increments. *Id.* The data underscored that, “in the real world,” there
23 are not “very many hours” where applicators can be “completely compliant.”
24 *Id.*

25 225. A state survey of Illinois commercial applicators showed that only
26 66% believed they were able to follow the label effectively and included
27
28

1 comments like “I believe it is *impossible to make an on-label application* as
2 the label is written” *Id.* at 1141 (emphasis added).

3 226. The Court noted that much of the record evidence dealt with the
4 impossibility of the earlier 2016 and 2017 use directions, but in fall 2018 EPA
5 added even more directions, such as reducing further the time of day when
6 application can occur and total days after planting. *Id.* at 1141. Thus the
7 record evidence of substantial non-compliance with the prior label showed
8 that compliance with the 2018 label “[would] be even more difficult.” *Id.* Yet
9 EPA “nowhere acknowledged the evidence in the record showing there had
10 been substantial difficulty complying with the mitigation requirements of the
11 earlier labels.” *Id.* at 1142.

12 227. Second, the Court explained that FIFRA requires EPA to
13 consider as part of the cost-benefit analysis, “any unreasonable adverse
14 effects to man or the environment, taking into account the economic, social,
15 and environmental costs” of the pesticide. *Id.* (quoting 7 U.S.C. § 136(bb)).
16 Yet the Court held that EPA had nonetheless “entirely failed to acknowledge
17 risks of economic and social costs.” *Id.*

18 228. As to economic costs, the Court held that EPA “entirely failed to
19 acknowledge an economic cost that is *virtually certain to result*” from the
20 registrations: namely, anti-competitive, monopolistic effects to the seed and
21 related agricultural markets. *Id.* at 1142 (emphasis added).

22 229. The predecessor to the dicamba-resistant crop system was the
23 glyphosate-resistant crop system, with the seeds and pesticide (Roundup)
24 sold together as a crop system. These crop systems already had become a
25 near monopoly, with 90% of soybeans in 2008 being Roundup ready. *Id.* Then,
26 because of that overuse, the resistant weed problem led to Monsanto’s
27 “solution” to the crisis it created: dicamba-resistant crops.

1 230. Dicamba-resistant crops were quickly “well on their way to the
2 same degree of market dominance.” *Id.* By 2017, dicamba-resistant crops
3 constituted 25% of soybeans, and by 2018, 50%. *Id.*

4 231. The record evidence showed that farmers felt compelled by the
5 increased planting of dicamba-resistant crops and the accompanying and
6 increasing off-field drift damage to change from conventional soybeans to
7 dicamba-resistant soybeans as a defensive measure. Seed company
8 executives wrote to EPA in 2017 and 2018, warning them about this
9 anticompetitive economic cost. *Id.* at 1142 (“Even more alarming is the
10 number of my customers who have told me they will plant all Xtend varieties,
11 instead of my [conventional] seed, as a defensive measure against damage
12 from [drift]”); *id.* (“over and over again from our farmer customers” we are
13 hearing “I guess I will have to plant dicamba resistant soybeans next year to
14 avoid the off target injury. I cannot afford to keep getting my soybeans
15 damaged from dicamba.”).

16 232. Professors and weed scientists from North Dakota, Tennessee,
17 and Arkansas told EPA similarly. *Id.* at 1143. Dr. Baldwin told EPA
18 “dicamba has a chemistry problem that likely cannot be fixed, or at least no
19 evidence has been provided that it can be successfully applied . . . renewing
20 the cotton and soybean registrations will leave the industry no choice but to
21 plant 100% of the soybean acreage [with] this technology.” *Id.*

22 233. Accordingly, the Court held that the over-the-top registrations
23 “create[] a substantial risk that DT soybeans, and possibly DT cotton, will
24 achieve a monopoly or near-monopoly.” This “anti-competitive effect” of the
25 registrations would “impose a clear economic cost,” but EPA failed to even
26 identify it, let alone take it into account. *Id.*

234. Third, the Court held that EPA had also “entirely failed to acknowledge the social cost that farming communities had already been experiencing and was likely to increase.” *Id.* There was “extensive evidence” in the record that the dicamba herbicides had “torn apart the social fabric of many farming communities.” *Id.* Letters to EPA from stakeholders told them of the high, unprecedented cost, “pitting neighbor against neighbor; farmers threatening other farmers.” *Id.* Responses to an Illinois survey included “in 43 years of business I have never seen a more divisive product among neighbors both farm and non-farm.” *Id.* (“This technology cannot continue as is if we ever wish to raise a susceptible crop or maintain healthy relationships with our residential and environmental neighbors.”). An Arkansas farmer was shot and killed in an argument over dicamba drift damage.

235. Not just farmers but homeowners and gardeners suffered damage as well: severe damage to trees, ornamental plants, shrubs, and vegetables. *Id.* at 1143 (*e.g.*, “These are 100-year old oaks. We’re senior citizens and we don’t have time to plant new trees and watch them get even halfway to maturity.”).

236. Accordingly, the Court held that the “severe strain on social relations in farming communities” where the dicamba products were being sprayed was a “clear social cost,” but that EPA failed to identify and take it into account. *Id.*

Summary of Holdings

237. For all these reasons and considering the record as a whole, the Court then concluded that substantial evidence did not support the new use registration decision. *Id.* at 1144; *see also id.* at 1124. While EPA had found

1 two benefits from the uses, it had “failed to perform a proper analysis of the
2 risks and the resulting costs of those uses.” *Id.* at 1144.

3 238. First, EPA “substantially understated the costs it acknowledged.”
4 *Id.* These included the total acreage planted with dicamba-resistant soybeans
5 and the resulting use of dicamba. EPA relied on a Monsanto prediction when
6 the record evidence before EPA showed the actual acreage was “much higher”
7 and the combined soybean and cotton acreage “higher still.” *Id.* Further, EPA
8 recognized there had been an “enormous increase” in dicamba drift
9 complaints in 2017 and 2018, but it purported not to know whether those
10 complaints under-reported or over-reported the damage. In fact, the record
11 evidence showed the complaints “substantially under-reported the actual
12 amount of damage.” *Id.* Finally, EPA “substantially understated the amount
13 of dicamba damage,” characterizing it as only “potential” or “alleged” and
14 claiming there was insufficient data from which to estimate the amount of
15 damage. In fact, the record evidenced showed that dicamba drift damage
16 from the over-the-top new use registrations in 2017 and 2018 had “caused
17 *enormous and unprecedented* damage.” *Id.* at 1144 (emphasis added).

18 239. Second, EPA also entirely failed to acknowledge and consider
19 other costs. *Id.* EPA entirely failed to account for the substantial degree of
20 non-compliance with the label mitigation, given the impossibility of following
21 it in real world farming conditions, and what that would mean for increased
22 drift damage. *Id.* at 1144. That is, EPA based its registration decision on the
23 premise that the label’s mitigation would be followed and thus limit off-field
24 drift, when the evidence was that label instructions were “difficult if not
25 impossible” to follow. *Id.* at 1124. Further, EPA failed to recognize and
26 consider the economic costs of drift damage coercing farmers to defensively
27 adopt dicamba-resistant crops, and the anti-competitive, monopolistic results

1 on the soybean and cotton industries. *Id.* at 1144. Finally, EPA failed to
2 recognize and consider the “*enormous social cost to farming communities* of
3 the new use registrations, where the products had “turned farmer against
4 farmer, neighbor against neighbor.” *Id.* (emphasis added).

5 *Remedy*

6 240. Applying the Ninth Circuit’s criteria for vacatur, the Court
7 vacated the registrations. *Id.* at 1144-45. EPA made “multiple errors,” and its
8 “fundamental flaws” were “substantial.” *Id.* The Court found it “exceedingly
9 unlikely” that EPA could (lawfully) issue the same registration again for the
10 new uses. The Court carefully weighed the practical effects of the decision on
11 farmers’ current use and any difficulty finding alternative pesticide options,
12 but concluded that the absence of substantial evidence to support the
13 registrations compelled vacatur all the same. *Id.*

14 241. Because the Court based its vacatur on its holding under FIFRA,
15 the Court did not reach the question whether the registration decision also
16 violated the Endangered Species Act.

18 **The Fall 2020 Registration**

19 242. On July 2, 2020, less than one month after the Ninth Circuit held
20 the prior registrations of these products unlawful for multiple violations of
21 FIFRA and vacated them, Bayer and BASF submitted registration
22 applications for the same products (XtendiMax and Engenia) for use on
23 cotton and soybeans. Similarly, Syngenta submitted an application to amend
24 its Tavium registration on August 12, 2020, including a request that the
25 upcoming expiration date be extended.

26 243. EPA responded by assigning fifty staff members to work on the
27 2020 Registration Actions in a rush to issue them before Election Day. On
28

1 October 27, 2020, just six days before the presidential election and without
2 providing an opportunity for public notice and comment, EPA again
3 registered the same products that had been vacated fewer than five months
4 prior in the decision challenged here. *See* Ex. A, at 3 (“EPA did not hold a
5 public comment opportunity for these registration actions.”). EPA made the
6 announcement not in Washington, D.C. but during an event on a farm in
7 Georgia, to a crowd including the American Farm Bureau Federation
8 president Zippy Duvall, the National Cotton Council of America Chairman
9 Kent Fountain, two Georgia congressmen, and the Georgia Commissioner of
10 Agriculture.⁵⁷

11 244. As noted above, the prior approvals were limited to 2 years, due
12 to concerns about excessive drift damage and weed resistance and had been
13 only conditional registrations.

14 245. This time, EPA *unconditionally* registered the Xtendimax,
15 Engenia, and Tavium products and did it for the next *five* years.

16 246. Just as the prior 2016 and 2018 registration decisions allowed,
17 the 2020 Registration Actions allow for the use of these three dicamba
18 products in 34 states, including Arizona, totaling 90 to over 100 million acres
19 of U.S. farmland.

20 247. EPA mainly based the 2020 Registration Actions on past studies,
21 previously available to EPA for its prior 2016 and 2018 registration decisions,
22 which EPA now admits were tainted with political interference.

23 Memorandum from Michal Freedhoff to the Office of Chemical Safety and
24

25 ⁵⁷ EPA, *Administrator Wheeler Meets with Agricultural Stakeholders*
26 *in Florida, Georgia* (Oct. 27, 2020),
27 <https://www.epa.gov/newsreleases/administrator-wheeler-meets-agricultural-stakeholders-florida-georgia>.

1 Pollution Prevention (Mar. 10, 2021). Numerous studies were again
 2 discounted in assessing potential risks and benefits and in assessing negative
 3 impacts. *Id.* EPA relied on only a handful of further assessments of the risks
 4 to human health and the environment put together in fewer than four
 5 months following Bayer and BASF's applications on July 2.

6 248. Numerous deficiencies identified by the Ninth Circuit remain
 7 unaddressed in the Registration Actions as detailed below.

8 *Seed Acreage*

9 249. The Ninth Circuit determined that EPA "substantially
 10 understated the amount of dicamba-resistant seed acreage that had been
 11 planted in 2018, and, correspondingly, the amount of dicamba herbicide that
 12 had been sprayed on post-emergent crops," and improperly relied on
 13 Monsanto's April 5th, 2018 prediction for acreage in 2018, rather than the
 14 substantially higher figure cited in Monsanto's October 2018 white paper.
 15 *NFFC II*, 960 F.3d at 1124.

16 250. In issuing the Registration Actions, EPA provides no estimate of
 17 dicamba-resistant seed acreage planted in 2019 and 2020 and instead reports
 18 only the annual average acres planted for cotton and soy from 2017-18.⁵⁸
 19 Numerous reports however indicate that the number of acres planted with
 20 dicamba-resistant seeds have increased since then. These earlier numbers,
 21 again, lead to an understatement of the amount of dicamba used.

22 251. Accordingly the 2020 Registration Decisions are based on similar
 23 under-estimates of dicamba-resistant acreage (and consequential harm).

26 ⁵⁸ EPA, *Assessment of the Benefits of Dicamba Use in Genetically*
 27 *Modified, Dicamba-Tolerant Cotton Production* 9 (Oct. 26, 2020).

1 *Under-reporting*

2 252. The Ninth Circuit also held that EPA’s conclusion that state
3 dicamba drift injury reports “could have either under-reported or over-
4 reported” the actual amount of damage was not supported by substantial
5 evidence because “the record clearly show[ed] that complaints understated
6 the amount of dicamba damage.” *NFFC II*, 960 F.3d at 1137. While EPA
7 insisted that “others” claimed over-reporting occurred, the Court determined
8 that the “others” were only Monsanto. *Id.*

9 253. EPA’s “purported agnosticism” as to the damage being over or
10 under reported was “contradicted by overwhelming record evidence that
11 dicamba damage was substantially under-reported,” and the EPA’s assertion
12 of over-reporting was not supported by substantial evidence. *Id.*

13 254. As in 2018, the 2020 registration decision minimizes the
14 significance of the increase in complaints from 2017-2019 by suggesting that
15 injuries could have been over-reported. *See* Ex. A, at 8. While EPA again
16 admitted that many stakeholders—the Association of American Pesticide
17 Control Officials, university researchers, and some growers—determined the
18 complaints were under-reported, it declared that “there may have been issues
19 of over-reporting.” *Id.* EPA speculates that over-reporting may have occurred
20 due to damage from older, more volatile formulations and due to damage
21 reports given in terms of acreage that reflects the size of an entire crop field,
22 not just the damaged portion. *Id.*

23 255. However, a 2018 Agricultural Resource Management Survey
24 (ARMS) found that soybean growers alone suffered 65,000 adverse effect
25 incidents to their own fields, which is approximately *25 times the number of*

1 *dicamba incidents reported to EPA for all crops*.⁵⁹ Farmers reported still
 2 more injury when queried about dicamba damage to their neighbors' fields
 3 and in their county, with damage rising to an astounding 10% and nearly
 4 16% of soybean fields, representing over 11 and nearly 16 million damaged
 5 acres, respectively. This survey provides ample evidence that dicamba
 6 damage has been vastly under-, not over-reported.

7 256. EPA provides numerous reasons why under-reporting may occur.
 8 If damage occurs on a neighboring field, the two parties may resolve the
 9 incident amongst themselves and choose not to report it. Others, including
 10 non-farmers, may accept dicamba damage "as the price of living in an
 11 agricultural community," or believe nothing would be done even if they did
 12 report.⁶⁰ Indeed, the press has reported "dicamba fatigue" in farming
 13 communities as dicamba-injured parties stop reporting because they have
 14 learned their complaints have no effect. Further, the fear of retaliation may
 15 prevent reporting because some growers have been targets of vandalism and
 16 intimidation (*e.g.*, burning hay bales and destroying tractor engines).⁶¹
 17 Additionally, the lack of knowledge of how to report incidents may prevent
 18 reporting.⁶²

19 257. Further, dicamba registrants may under-report due to concerns
 20 over regulatory action, damage claims, and litigation from the reports of
 21

22 ⁵⁹ EPA, *Dicamba Use on Genetically Modified Dicamba-Tolerant (DT)*
 23 *Cotton and Soybean: Incidents and Impacts to Users and Non-Users from*
 24 *Proposed Registrations* 31-32 (Oct. 26, 2020) (hereafter *Dicamba Incident*
Report).

25 ⁶⁰ *Id.* at 33.

26 ⁶¹ *Id.*

27 ⁶² *Id.*

adverse effect incidents.⁶³ The EPA acknowledged evidence indicating that dicamba registrants were aware that illegal applications occurred in 2015 on dicamba-resistant cotton but failed to report these incidents to the EPA.⁶⁴

258. Accordingly the 2020 Registration Actions are based on the same and similar erroneous reporting assumptions as previous years.

Estimations of Damage

259. The Court held that for the 2018 registrations, EPA did have “information from which it could have quantified dicamba damage, even if it could not have calculated with precision the reduction in yield caused by the damage.” *NFFC II*, 960 F.3d at 1138. For these Registration Actions, EPA acknowledges that in 2017, over 2,700 official cases of crop damage were reported to state departments of agriculture, estimated to be over 3.6 million acres of soybeans. Ex. A, at 7.

260. EPA also summarized data from an ARMS survey of soybean growers, which included questions about the occurrence of visual signs of injury (VSI) related to dicamba.⁶⁵ Nearly four percent of surveyed soybean growers have seen VSI on their own fields consistent with dicamba exposure, which indicates VSI on 4.1 million acres. *Id.* About 10% of the total soybean growers in the survey were aware of dicamba VSI on neighboring fields, which adds up to 11.3 million injured acres, and about 15% of the growers were aware of dicamba VSI on soybean in their county, which adds up to 15.6 million acres of dicamba-injured soybeans. *Id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ EPA, *Dicamba Incident Report*, *supra* n. 59, at 31.

261. The total number of dicamba incidents reported to EPA's Incident Data System went up from zero reported in 2014 through 2016 to a total of approximately 1,400 in 2017, 3,000 in 2018, and 3,300 in 2019. *Id.* at 28. These data from USDA ARMS and EPA's Incident Data System demonstrate that off-target movement of dicamba has caused far more damage than EPA has previously acknowledged in its prior registration and label amendment decisions, and could have been used in combination with other data to arrive at credible estimates of yield and associated revenue loss.

262. As in the past registrations, in the 2020 Registration Actions EPA had sufficient data to quantify past and likely future harm from drift damage, but failed to so inform its decision before registering the products.

Users' Inability to Follow Label Instructions

263. EPA again relies on mitigation in the form of use instructions for its conclusion that the Registration Actions will not cause "adverse effects on the environment," yet the use instructions for all three products repeat many of the same instructions as the vacated 2018 decision. These include: requirements that certified applicators apply the dicamba products; a 57-foot omni-directional buffer in areas with endangered species; a prohibition on applying when sensitive crops or certain plants are immediately downwind; a limit of two over-the-top applications of dicamba per field per year for both dicamba-resistant cotton and dicamba-resistant soybeans; a requirement to apply only during wind speeds of 3-10 miles per hour; a restriction on the time of day for spraying between one hour after sunrise and two hours before sunset; and mandatory applicator training.

264. These same conditions, previously relied upon as mitigation in prior growing seasons proved "difficult if not impossible to follow" in real world farming conditions. *NFFC II*, 960 F.3d at 1124, 1140-41. EPA then

1 relied on these measures' effectiveness to support its no "unreasonable
2 adverse effects" determination and has done so again. Yet the EPA has again
3 improperly failed to account for the risk of users' inability to follow these
4 instructions despite their best efforts.

5 265. Farmers, farming associations, and commercial applicators have
6 repeatedly reported difficulties in following these same restrictions. *See*
7 *supra* ¶¶223-25. For example, a Kentucky grain producer told EPA, in
8 describing a conventional soybean field surrounded by dicamba-resistant
9 crops: "[T]here is no legal way to spray this field. You can't apply dicamba
10 with a wind speed of 0 MPH (must be 3-10 MPH) and you can't apply it when
11 the wind is blowing towards a sensitive crop. So there is really no way to use
12 the products." *NFFC II*, 960 F.3d at 1140 (emphasis added). Further, the
13 Illinois Fertilizer and Chemical Association conducted a survey of its
14 members in July and August 2018 and found that 34 percent of professional
15 applicators felt they failed to follow the dicamba product label effectively in
16 2018, despite their mandatory training. *Id.* at 1141. Numerous responses
17 centered on difficulties in following the wind requirements, which remain in
18 the 2020 registration. *Id.* ("Weather is never right. Too windy, too hot, to[o]
19 humid—we can't win"); ("Very light, shifting winds made it impossible to
20 'always be right' during the time when we needed to spray").

21 266. These 2018 comments were made even before EPA had added
22 further use instructions in October 2018, additions which as the Court noted,
23 would only make compliance even more difficult. *Id.* at 1141. First, EPA's
24 2018 (and now 2020) registrations reduced the previous sunrise to sunset
25 application period by three hours every day, by restricting applications to a
26 time period from one hour after sunrise to two hours before sunset. *Id.*
27 Second, the 2018 registration mandated that farmers spray over-the-top with
28

1 the dicamba products within sixty days of planting DT cotton, and within
 2 forty-five days of planting DT soybeans. *Id.* As the Court noted: “Many
 3 applicators found it difficult or impossible to comply with the 2017 label
 4 during the 2018 growing season. Compliance with the 2018 label during the
 5 2019 and 2020 growing seasons will be even more difficult.” *Id.*

6 267. EPA now concedes the difficulty of complying with the many
 7 instructions on the 2018 and new 2020 labels. For instance, compliance with
 8 the prohibition against spraying during temperature inversions is hindered
 9 by the fact that the labels provide “no information . . . on how to measures
 10 temperatures to determine if [a temperature inversion] is present.”⁶⁶
 11 Likewise, compliance with the narrow 3-10 mph wind speed application
 12 window “may be situational based on varying wind speeds during
 13 application.”⁶⁷ The combination of certain restrictions, EPA now admits, can
 14 put applicators in impossible dilemmas: “For instance, if winds increase to 12
 15 MPH during application and the weather forecast predicts rain for the next
 16 four days, a grower would have to choose between making applications in a
 17 timely fashion (albeit in violation of the label) or following the label and not
 18 finishing the application.”⁶⁸

19 268. Based on these surveys, comments, and additional restrictions,
 20 the Ninth Circuit determined that extensive record evidence indicated a
 21 serious risk that farmers would be unable to comply with the mandatory
 22 label for the 2019 and 2020 growing seasons. *NFFC II*, 960 F.3d at 1139.
 23 That same evidence of noncompliance applies with still greater force to the
 24

25 ⁶⁶ EPA, *Dicamba Incident Report*, *supra* n. 59, at 39.

26 ⁶⁷ *Id.*

27 ⁶⁸ *Id.*

1 2020 registrations, compliance with which EPA has made still more difficult
2 by further reducing the application window: farmers must now avoid
3 application (under certain soil conditions) when rainfall is expected within 48
4 hours, rather than when expected within 24 hours, as stipulated on the 2018
5 label.

6 269. Jean Payne, president of the Illinois Fertilizer and Chemical
7 Association, agreed the new label is not much better than the 2018 label.⁶⁹
8 “It’s not easy to follow,” Payne said, specifically because the large downwind
9 buffers mean sprayers will often have to spray one day and then come back a
10 different day when the wind is blowing a different direction.

11 270. The Registration Actions’ only attempt to address users’ inability
12 to follow label instructions is claiming that the simpler label format will be
13 easier to understand and follow. Ex. A, at 21. EPA claims that having
14 separate product labels for use on only DT soybean and DT cotton (as opposed
15 to other uses, not over-the-top uses on other crops pre-emergence and post-
16 planting) will simplify the use instructions and improve compliance. *Id.* at 18.
17 However, several of these control measures admittedly still “involve more
18 elaborate user practices than similar herbicides.” *Id.* And more importantly,
19 EPA falsely assumes the crux of the issue is applicators’ inability to properly
20 *understand* a complex label, when the real issue is weather-related usage
21 instructions that are so numerous and restrictive as to make it *impossible*, on
22 a consistent basis in the real world, to successfully use the products for their
23 intended purpose – weed control – while still complying with the label.

24
25
26
27 ⁶⁹ Hettinger, *supra* n. 16.

1 *Economic Costs*

2 271. Despite the Ninth Circuit’s decision, the 2020 Registration
3 Actions and supporting documents also still fail to consider, assess, account
4 for, and quantify, or even estimate, economic costs to farmers, seed
5 companies, or other stakeholders resulting from dicamba drift.

6 *Harm from Drift*

7 272. While EPA acknowledges that “non-users may experience
8 impacts from crop injury or increased costs resulting from offsite movement
9 of dicamba,” nowhere in the 2020 supporting documents, including the two
10 Benefits Assessments, does the EPA critically assess, quantify, or even
11 provide rough estimates of farmers’ financial losses as a result of off-target
12 drift.

13 273. The record before EPA in its 2018 and now 2020 Registration
14 Actions is replete with credible accounts of crop destruction, as well as
15 damage to fruit tree orchards and vineyards, and non-agricultural trees and
16 plants ensuing from dicamba damage. Such damages have resulted in
17 significant yield losses for the season, and in the case of perennial plants
18 such as fruit and ornamental trees, the damaged tree would have to
19 replanted and re-cultivated to commercial productivity, resulting in economic
20 losses for multiple years.⁷⁰

21 274. Between 2017 and 2019, 5,600 farmers filed complaints with
22 Bayer and BASF about their crops being damaged.⁷¹ These farmers reported
23 damage to peaches, cotton, tobacco, tomatoes, trees, sunflowers, and many
24 other crops.

25
26 ⁷⁰ See, e.g., EPA, *Dicamba Incident Report*, *supra* n. 59, at 46-47.

27 ⁷¹ Hettinger, *supra* n. 16.

1 275. The dicamba drift crisis has produced hundreds of damages
2 cases. The first to go to trial, *Bader Farms, Inc. v. Monsanto Co.*, No. 1:16-
3 CV-00299-SNLJ, 2020 WL 1503395 (E.D. Mo. Feb. 28, 2020), involved a
4 Missouri peach orchard, which experienced significant drift damage from
5 neighboring crop fields.

6 276. Nearly two hundred company documents presented in the case
7 showed that Monsanto knew XtendiMax would move off-field and cause
8 harm. Monsanto projected thousands of drift incidents, and prohibited testing
9 of drift properties to more easily obtain EPA registration. Documents
10 conceded drift despite label-compliant application, and drift-caused yield loss.

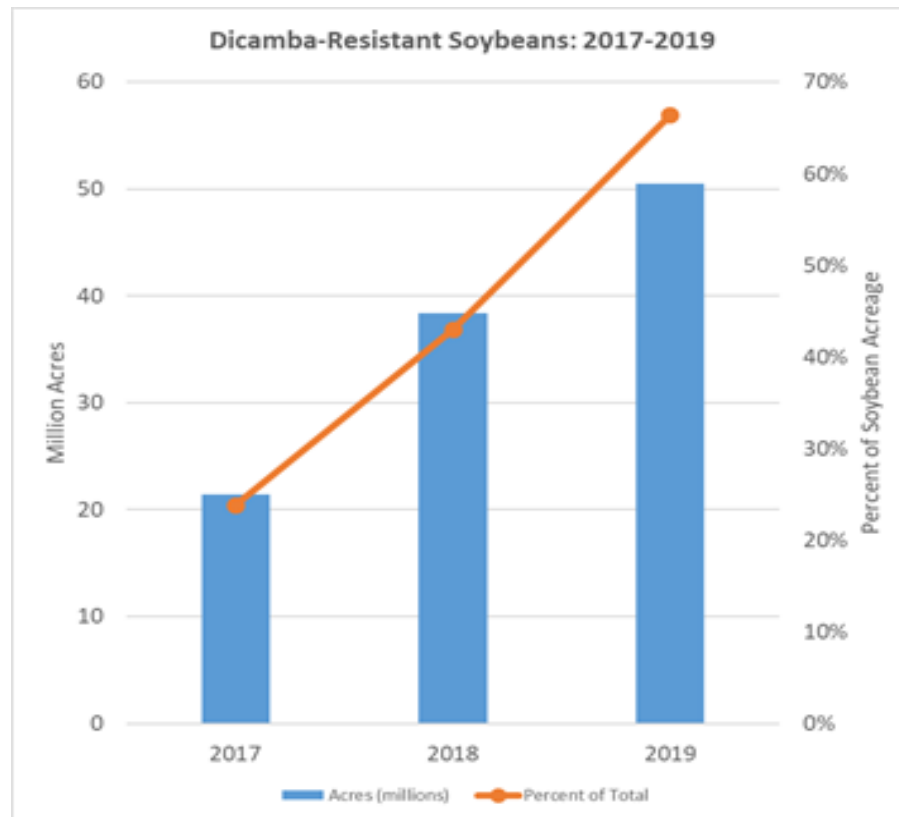
11 277. The jury rejected Monsanto's defense that damage was because of
12 farmer misapplication, not their pesticide, and found in Bader's favor on all
13 counts, awarding \$15 million in actual damages and \$250 million in punitive
14 damages. It found Monsanto and BASF liable for negligent design of their
15 products and failure to warn. The jury also found the companies conspired to
16 create an "ecological disaster" of off-target pesticide movement and damage to
17 increase profits.

18 278. Consolidated cases of thousands of other farmers have followed.
19 *See, e.g.*, Master Antitrust Class Action Complaint, *In Re Dicamba*
20 *Herbicides Litigation*, No. 1:18-md-02820-SNLJ (E.D. Mo. Aug. 1, 2018),
21 www.moed.uscourts.gov/sites/moed/files/documents/118md2820-0138.pdf.

22 279. In June 2020, Monsanto reached a \$400 million settlement with
23 farmers whose crops have been damaged by drift from dicamba. Monsanto
24 agreed to pay up to \$300 million to soybean producers who suffered from
25 dicamba drift damage. Another \$100 million was allocated for non-soybean
26 injury claims.

Harm from Market Consolidation or Economic Costs from Defensive Adoption

280. Nor does the EPA sufficiently account for the economic harm from market consolidation. Soybean and cotton are susceptible to injury from dicamba, which has led to the practice of defensive planting: “growers planting dicamba-tolerant varieties of soybean not to use dicamba after crop emergence, but to protect their crops from the risk of exposure due to off-field movement of dicamba from neighboring fields.”⁷²



⁷² EPA, *Dicamba Incident Report*, *supra* n. 59, at 43.

1 281. EPA confirms the existence of anecdotes regarding defensive
2 planting but asserts that “no systematic study to determine how common it
3 may be.”⁷³ If it were common, EPA admits “there could be concerns about
4 companies providing DT technology to obtain monopoly power and extract
5 excessive profits at the expense of growers.”⁷⁴

6 282. Yet EPA has far more than anecdotal evidence. Survey data
7 collected and analyzed by USDA shows that only about half (51%) of
8 dicamba-resistant soybean acreage is subsequently sprayed with dicamba
9 post-emergence, while fully 40% of dicamba-resistant cotton does not receive
10 post-emergence treatments.⁷⁵ Based on these numbers, the EPA concluded
11 that data “supports anecdotal reports that some soybean growers may be
12 planting dicamba-tolerant soybean as an insurance against off-field
13 movement of dicamba from neighboring fields.”⁷⁶ If farmers defensively
14 planted even three percent of the 29.9 million acres of dicamba-resistant
15 soybean, it would represent almost one million acres of soybean.⁷⁷

16 283. In 2018, only 51% percent of farmers sprayed dicamba on
17 dicamba-resistant crops.⁷⁸ By comparison, more than 90% of farmers sprayed
18 the associated herbicides on the crop’s two largest competitors, glyphosate-
19 resistant crops and glufosinate-resistant crops.

22 ⁷³ EPA, *Dicamba Incident Report*, *supra* n. 59, at 43.

23 ⁷⁴ *Id.*

24 ⁷⁵ *Id.* at 43-44.

25 ⁷⁶ *Id.* at 45.

26 ⁷⁷ *Id.*

27 ⁷⁸ Hettinger, *supra* n. 16.

1 284. Further both Monsanto and BASF planned defensive adoption as
 2 a marketing strategy well before the 2016 registrations. Monsanto told its
 3 sales teams to pitch dicamba-resistant crops as products that would protect
 4 farmers – including especially “driftees” who had previously experienced
 5 dicamba injury - from dicamba drifting from their neighbors’ fields, while
 6 BASF presented this marketing strategy in a September 2016 meeting.

7 285. In April 2017, a market research document prepared by Bank of
 8 America determined that defensive adoption drove sales. A Monsanto
 9 executive acknowledged these findings: “Interesting assessment that much of
 10 the Xtend acreage was planted to protect themselves from neighbors who
 11 might be using dicamba? Gotta admit I would not have expected this in a
 12 market research document.”⁷⁹

13 286. In 2018, numerous seed companies reported to EPA that their
 14 farmer-customers felt forced to switch from conventional seeds to dicamba-
 15 resistant seeds, to avoid further off-target injury to their crops and economic
 16 losses. Thus, the imperative to avoid dicamba drift injury entailed economic
 17 losses to the seed companies selling conventional cotton and soy seeds. *NFFC*
 18 *II*, 960 F.3d at 1142. The Court explained that “Many farmers have felt, and
 19 will continue to feel, compelled by the increased planting of DT soybeans, and
 20 the accompanying increased use of over-the-top dicamba, to change from non-
 21 DT to DT soybeans.” *NFFC II*, 960 F.3d at 1142.

22 287. While EPA concedes that such “defensive planting” could entail
 23 “increased cost and/or reduced yields,” it provides no assessment of these
 24 costs to either farmers or seed dealers.⁸⁰ Nor does EPA make any attempt to
 25

26 ⁷⁹ *Id.*

27 ⁸⁰ EPA, *Dicamba Incident Report*, *supra* n. 59, at 45.

1 weigh these costs against the putative benefits of the registration. In fact, the
2 dozens of references to “costs” in the Impacts Assessment refer almost
3 exclusively to putative costs associated with dicamba-resistant crop growers’
4 compliance with control measures, or to costs of alternative herbicide systems
5 in the absence of over-the-top dicamba.

6 288. EPA speculates that defensive planting would continue with or
7 without the 2020 registrations and dismisses the impact on farmers. *Id.* at
8 45.

9 289. The Ninth Circuit determined that EPA had “entirely failed to
10 recognize the economic cost imposed by the coercion of non-DT farmers to
11 convert to DT crops, and the resulting anti-competitive effect of that
12 coercion.” *NFFC II*, 960 F.3d at 1144. EPA has done so again here.

13 *Social Cost to Farming Communities*

14 290. The Ninth Circuit found that over-the-top uses of dicamba had
15 “torn apart the social fabric of many farming communities”: an impact which
16 the EPA had entirely failed to take into account. *Id.* at 1143. Farmers began
17 threatening farmers; destroying their neighbors’ crops, trees, ornamentals,
18 and gardens; and even resorting to acts of violence. *Id.*

19 291. EPA’s failure to mention anything regarding this “severe strain
20 on social relations in farming communities,” *id.* at 1143, constituted a
21 violation of its FIFRA mandate to consider “social costs” in deciding whether
22 to grant a pesticide registration.

23 292. The 2020 Registration Actions and supporting documents again
24 fail to account for social costs to farming communities. Rather, EPA only
25 provides a pro forma description of how, theoretically, “[t]he potential for
26 offsite injury to neighboring crops from dicamba can result in conflict
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28

1 between neighbors.”⁸¹ Incredibly, EPA justifies its refusal to critically assess
 2 the enormous social costs of past and future over-the-top dicamba use by
 3 speculating that such social costs, absent over-the-top dicamba, would
 4 continue to be incurred due to illegal use of other forms of dicamba that are
 5 currently registered by EPA.⁸²

6 293. The 2020 Registration Actions will result in the same strain on
 7 social relations in farming communities. Dicamba drift will continue
 8 impacting neighbors’ crops and gardens and continue to drive apart
 9 communities.

10 *Further Assessments on Adverse Effects on the Environment*

11 294. EPA’s additional hurried assessments, and the mitigations based
 12 on them, like the prior registrations, were not supported with substantial
 13 evidence and will not prevent adverse effects on the environment. A few
 14 examples are explained below.

15 *Volatility*

16 295. For instance, EPA’s volatility control measures are based on
 17 small field studies, and the EPA admits that it “cannot definitively exclude”
 18 volatility damage from real-world applications.

19 *Runoff*

20 296. Despite learning more about how dicamba in runoff water can
 21 damage off-field plants many days after application, EPA has still failed to
 22 collect sufficient data on this important impact, or assess and mitigate the
 23 combined effects of concurrent dicamba exposure via spray drift, volatility,
 24 and runoff.

25
 26 ⁸¹ EPA, *Dicamba Incident Report*, *supra* n. 59, at 45.

27 ⁸² *Id.* at 46.

1 *Environmental Damage*

2 297. Despite reports of millions of trees damaged by dicamba drift,
3 and the fact that long-lived trees in dicamba use areas are exposed
4 repeatedly over the season and over years to spray and vapor drift, EPA has
5 collected only a single study on the subject, involving what appears to be a
6 one-time dicamba exposure.

7 *Failure to Comply with the Endangered Species Act*

8 298. For the third time, EPA managed to circumvent consultation
9 with expert agencies regarding the Registration Actions. Despite documented
10 damage, lack of analysis, and potential harm to hundreds of endangered
11 plants and animals and their critical habitats, EPA made the unprecedented
12 finding, again, that these uses would have “no effect” on all but one species
13 and their designated critical habitat. EPA’s “no effect” determination also
14 violates its substantive duty to ensure against jeopardy and destruction or
15 adverse modification of designated critical habitat.

16 299. As in 2016 and 2018, EPA arrived at this conclusion by
17 substituting the less protective standards under FIFRA in place of the ESA
18 standards in its 2020 Ecological Assessment.⁸³ Instead of determining
19 whether the Registration Actions meet the low ESA “may affect” threshold,
20 EPA’s flawed methodology only evaluated whether exposing species or critical
21 habitat to dicamba exceeds EPA’s self-determined “level of concern” under
22 the FIFRA standard. *Id.*

23
24
25 ⁸³ EPA, *Dicamba DGA and BAPMA salts – 2020 Ecological Assessment*
26 *of Dicamba Use on Dicamba-Tolerant (DT) Cotton and Soybean Including*
27 *Effects Determinations for Federally Listed Threatened and Endangered*
28 *Species* 63 (Oct. 26, 2020) [hereinafter 2020 Ecological Assessment].

1 300. EPA began making its “no effect” determination for hundreds of
2 species by unlawfully constricting the action area assessed to sprayed farm
3 fields. EPA did so by relying on Use Data Layers (UDLs) to assess where
4 there is overlap with listed species or critical habitat. *Id.* at 19. However,
5 these UDLs only include areas within the 34 states where there is data that
6 cotton or soybeans have actually been grown in the past, as compared to the
7 authorized future use in the Registration Actions.

8 301. Then, in only the 287 counties where endangered plants grow
9 near the fields (as opposed to the thousands of counties covered by the
10 approval), EPA required an in-field 57-foot omnidirectional setback and a
11 310-ft downwind setback. In those select counties, EPA determined that the
12 “action area” is limited to the edge of the UDL areas based on an
13 unsupported assumption that dicamba will not leave the field. *Id.* at 72. In
14 the majority of counties where cotton and soybean have been grown in the
15 past, EPA extended the action area beyond the fields by 98 feet, despite
16 EPA’s knowledge that dicamba drifts hundreds of feet and likely can be
17 misplaced miles from the field due to volatility. *Id.*

18 302. EPA further constricted its overlap analysis by limiting the
19 species range and critical habitat locations. EPA started with a list of species
20 and critical habitat in the 34 states labeled for use, but then limited its GIS
21 layer by focusing only on listed non-monocot plants and listed species that
22 have an obligate relationship to non-monocot plants. *Id.* at 72. In addition,
23 EPA only identified counties that had a greater than 1% overlap of species
24 range or critical habitat within the already-restricted action area. *Id.*

25 303. Based on the unlawfully constricted action area, EPA concluded
26 that no endangered or threatened species would be within the action area,
27
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1 even though EPA had previously found overlap of 812 species,⁸⁴ other than 23
 2 listed species that have an obligate relationship with non-monocot plants. *Id.*
 3 at 72-73. EPA does not explain how it eliminated some species from the
 4 action area that it previously found would be on the treated fields
 5 themselves, such as the Florida panther, nor how EPA eliminated species
 6 that rely on plants in a non-obligate fashion (facultative) and all other
 7 endangered or threatened species that may occur within the already-
 8 constricted action area, including mammals, birds, reptiles, terrestrial-phase
 9 amphibians, terrestrial invertebrates that are at risk. *Id.* at 64, 72.

10 304. Even with EPA's analysis limited to species with an obligate
 11 relationship to plants, the list remains under-inclusive. EPA specifically
 12 states that Karner blue butterfly has an obligate relationship with wild
 13 lupines, but claims the species range does not overlap with the action area,
 14 despite butterflies being prevalent in counties with a lot of soybean acreage
 15 in Wisconsin and lupines being common in areas adjacent to agricultural
 16 fields.⁸⁵ The FWS Environmental Conservation Online System (ECOS),
 17 where EPA purports to get the species' range info from,⁸⁶ reports that the
 18 Karner blue butterfly overlaps with roughly one third of the state of
 19
 20

21 ⁸⁴ EPA, *Risk Assessment in 16 states*, *supra* n. 9, at 4.

22 ⁸⁵ FWS, *Karner Blue Butterfly Range in Wisconsin*,
 23 https://www.fws.gov/midwest/endangered/permits/hcp/kbb_wi/kbbWIRange_map.html;
 24 USDA, *Soybeans: Planted Acreage by County*,
 25 https://www.nass.usda.gov/Charts_and_Maps/Crops_County/sb-pl.php;
 26 USDA, *Wisconsin Ag News Acreage* (June 30, 2020),
 27 https://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Crops/2020/WI-Acreage-06-20.pdf

28 ⁸⁶ 2020 Ecological Assessment at 22.

1 Wisconsin – mainly in counties that grow lots of soybeans and are likely to
2 use dicamba.⁸⁷

3 305. In assessing the species themselves, EPA’s assessment used
4 several “endpoints” or “thresholds,” which revealed species that did not meet
5 its FIFRA standard of “no unreasonable effect” but do meet the ESA
6 consultation standard of “any effect.” For example, to determine acute effects
7 to animals, EPA used the “lethality-based” endpoint of the median lethal dose
8 or concentration (LD50 or LC50), which is the amount of a chemical that kills
9 50% of the exposed animals.⁸⁸ As another example, EPA determined that
10 aquatic species would be exposed to dicamba based on the estimated
11 environmental concentrations (“EEC”) of dicamba that would be found in the
12 water column, such as 47.9 µg a.e./L 1-in 10-year Daily Average EEC for
13 soybean and 29.6 for cotton. *Id.* at 24.

14 306. For mammals and birds (which also serve as a proxy for reptiles
15 and terrestrial-phase amphibians), EPA determined that these species could
16 be exposed to dicamba based on dietary and dose-based EECs that include
17 250 mg of dicamba/kg-diet in short grass, up to 280 mg of dicamba/kg-body
18 weight for small birds, and up to 230 mg of dicamba/kg-body weight of small
19 mammals. *Id.* at 27. Birds and mammals will also be exposed to dicamba
20 through vapor and spray inhalation. *Id.* at 28.

21 307. In addition, for plants, EPA determined that “there are no
22 discernible effects” if the effects are below a threshold of 10% visual signs of
23 injury (“VSI”) or 5% height reduction. *Id.* at 17.

26 ⁸⁷ FWS, *Karner Blue Butterfly*, <https://ecos.fws.gov/ecp/species/6656>.

27 ⁸⁸ 2020 Ecological Assessment at 30.

1 308. Even based on these non-protective thresholds and endpoints,
2 EPA determined that there is risk to mammals, birds, reptiles, terrestrial-
3 phase amphibians, terrestrial invertebrates, and terrestrial plants. *Id.* at 64.

4 309. However, EPA only made an effects determination assessment
5 for the 23 species that it assumed would be physically on the treated fields,
6 continuing to use the same endpoints and thresholds, but “refined” based on
7 the species body size and food consumption, to reach “no effect”
8 determinations for each of them. *Id.* at 76-110.

9 310. For example, EPA determined “no effect” for 22 of the 23 species
10 because the Risk Quotient (RQ) did not exceed the arbitrary LOC of 1.0, for
11 example: Gunnison sage grouse RQ of 0.20; Mississippi sandhill crane RQ of
12 0.14; jaguar RQ of 0.39; Indiana bat RQ of 0.62; Ozark bat RQ of 0.64; Florida
13 bonneted bat RQ of .80; Virginia big-eared bat RQ of 0.63; ocelot RQ of 0.35;
14 jaguarundi RQ of 0.42; Mexican wolf RQ of 0.41; northern long-eared bat RQ
15 of 0.63. *Id.* at 83, 86, 97, 99, 100, 101, 103, 104, 105, 106. For the rusty
16 patched bumble bee, in addition to relying on RQ and LOC, EPA made the
17 unsupported assumption that even though both soybean and cotton are
18 attractive to bumble bees, it would forage for food elsewhere. *Id.* at 110.

19 311. EPA also unlawfully revised the designated critical habitat by
20 placing additional restrictions on “may affect” determinations for critical
21 habitat. Rather than evaluating whether the registration actions may affect
22 critical habitat that overlaps with the dicamba uses, EPA limited its analysis
23 to the sprayed field and added the additional hurdles that the species itself
24 must use the agricultural field and have a “direct toxic effect concern” *and*
25 the action area must include dicamba effects on plants that are characteristic
26 of the critical habitat. *Id.* at 111.

1 312. Using this tactic, EPA concluded that only critical habitat for the
2 whooping crane met its criteria. However, EPA concluded that whooping
3 crane critical habitat would not be modified based on residues of dicamba
4 that “are not reasonably expected to be at a level raising concern for direct
5 effects to the whooping crane.” *Id.* This resulted in a “no effect” determination
6 for hundreds of critical habitats overlapping with the approved dicamba uses.

7 313. Of the 23 species that overlap with the action area, EPA only
8 granted a “May Affect, Not Likely to Adversely Affect” to one species, Eskimo
9 Curlew. *Id.* at 16; Ex. A at 28. On October 22, 2020, EPA received
10 concurrence from FWS on the determination. *Id.* Notably this single
11 concurrence decision is because the bird has not been seen in many decades
12 and is presumed extinct, not because EPA’s dicamba’s approval and the drift
13 it causes would be innocuous to the Curlew were it still in existence.

14 *New 2020 Mitigation*

15 314. EPA did update several 2020 use instructions, yet based several
16 of its updates on limited studies or assumptions. EPA expanded the
17 downwind in-field buffer to 240 feet (or 110 feet for soybeans if using a
18 qualified hooded sprayer), added calendar cutoff dates for applications (June
19 30th for soybeans and July 30th for cotton), and required use of a qualified
20 VRA/pH buffering adjuvant in the tank for every application.

21 315. EPA asserts that these mitigation measures will reduce adverse
22 environmental impacts, yet acknowledges its limited data to support these
23 measures.

24 316. For example, in order to reduce risks to non-target plants from
25 dicamba-contaminated runoff water, the Registration Actions prohibit
26 dicamba application “if soil is saturated with water or when rainfall that may
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1 exceed soil field capacity is forecasted to occur within 48 hours.”⁸⁹ Yet
 2 because EPA collected only a single registrant study on runoff, EPA is unable
 3 to quantify the degree to which this restriction would reduce non-target plant
 4 risk, which is dependent on a host of “site-specific conditions such as field
 5 size, amount of saturation in the field at the time of the event, soil type,
 6 hydrologic conditions, etc.,” which a single study cannot encompass.⁹⁰ Nor did
 7 EPA evaluate whether even trained applicators could reliably predict – 48
 8 hours in advance – whether or not a rainfall event “may exceed” soil field
 9 capacity, or assess the feasibility of enforcing such a label restriction.

10 317. Similarly, EPA found that hooded sprayers have “the potential to
 11 reduce spray drift,” so the Registration Actions allow in-field spray drift
 12 buffer zones of only 110 feet instead of 240 feet when hooded sprayers are
 13 used on soybeans. Ex. A, at 13. However, the EPA has a “limited number of
 14 field studies” to support this measure. *Id.* Moreover, EPA itself acknowledges
 15 that “buffers are poorly understood and making distinctions between FIFRA
 16 and ESA buffers based on application equipment [hooded or broadcast
 17 sprayers) could add an additional layer of complexity and unintentionally
 18 result in misuse.”⁹¹

19 318. EPA also notes differing levels of certainty in the effectiveness of
 20 its uniform cutoff date of June 30 intended to reduce volatility. EPA admits
 21 that “because the dates are the same in all 34 states and the meteorological
 22 data vary across these geographies, the magnitude of the protective certainty
 23 of cut-off dates is not uniform across the 34 states.” Ex. A, at 14. Compliance
 24

25 ⁸⁹ 2020 Ecological Assessment at 8.

26 ⁹⁰ *Id.* at 62.

27 ⁹¹ EPA, Dicamba Incident Report, *supra* n. 59, at 39.

1 with the cutoff date will be easier for growers in the southern States because
 2 of the longer growing season and planting at earlier calendar dates. The ease
 3 of compliance could also be influenced by crop progress, weed pressure, and
 4 weather. Despite these substantial uncertainties, the cutoff dates are still
 5 “expected to provide protection” from the effects of applications coinciding
 6 with temperatures favoring dicamba volatility. *Id.*

7 319. About 60% of damage incidents have been reported after June 30,
 8 the new cut-off date; however, symptoms of dicamba damage can take two
 9 weeks to show up.⁹²

10 320. EPA also expects VRAs (pH buffering adjuvant) to lower dicamba
 11 volatility. However, compliance with VRA usage requirements cannot be
 12 estimated because they “will have to be purchased separately by the
 13 applicator and added to the tank,” because “[r]etailers and distributors may
 14 stock only a small number [of VRAs] based on their client needs” and because
 15 “[t]he Agency has no information about the current availability of the
 16 required buffering agent.”⁹³ Additional compliance uncertainties arise from
 17 the “cost to the grower, and how difficult the product is to use.”⁹⁴

18 321. EPA also restricted spraying to the period from one hour after
 19 sunrise to two hours before sunset to “reduce applications being made at
 20 times of day when temperature inversions often occur.” Ex. A, at 24. To the
 21 contrary, University of Missouri weed scientists’ analysis of weather stations
 22 from seven states has shown that temperature inversions occur frequently in
 23 the afternoon and evening hours of May, June and July. Further, newer data
 24

25 ⁹² Hettinger, *supra* n. 16.

26 ⁹³ EPA, *Dicamba Incident Report*, *supra* n. 59, at 38.

27 ⁹⁴ *Id.*

1 from Tennessee and Missouri show that those inversions frequently occur
 2 earlier than two hours before sunset. University of Missouri Extension weed
 3 scientist, Mandy Bish, confirmed that “Sunset is not a good predictor in every
 4 location,” and these restrictions may not prevent spraying during inversions.

5 322. As in the 2018 registration, EPA included a 57 foot
 6 omnidirectional buffer to protect endangered species from off-target
 7 movement of dicamba. This restriction, again, contradicts EPA scientists’
 8 2018 recommendation to expand the action area to 443 feet (135meters) after
 9 scientists had confirmed the validity of a 2018 study, which revealed injury to
 10 dicamba-sensitive soybeans 136 meters from the edge of a treated field. We
 11 now know that these studies were discounted due to political reasons, which
 12 EPA admits “compromised the integrity of [its] science.” Memorandum from
 13 Michal Freedhoff to the Office of Chemical Safety and Pollution Prevention
 14 (Mar. 10, 2021). Yet EPA nonetheless again relied on the same unsound ESA
 15 buffer distance in the decision challenged here.

16 17 **EPA’s Reversal Regarding FIFRA Section 24(c)**

18 323. EPA administers FIFRA at the federal level, but states have an
 19 important role to play in the regulatory scheme. FIFRA section 26 specifies
 20 that states are to have primary enforcement responsibility if they
 21 demonstrate to EPA that they have adopted adequate regulations and
 22 enforcement mechanisms. *See* 7 U.S.C. § 136w-1. For example, FIFRA section
 23 11, 7 U.S.C. § 136i, authorizes EPA to certify state programs for the training,
 24 licensing, and certification of pesticide applicators as meeting federal
 25 standards. FIFRA section 23, 7 U.S.C. § 136u, allows EPA to enter into
 26 cooperative agreements with states to enforce the FIFRA training, licensing,
 27
 28

1 and certification requirements and to assure that the state programs in these
2 areas are consistent with federal standards.

3 324. The Registration Actions also include a reversal in decades of
4 EPA precedent. EPA has long allowed states to issue “special local needs
5 labels” on an annual basis, to address local agricultural, environmental, or
6 public health needs by granting “additional uses” to federal pesticide labels.
7 No longer, after this decision: EPA placed this rule reversal in a three-
8 sentence footnote, without first providing a notice and comment period.

9 325. The footnote for the first time now prohibits states from
10 “impos[ing] further restrictions on the dicamba products, or any other
11 federally registered pesticides” through Section 24(c) of FIFRA. Ex. A, at 20
12 n.19. Thus, the decision goes far beyond the three products being registered,
13 and covers state restrictions on any and all pesticides.

14 326. Instead, states must now impose restrictions under Section 24(a),
15 which allows states to regulate federal pesticides through state legislatures
16 or rulemaking procedures: a time-consuming and often political process that
17 can take years.

18 327. Section 24(c) allows states to “provide registration for additional
19 uses of federally registered pesticides formulated for distribution and use
20 within that State to meet special local needs in accord with the purposes of
21 this Act.” 7 U.S.C § 136v(c)(1).

22 328. For nearly three decades, EPA has interpreted Section 24(c) as
23 permitting states to “impose more restrictive measures” to federal labels, and
24 that is what states have done. In 1996, the EPA formalized this
25 interpretation and published it as a guidance for states.⁹⁵

26
27 ⁹⁵ EPA, *Guidance on FIFRA 24(c) Registrations*, supra n. 6.

1 329. FIFRA 24(c) labels allow state lead agencies to be nimble, timely,
2 practical, and appropriately responsive in quickly setting mitigation
3 measures beyond the federal label. Every state is different, and one-size-fits-
4 all mitigation measures on federal labels do not take into account possible
5 unique or special local conditions, which may increase risks. States have
6 specialized knowledge of conditions within their state. They are in the best
7 position to identify deficiencies in federal labels and identify necessary
8 modifications to enable the product to be used legally at the local level while
9 minimizing the potential risks of harm to man and the environment. They
10 are in the best position to respond to additional data and feedback in a timely
11 manner.

12 330. Specifically, in the dicamba context, as discussed *supra*, many
13 states had applied the provision to positive effect, reducing drift complaints,
14 as detailed above, setting cutoff dates, requiring training, and other
15 restrictions.

16 331. For example, following the 2017 growing season numerous states
17 responded to EPA's inadequate registration by issuing FIFRA 24(c) special
18 local needs labels that added further restrictions for 2018.⁹⁶ Iowa required an
19 additional special dicamba training for applicators. Minnesota prohibited
20 spraying after June 20 and when field or forecasted high temperatures
21 exceed 85°F. North Dakota set a cutoff date of June 30, as well as an 85°F
22 limit and numerous other restrictions, while Tennessee permitted spraying
23 only between 7:30 am and 5:30 pm, and required hooded sprayers for
24 applications from July 15 to October 1.

25
26 ⁹⁶ Sonja Begemann, *States Tighten Dicamba Regulations* (Feb. 8, 2018),
27 <https://www.agprofessional.com/article/states-tighten-dicamba-regulations>.

1 332. Following the 2018 growing season, numerous states again rolled
 2 out 24(c) labels to place additional restrictions for the 2019 growing season.⁹⁷
 3 Illinois set a cut-off date of June 30, 2019 for spraying dicamba-resistant
 4 soybeans, prohibited application when the wind is blowing towards adjacent
 5 residential areas, added a downwind buffer between the last treated row and
 6 the nearest edge of any Illinois Nature Preserves Commission site, as well as
 7 several other restrictions. The Minnesota, North Dakota, and South Dakota
 8 Departments of Agriculture also set cutoff dates for dicamba application:
 9 June 20, 2019 in Minnesota and June 30, 2019 in North and South Dakota.

10 333. When it initially raised the specter of a rule change, EPA agreed
 11 on the importance of flexibility for states and assured that any changes on
 12 the interpretation of 24(c) would be subject to APA notice and comment
 13 rulemaking. However, in the 2020 Registration Actions overturning this
 14 guidance, EPA did not undertake any public comment.

15 334. The reversal will prevent the majority of states from
 16 implementing critical local special needs restrictions for the 2021 growing
 17 season (and other future growing seasons).

18 335. The remaining alternative route under FIFRA 24(a), adding
 19 mitigation measures through formal rulemakings or legislative processes, can
 20 take years while in the meantime, unacceptable non-target damage could
 21 occur. States do not often use FIFRA 24(a) because decisions during the
 22 growing season need to be made swiftly, to adapt and adjust to changing
 23 conditions. States will not have sufficient time.

24
 25 ⁹⁷ Sophie Watterson, *The State of Dicamba Regulation in the U.S. and*
 26 *Missouri* (May 5, 2020), [https://moenvironment.org/the-state-of-dicamba-](https://moenvironment.org/the-state-of-dicamba-regulation-in-the-u-s-and-missouri/)
 27 [regulation-in-the-u-s-and-missouri/](https://moenvironment.org/the-state-of-dicamba-regulation-in-the-u-s-and-missouri/).

1 336. Because of the footnote in the Registration Actions’ new
2 limitations, states are now deprived of providing these essential protections
3 to farmers and the environment.

4 **The 2021 Growing Season**

5 337. On December 21, 2021, EPA issued a report that acknowledged
6 dicamba drift damage to at least one million acres during the 2021 growing
7 season (the Report). Ex. H at 18. EPA found over one million reported
8 soybean acres damaged, as well as reported damage to sugar beets, rice,
9 sweet potatoes, peanuts, vineyards, cucurbits, vegetables, fruit trees,
10 cranberries, cotton, tree nurseries, timber, landscape plants, home gardens,
11 non-fruit trees, and native plant species. *Id.* at 43. Drift from these dicamba
12 products injured not only crop fields, but also over 160,000 acres of national
13 wildlife refuge lands, *id.* at 17, university research farms, cemeteries,
14 churchyards, state fish and game properties, state natural areas, city parks,
15 state parks, and county and state roads. *Id.* at 24. EPA admitted that this
16 widespread damage may have been underreported by as much as by 25-fold.
17 *Id.* at 9.

18 338. States agreed with these estimates. Numerous states reported
19 their worst year of dicamba drift yet, including Minnesota where incidents
20 doubled from the prior year, *see* Ex. I at 4, Kansas, *id.* at 6, and Missouri. *Id.*
21 at 7 (impacted acres increased).

22 339. The Report also admitted that many of these drift incidents
23 occurred in sixty-three counties with endangered species concerns,
24 “suggest[ing] the possibility that a ‘take’ could occur.” Ex. H at 5. EPA
25 reported nearly 300 dicamba drift damage reports in those vital counties,
26 despite EPA’s 2020 registration measures. *See* Ex. H at 17.

1
2 *Ineffective Label Restrictions*

3 340. EPA's reliance on many of the same label restrictions that
4 allowed "enormous and unprecedented damage," *NFFC II*, 960 F.3d at 1144,
5 in 2017 and 2018, as well as a handful of new restrictions resulted in "little
6 change in number, severity, or geographic extent of dicamba-related
7 incidents." Ex. H at 43.

8 341. EPA's Report detailed how, yet again, EPA's registrations failed
9 to provide feasible use instructions that farmers can actually follow in the
10 real world. EPA admitted the same problem with "product usability" in the
11 2020 registrations, *id.* at 33, and acknowledged state reports that applicators
12 did not adhere to cutoff dates by as much as four weeks. *Id.* at 34-35.

13 342. In South Dakota alone, roughly two-thirds of the reported
14 incidents of dicamba drift were directly tied to a label violation. *See id.* at 35.
15 And as EPA admitted, these use violations happened in spite of extensive
16 training designed to ensure that applicators implement EPA's control
17 measures. *Id.* at 37. EPA further admitted in the Report that the new
18 restrictions, such as the new calendar date cutoff, "may have further
19 increased difficulty in compliance by reducing the amount of time a grower
20 could lawfully apply over-the-top ... dicamba." *Id.* at 34.

21 343. States agreed with EPA's statements regarding the impossibility
22 of spraying the dicamba products under the current label restrictions. In
23 early September, EPA met with the Association of American Pesticide
24 Control Officials (AAPCO), which represents state pesticide control officials
25 in the development of policies regarding pesticide application, and states
26 repeatedly told EPA that "environmental conditions required on the label are
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1 so rare that it is impossible to follow,” Ex. I at 1, and described the label as
2 the “biggest, gnarliest label ever seen.” *Id.* at 9.

3 344. Specifically, state representatives explained that keeping
4 applications within certain weather conditions is not functional, *id.*, and that
5 temperature cut offs as detailed in the label are especially difficult in
6 southern states where the temperatures get high early in the year. *Id.* at 10.
7 Others explained that adhering to measures for cleaning would require
8 applicators to spend hours every day cleaning out their tanks, *id.* at 9, and
9 “there are simply not enough hours in a spray season to [spray dicamba]
10 legally.” *Id.* at 10. A representative from Minnesota expressed concern that
11 no applicator has been fully in compliance with the label since 2018. *Id.* at 9.

12 345. But feasibility aside, EPA’s Report also provided substantial
13 evidence that the label restrictions neither reduce volatilization nor prevent
14 spray drift. To the contrary, states reported that the majority of the hundreds
15 of incidents from last summer resulted from volatility. Ex. H at 6, 21 (e.g.,
16 Nebraska, North Dakota, Missouri, Arkansas). Several states reported
17 landscape level (“fence row to fence row”) damage despite applicators doing
18 their best to follow the labels. *Id.* at 21. State officials in Minnesota received
19 reports that “dicamba is everywhere” and continues to damage entire fields in
20 a pattern consistent with volatilization rather than drift. Ex. I at 4. Weed
21 scientists similarly reported entire soybean fields damaged with no difference
22 in severity across fields which is “clearly volatility.” Ex. J at 3 (statement of
23 Dr. Hager).

24 346. Numerous states including North Dakota, Tennessee, Ex. I at 1,
25 Missouri, *id.* at 7, and South Dakota, *id.* at 8, also reported that EPA’s new
26 requirement to use volatility reduction agents (VRAs) did not reduce
27 volatility. *See also* Ex. H at 37.

1 347. EPA's cutoff date for applying dicamba on soybeans, intended to
2 reduce volatility, also proved too late in the season for many states. For
3 example, incidents in Minnesota doubled from 2020 following Minnesota's
4 compliance with the federal cutoff date of June 30 instead of the cutoff date of
5 June 20 from the year prior. Ex. I at 4.

6 348. In addition to volatilization and the resulting vapor drift, EPA's
7 label restrictions also failed to prevent spray drift. EPA claimed its 110-foot
8 downwind buffer, and 310-foot buffer (or 240 feet for soybeans with a
9 qualified hood sprayer) with endangered species present, would render
10 incidents from spray drift minimal. Ex. H at 5. But both Texas, Ex. I at 6,
11 and Kentucky, *id.* at 3, reported ongoing problems with damage from spray
12 drift during the 2021 growing season.

13 *Underreporting*

14 349. The Report further admitted that incidents may have been
15 underreported by approximately 25-fold. Ex. H at 9; *see also id.* at 31
16 (registrant estimating underreporting rate of 20 percent or more based on
17 6(a)(2) letters).

18 350. State regulators' findings confirmed underreporting.
19 Representatives from states in which growers reported fewer incidents this
20 past summer explained that these incidents still occurred but just went
21 unreported. Ex. H at 21; *see also* Ex. I at 4-5 (Indiana, Minnesota, Ohio, and
22 Oklahoma representatives all confirm underreporting). A Nebraska state
23 representative estimated that for every acre of damage to soybeans reported
24 this past summer, 10-20 acres went unreported. Ex. I at 7.

25 351. For several states in the Midwest, experts and states explained
26 this underreporting actually increased in 2021 due to severe drought
27 intensifying visible crop damage and decreasing incident reporting. Ex. I at 1;
28

1 Ex. J at 1. Growers' insurance policies for drought damage disincentivized
2 reporting dicamba damage. Ex. J at 3.

3 352. The Report also confirmed that these incidents came from
4 specifically over-the-top dicamba exposure. The Report admitted that "while
5 some small number of reported dicamba-like incidents may be the result of
6 environmental stress or exposure to other pesticides, the Agency considers
7 the preponderance of incidents to be the result of dicamba exposure." Ex. H
8 at 6. For example, the Report explained that, given Indiana's restrictions,
9 applicators likely did not use non-over-the-top products, suggesting the
10 state's more than 130 incidents resulted from over-the-top dicamba products.
11 *Id.* at 34.

12 *Social Upheaval*

13 353. The Report also revealed that the 2020 registrations continued to
14 take a toll on the social fabric of rural communities. Reported social unrest
15 ranged from strained relationships with neighbors and vandalism all the way
16 to violent altercations and threats. Ex. H at 5. The representative from
17 Nebraska reported that growers with damaged crops in 2021 continued to
18 threaten "if the government didn't fix the problem they would take matters
19 into their own hands, 'just like what happened in Arkansas a few years ago,'"
20 referring to a fatal shooting that was caused by dicamba drift damage. Ex. I
21 at 10.

22 *Defensive Planting*

23 354. Reports from academics presented to EPA also confirmed that
24 defensive planting continued in 2021. Ex. J at 1.

25 *Harms to Endangered Species*

26 355. EPA's Report also found potential harms to endangered species.
27 Not only did EPA admit the 2020 registrations may have resulted in outright
28

1 “takes” to federally protected species in 63 counties, Ex. H at 5, but EPA also
 2 admitted it is “no longer certain whether over-the-top dicamba can be used in
 3 a manner that is protective of listed endangered species, critical habitats and
 4 non-target plants.”⁹⁸ Despite this admission, EPA is still just “reviewing
 5 whether over-the-top dicamba can be used in a manner that does not pose
 6 unreasonable risks to ... listed species and their designated critical
 7 habitats.”⁹⁹

8 356. EPA rejected amending the 2020 registrations to add further
 9 use restrictions—suggested by state agencies and experts—to curtail the
 10 widespread dicamba damage. EPA declined moving up the cutoff date for
 11 spraying dicamba because doing so would “preclude applications later in the
 12 season.” *See* Ex. H at 38. And even though EPA recognized that “[d]icamba
 13 volatilization ... increases at a greater rate at temperatures above 80-85
 14 degrees,” EPA also rejected imposing a temperature-based cutoff date,
 15 because doing so “would reduce the number of hours or days available to
 16 users to apply dicamba.” *Id.* at 38-39. EPA claimed that these mitigation
 17 measures are “infeasible” because they would prohibit farmers from spraying
 18 the dicamba products later in the season—the very purpose and benefit EPA
 19 claimed in issuing the 2020 Registrations. *See* Ex. H at 4 (explaining that
 20 these dicamba products are “for post-emergence” weed control).

22 ⁹⁸ Emily Unglesbee, *EPA Mulls Dicamba Changes*, Progressive Farmer
 23 (Dec. 7, 2021),
 24 <https://www.dtnpf.com/agriculture/web/ag/crops/article/2021/12/07/epa-weighs-changes-dicamba-use>.

25 ⁹⁹ EPA, *EPA Releases Summary of Dicamba-Related Incident Reports*
 26 *from the 2021 Growing Season* (Dec. 21, 2021),
 27 <https://www.epa.gov/pesticides/epa-releases-summary-dicamba-related-incident-reports-2021-growing-season>.

1 357. EPA also declined calls to cancel the Registrations because
2 growers may have already purchased dicamba-resistant seeds and the
3 registered dicamba products. *See* Ex. H at 6.

4 358. EPA pledged its commitment to help individual states restrict
5 dicamba spraying, despite admitting that many states lack the time and
6 capacity for formal rulemaking. Ex. H at 29.

7 **The Registration Amendments**

8 359. Following EPA's Report, Iowa and Minnesota worked with the
9 registrants to add additional restrictions on dicamba use. Registrants
10 proposed these restrictions as voluntary label amendments pursuant to 40
11 C.F.R. § 152.44.

12 360. On March 15, 2022, EPA approved the Registration
13 Amendments. *See* Exs. F, G, H. EPA's Registration Amendments require only
14 two additional use restrictions, and in only Minnesota and Iowa, two out of
15 the thirty-four states where EPA has authorized the spraying of the 2020
16 registered dicamba products, despite EPA's Report of extensive dicamba drift
17 damage across U.S. landscapes from the 2021 season.

18 361. Specifically, EPA moved up the cut-off date for dicamba spraying
19 over the top of dicamba-resistant crops in those two states, as well as
20 approved a prohibition on spraying when the temperature is over 85 degrees
21 in Minnesota. *See* Ex. E at 1 ("The amendment approved through this letter
22 includes additional, state-specific application date (Iowa) and application
23 date and temperature (Minnesota) restrictions intended to further reduce
24 volatility to minimize off-field movement of the active ingredient dicamba.");
25 Ex. F at 1; Ex. G at 1 (same).

26 362. The Registration Amendments did not address the myriad of
27 impacts to other states described in its December 2021 Report. EPA provided
28

1 no explanation as to why its additional use restrictions only apply to Iowa
 2 and Minnesota, or why it only added the temperature-based prohibition to
 3 dicamba use in Minnesota, other than those were the only measures in the
 4 only two states for which the registrants had proposed label amendments.¹⁰⁰
 5 As EPA recognized, the drift damage incidents reported by those two states
 6 account for less than half of the total number of drift incidents EPA received
 7 concerning summer 2021.¹⁰¹

8 363. Nor did EPA's Registration Amendments address difficulties with
 9 compliance, as described in its December 2021 Report. *See* Ex. H at 33-34.
 10 EPA did not explain how these very same the use restrictions it found
 11 infeasible and insufficient just months prior will prevent unreasonable effects
 12 on the environment in Minnesota and Iowa. *Id.* at 38 (rejecting earlier cutoff
 13 dates as "unusable"); *id.* (stating "unreasonably warm temperature may still
 14 occur before earlier cutoff date" leading to drift); *see also id.* ("temperature-
 15 based application cutoff ... is much less predictable" for users, and "may be
 16 less enforceable than a calendar-based cutoff date.").

17 364. The Registration Amendments also did not discuss the harms to
 18 federally protected species EPA found in its December 2021 Report. EPA
 19 cited approximately 280 reported dicamba drift incidents in counties where
 20 endangered species and/or their critical habits may be present, 34 of which
 21 occurred in Minnesota and 69 in Iowa. Ex. H at 5, 18. EPA announced it was
 22

23 ¹⁰⁰ Press Release, EPA Approves Label Amendments that Further
 24 Restrict the Use of Over-the-Top Dicamba in Minnesota and Iowa (Mar. 15,
 25 2022), [https://www.epa.gov/pesticides/epa-approves-label-amendments-
 further-restrict-use-over-top-dicamba-minnesota-and-iowa](https://www.epa.gov/pesticides/epa-approves-label-amendments-further-restrict-use-over-top-dicamba-minnesota-and-iowa).

26 ¹⁰¹ *See id.* ("EPA received approximately 3,500 dicamba-related incident
 27 reports from the 2021 growing season, including approximately 711 incidents
 28 reported in Minnesota and 528 incidents reported in Iowa.").

1 still “reviewing whether over-the-top dicamba can be used in a manner that
 2 does not pose unreasonable risks ... to listed species and their designated
 3 critical habitats.”¹⁰²

4 **Further Planned Developments**

5 365. On March 18, 2022, EPA received another request from
 6 registrant Bayer to amend the 2020 registration for Bayer’s XtendiMax
 7 product by adding additional use restrictions that would be applicable in
 8 counties where there are certain federally listed endangered or threatened
 9 plant species. EPA has not yet responded.

10 366. EPA plans to complete a registration review of all dicamba-based
 11 products to determine if they meet FIFRA’s standard for registration. *See* 7
 12 U.S.C. § 136a(g). During Fiscal Year 2023 (October 2022–September 2023),
 13 EPA anticipates issuing a proposed interim decision and finalizing it in the
 14 same year, depending on the volume of public comments received. Additional
 15 new or interim risk mitigations measures would be included in the proposed
 16 interim and interim decisions. *Id.* § 155.56.

17 367. EPA also plans to issue a Draft Risk Assessment for dicamba by
 18 the end of June 2022.¹⁰³

23 ¹⁰² Press Release, EPA Approves Label Amendments that Further
 24 Restrict the Use of Over-the-Top Dicamba in Minnesota and Iowa (Mar. 15,
 25 2022), [https://www.epa.gov/pesticides/epa-approves-label-amendments-
 further-restrict-use-over-top-dicamba-minnesota-and-iowa](https://www.epa.gov/pesticides/epa-approves-label-amendments-further-restrict-use-over-top-dicamba-minnesota-and-iowa).

26 ¹⁰³ Upcoming Registration Review Actions,
 27 [https://www.epa.gov/pesticide-reevaluation/upcoming-registration-review-
 actions](https://www.epa.gov/pesticide-reevaluation/upcoming-registration-review-actions) (enter “dicamba” into search field) (last visited May 16, 2022).

1 **Plaintiffs' Injuries**

2 368. Plaintiffs and their members are being and will be adversely
3 affected by the challenged Registration Actions: EPA's approval of novel and
4 increased uses of over-the-top dicamba on herbicide-resistant cotton and
5 soybean.

6 369. Plaintiffs and their members are concerned by the detrimental
7 impacts on farmers and the environment, including on endangered species
8 and their habitat, and on public health that has resulted and will continue to
9 result from the re-registration of over-the-top dicamba.

10 370. Plaintiffs' members are farmers, gardeners, and conservationists.
11 They live, farm, and recreate in the many locations where EPA has re-
12 approved over-the-top spraying of these dicamba products and where
13 applicators have and will spray the products.

14 *Farmers*

15 371. The approved uses of over-the-top dicamba injure Plaintiff
16 members' farm productivity, livelihoods, and environment, to the detriment
17 of their economic, socioeconomic, vocational, environmental, health, and
18 personal interests.

19 372. Many of Plaintiffs' farmer members grow vulnerable crops, such
20 as tomatoes, grapes, and conventional soybeans, which are at risk of dicamba
21 drift damage. Plaintiffs' farmer members will have to adjust their planting
22 season and choice of seed or crop or impose costly measures such as buffer
23 zones, in an attempt to avoid crop damage by the challenged dicamba uses.

24 373. Other Plaintiff members are gardeners that also grow vegetables,
25 fruits, herbs, and other crops that are at risk of dicamba drift damage. These
26 members are rural community members who enjoy the benefits of pollinators,
27 birds, and other wildlife that rely on vulnerable plants for food, nesting, or
28

1 breeding. They are at risk of dicamba damage to their crops, hedgerows,
2 gardens, and surrounding ecologically important flora.

3 374. EPA's registration of over-the-top dicamba use has already
4 caused unprecedented damage to farmers and gardeners' crops and plants
5 across millions of acres. Some of Plaintiffs' members include farmers and
6 gardeners who live and grow crops that have already been damaged by drift
7 under EPA's previous registration and now will likely be damaged again
8 based on the new registration. The new registration will lead to increased use
9 and more frequent applications of over-the-top dicamba this year, making it
10 more likely that Plaintiffs' farmer and gardener members who cultivate crops
11 near areas of over-the-top dicamba application will suffer crop or land use
12 damage.

13 375. Such members may have to adjust their planting season, impose
14 costly measures such as buffer strips, or forego the planting of certain crops,
15 in order to try to reduce the negative impacts of over-the-top dicamba use
16 near their crops. The livelihoods and economic interests of CFS members who
17 cultivate and farm such crops are injured by the Registration Actions.

18 376. Plaintiffs' members also live, farm, and recreate in states that
19 were also previously protected in part by their states' FIFRA 24(c) labels and
20 use restrictions issued by states to protect farmers from damage. EPA's new
21 approval, which eliminates that state level authority and protection, thus
22 also injures them.

23 377. Plaintiffs' members are deeply concerned that EPA's registration
24 of the challenged dicamba uses will harm their farm productivity, livelihoods,
25 and environment, to the detriment of their economic and recreational
26 interests, especially without the 24(c) labels states previously imposed.

1 378. Plaintiffs' rural members are also injured by the social impacts of
2 the Registration Actions, the severe strain on social relations in farming
3 communities EPA's approvals have caused.

4 379. Plaintiffs' farmer members are also injured by the anti-
5 competitive, monopolistic impacts of the Registration Actions to the seed
6 market. EPA's re-registration will mean that many farmers in states where
7 Plaintiffs' members reside will have no choice but to switch to planting
8 dicamba-resistant soy and cotton in order to avoid economic losses due to
9 drift damage. This will further reduce the availability of non-dicamba-
10 resistant and non-genetically engineered seeds as local seed companies have
11 no incentive to sell such varieties due to reduced demand. Because of the
12 registration and forced defensive adoption, farmers find it increasingly
13 difficult to find non-dicamba-resistant soybean seeds.

14 380. Many of Plaintiffs' members are committed to reducing the use of
15 pesticides and endeavor to preserve the use of non-patented seed crops.
16 Because of Defendants' registration, they face a lose-lose choice of either
17 risking drift damage or losing their right to farm and safely plant the crops of
18 their choice.

19 381. Thus, the registration of over-the-top dicamba has, and will
20 continue to, injure Plaintiffs' members' interests and ability to obtain and
21 plant non-dicamba-resistant seeds, diminishing their ability to grow the
22 crops of their choice, and costing them additional time and money to locate
23 such seeds.

24 382. EPA's simultaneous elimination of the state level protections
25 under FIFRA 24(c) will exacerbate the anti-competitive, monopolistic injuries
26 as well by reducing state supplemental protections and thus increasing drift
27 harm as well as defensive adoption to avoid it.

1 383. Because of EPA's re-registration decision, Plaintiffs' members
2 may have to adjust their planting season and choice of seed or crop or
3 undertake costly measures such as buffer zones, in an attempt to avoid
4 dicamba drift crop damage.

5 384. For example, NFFC member John Zuhlke, an organic farmer and
6 owner of Little Shire Farm in South Dakota, experienced damage to his crops
7 from dicamba use by neighboring farms, particularly to his susceptible
8 tomato crop. As a result of this damage, he lost \$40,000 to \$80,000 worth of
9 sales during the 2018 growing season and his personal relationships with
10 neighbors suffered. He also experienced damage to the trees on his property,
11 particularly a maple tree. Because of the 2020 Registration Decisions,
12 continued use of dicamba on neighboring fields will result in further strained
13 relationships and economic losses.

14 385. Additionally, CFS member, Eric Pool, the owner of Berryville
15 Vineyards, is concerned about dicamba drift continuing to harm his vineyard
16 because grapes are sensitive to dicamba. He currently farms about ten acres
17 of wine grapes and berries in Berryville, Illinois in an area near dicamba-
18 resistant soybean crops where farmers rely heavily on herbicides. He has
19 suffered economic and labor costs resulting from extensive damage to his
20 vineyard and has filed several complaints with the Illinois State Department
21 of Agriculture.

22 *Conservationists*

23 386. Plaintiffs' members are also conservationists with aesthetic,
24 recreational, vocational, and personal interests in the protection of the
25 environment from the adverse impacts of dicamba spraying. Those members
26 are heavily involved with maintaining a healthy environment for many
27 species of animals, plants, and trees for recreational, aesthetic, and personal
28

1 reasons. The use of over-the-top dicamba will harm wild plants, trees,
2 animals, insects, and their native habitats, injuring Plaintiffs' members'
3 recreational and aesthetic interests. The intensive use of over-the-top
4 dicamba on crops compromises Plaintiffs' members' enjoyment of their local
5 environment and injures the aesthetic and recreational interests of members
6 in maintaining biodiversity and protecting sensitive species.

7 387. EPA's registration of these products will continue to cause a
8 skyrocketing increase in the spraying of dicamba by millions of pounds a
9 year. This dicamba will be sprayed in new ways, over the top of growing
10 crops, at new times of the year, and during summer. Through drift and
11 runoff, the dicamba will leave the farm fields and enter water and soil, as
12 well as expose native species.

13 388. Dicamba drift and consequential environmental harm will also
14 increase because of EPA's elimination of states' 24(c) authority to limit
15 spraying, which further injures Plaintiffs' members' conservation interests.

16 389. Plaintiffs' members are concerned about the adverse impacts to
17 the environment and to wild plants, trees, insects, birds, and other animals
18 from dicamba exposure because of EPA's decision. They are also concerned
19 about the effects on water quality and human health. They live and regularly
20 hike and recreate in and around areas now approved for dicamba spraying.

21 390. For example, CBD member John Buse is concerned about the
22 effects of pesticides and herbicides on the wellbeing and recovery of
23 threatened and endangered species, as well as on water quality and human
24 health. Specifically, he enjoys hiking and recreating near Indiana bat habitat
25 near Indianapolis, Indiana and observing bat colonies. He is concerned that
26 dicamba products will be routinely applied in Indiana and elsewhere in and
27
28

1 around Indiana bat habitat without regard to the species' conservation and
2 recovery.

3 391. Additionally, CBD member Kierán Suckling is concerned about
4 the effects of dicamba on the Southwestern willow flycatcher, the yellow-
5 billed cuckoo, and the Chiricahua leopard frog in Arizona. Specifically, she
6 enjoys hiking and recreating along Arizona's rivers and observing the
7 Southwestern willow flycatcher on the San Pedro River, Santa Cruz River,
8 Gila River, Bill Williams River, and Colorado River. She is concerned that
9 dicamba sprayed in the cotton fields in the uplands adjacent to each of these
10 rivers will harm or kill the flycatcher through direct spraying, runoff, or drift.
11 She has similar concerns about the yellow-billed cuckoo and the Chiricahua
12 leopard frog, which she also enjoys observing on her regular hikes.

13 *Organizational Injury*

14 392. In addition to the injury to its individual members, the
15 registration decision also adversely injures Plaintiffs' organizational
16 interests. *See supra* ¶¶ 30-38. Each organization has a mission dedicated to
17 protecting the environment and/or farmers from the adverse impacts of
18 industrial agriculture, including specifically pesticides. EPA's 2020
19 Registration Actions caused Plaintiff organizations to continue to divert
20 resources from addressing other pesticides to focus on the harms and injuries
21 caused by the over-the-top uses of dicamba on dicamba-resistant cotton and
22 soybean.

23 *Failure to Hold Notice and Comment*

24 393. Plaintiffs and their members are also injured by EPA's refusal to
25 hold notice and comment on the challenged decision. EPA's refusal deprived
26 Plaintiffs and their members of their procedural rights under the APA and
27 FIFRA to formally submit to the EPA comments on the proposed decision.

1 394. The registrations are still the first attempt at a lawful, novel new
2 use of dicamba, which should proceed through notice and comment. Also, the
3 decision made a rule change for all pesticides, eliminating states' protections
4 under FIFRA 24(c). The public and stakeholders such as Plaintiffs and their
5 members should have been given the formal opportunity to weigh in on such
6 a precedential decision and have the right to responses from EPA on their
7 critiques and consideration of the evidence they might present.

8 395. EPA's failure to hold public comment on the proposed decision
9 before issuing the challenged decision injures Plaintiffs' due process rights to
10 participate in proceedings affecting them. These procedural injuries are
11 directly connected to the substantive injuries to Plaintiffs' economic and
12 environmental interests explained above. Had EPA held public comment, it
13 might have reached a different decision in whole or part.

14 *Summary*

15 396. In sum, EPA's decision to register over-the-top dicamba for use
16 on cotton and soybean injures Plaintiffs' substantive and procedural
17 interests, their organizational interests in protecting agriculture and the
18 environment, as well as the aesthetic, recreational, economic, and personal
19 health interests of thousands of their members.

20 397. Plaintiffs' and their members' injuries will be redressed if and
21 when this Court declares the approval unlawful and vacates the Registration
22 Actions, halting the use and sale of the pesticide products.

FIRST CAUSE OF ACTION
Registration Not Supported by Substantial Evidence
Violation of FIFRA

398. Plaintiffs reallege and incorporate by reference Paragraphs 1 through 397.

399. To unconditionally register a pesticide, EPA must conclude among other things that the pesticide “will perform its intended function without unreasonable adverse effects on the environment” and that “when used in accordance with widespread and commonly recognized practice it will not generally cause unreasonable adverse effects on the environment.” 7 U.S.C. § 136a(C)(5).

400. FIFRA defines “unreasonable adverse effects on the environment” to mean “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.” 7 U.S.C. § 136(bb).

401. EPA’s registration conclusion is not supported by substantial evidence because the EPA understated some risks and costs and failed to address others.

402. These include:

1. understating the amount of dicamba to be sprayed and which will move off-field and enter the environment;
2. understating the damage from unreported drift;
3. failing to account for and quantify or even estimate the economic cost of crop damage from dicamba drift;
4. failing to account for the impossibility of complying with the label instructions in real world farming conditions;

5. failing to consider and assess the anti-competitive, monopolistic economic impacts of defensive dicamba-resistant seed adoption;
6. failing to consider and assess the social impacts of dicamba drift, crop damage, and defensive adoption on farming communities
7. Failing to consider and assess the impacts of dicamba drift, runoff, and rainwater on the environment, including drift damage to wild plants, trees, and other species;
8. failing to consider and assess the efficacy of the new label mitigations, such as hooded sprayers, a June 30 cutoff date, and the use of VRAs.

403. The EPA based its determination that the Registration Actions will not result in “adverse effects on the environment” on mitigation, in the form of label instructions. Yet EPA failed to study and account for the substantial likelihood that farmers and applicators, despite their best efforts, cannot follow the use directions in real world conditions. In previous seasons, numerous use directions, the same directions still in the Registration Actions, proved “difficult if not impossible to follow,” *NFFC II*, 960 F.3d at 1124, 1140-41. And that the additional measures EPA added will fare better is also not supported by substantial evidence. Despite the Ninth Circuit’s unambiguous instruction, EPA still has not studied the efficacy or feasibility in the real world of the measures upon which it is banking its decisions. EPA unlawfully made no effort to test the efficacy of the mitigation on which it is relying.

404. EPA played up the alleged benefits of the dicamba new uses, but left out any assessment of their true costs. The EPA based its Registration Actions on a flawed cost-benefit assessment that failed to take into account social and economic impacts, in violation of FIFRA. 7 U.S.C. § 136(bb).

1 Nowhere in the decision documents, including the two Benefits Assessments,
2 does EPA critically assess and quantify, farmers' financial losses as a result
3 of off-target drift or the anticompetitive effect of these crop systems.

4 405. EPA's cost-benefit assessment is also flawed because EPA failed
5 to assess the costs to non-agricultural systems, such as ornamental plants
6 and trees.

7 406. EPA failed to assess the intertwined social costs to farming
8 communities and agriculture of the renewed registration of these products.
9 The prior registrations have not merely caused financial hardship; they have
10 torn apart farming communities, pitting farmer against farmer.

11 407. All of these violations mirror the past unlawful registration
12 decisions for these products, and are errors of law the Ninth Circuit
13 specifically rebuked the EPA for making just this past June 2020.

14 408. EPA also allowed for political interference to compromise "the
15 integrity of [its] science" through "discount[ing] specific studies (some with
16 more robust data) used in assessing potential risks and benefits" and through
17 "discount[ing] scientific information on negative impacts in 2018."
18 Memorandum from Michal Freedhoff to the Office of Chemical Safety and
19 Pollution Prevention (Mar. 10, 2021). Many of these same compromised
20 studies also support the 2020 Registration Actions.

21 409. The Registration Actions are thus not supported by substantial
22 evidence in violation of FIFRA.

SECOND CAUSE OF ACTION
Violation of the Unconditional Registration Standard
Violation of FIFRA

410. Plaintiffs reallege and incorporate by reference Paragraphs 1 through 409.

411. The prior product registrations were conditional and only for 2 years; this time, EPA registered the products unconditionally and for 5 years.

412. As compared to conditional registration, unconditional registration imposes a different, higher standard, both in terms of the data it requires as well as its risk standard. Whereas for conditional, only “satisfactory data” is required, 7 U.S.C. § 136a(c)(7)(B), for unconditional, EPA must determine that “no additional data are necessary.” 40 C.F.R. § 152.112(c).

413. Whereas for conditional registration, EPA must only determine that the conditional new use will not “significantly increase the risk of any unreasonable adverse effect” beyond the already existing registration, 7 U.S.C. § 136a(c)(7)(B), an unconditional registration requires EPA to find that the pesticide “will perform its intended function without unreasonable adverse effects on the environment. 7 U.S.C. 136a(C)(5)(C). EPA must also find that the pesticide “when used in accordance with widespread and commonly recognized practice . . . will not generally cause unreasonable adverse effects on the environment.” 7 U.S.C. § 136a(c)(5)(D).

414. EPA failed to support with substantial evidence several prongs of the unconditional registration standard. First, EPA failed to consider and assess whether farmers are actually able to use the products for their “intended function” of weed control and still not cause unreasonable adverse effects on the environment. The use instructions remain “difficult to impossible” to follow in real world farming conditions, *NFFC II*, 960 F.3d at

1 1124, 1140-41, leaving farmers with the lose-lose choice of violating the use
2 restrictions and causing unreasonable adverse effects, or not using the
3 pesticide for its intended function. In order to meet the unconditional
4 registration standard, EPA must find that a pesticide can be sprayed *and*
5 accomplish its “intended purpose” in the real world of farming *without*
6 causing unreasonable adverse effects, not according to whatever
7 hypothetically EPA can think up to put on a label.

8 415. Second, EPA failed to support with substantial evidence that the
9 byzantine, impossible to follow mitigation measures—the use instructions for
10 the products on which EPA has predicated its finding of no unreasonable
11 adverse effects—constitute “widespread and commonly recognized practice[s]”
12 in farming. 7 U.S.C. § 136a(c)(5)(D). The unconditional registration standard
13 requires EPA to assess whether the pesticide products will cause
14 unreasonable adverse effects “when used in accordance with widespread and
15 commonly recognized practice,” not when used in *any scenario that EPA can*
16 *contemplate*, however unrealistic in real farming and weather conditions it
17 might be.

18 416. In fact, the 40-page use directions are not “widespread and
19 commonly recognized practice[s],” but instead measures that experts have
20 said were unlike anything they had seen previously.

21 417. An unconditional registration must determine there will be no
22 unreasonable adverse effects on the environment not from any type of
23 spraying, but rather from use that is normal and from use that will actually
24 allow farmers to complete the pesticide’s intended function. EPA failed to do
25 that and admits that such use beyond its unrealistic and unassessed label
26 mitigation will lead to harm.

1 418. The Registration Actions are thus not supported by substantial
2 evidence in violation of FIFRA.

3
4 **THIRD CAUSE OF ACTION**
5 ***Failure to Provide a Notice and Comment for New Uses***
6 ***Violation of FIFRA and the APA***

7 419. Plaintiffs reallege and incorporate by reference Paragraphs 1
8 through 418.

9 420. FIFRA requires that EPA “shall publish” in the Federal Register
10 a “notice of receipt of application” and a “notice of issuance” for every
11 pesticide product registration that utilizes a “new active ingredient” or that
12 entails a “changed use pattern.” 7 U.S.C. § 136a(c)(4); 40 C.F.R. § 152.102.

13 421. EPA held public comment for its initial 2016 registration of these
14 new over-the-top uses of dicamba, acknowledging that they were FIFRA new
15 uses. The Registration Actions and the products approved by them are still
16 subject to notice and comment because the decisions still allow for new uses.
17 The uses remain new because, while there was a prior approval, the Court
18 held it unlawful. Thus, this is still EPA’s first attempt at a *lawful* new use.

19 422. However, contrary to FIFRA and the APA, EPA did not provide
20 notice and comment opportunities to the public before issuing the
21 Registration Actions.

22 423. EPA’s failure to provide Plaintiffs with FIFRA-mandated notices
23 of application and issuance for the Registration Actions in the Federal
24 Register and its denial of public comment opportunities denied Plaintiffs and
25 the public the full ability to submit information and data to EPA through the
26 formal docket process. EPA would have had to consider that information, and
27 it may have convinced the EPA not to issue the new use registrations, or
28

1 restrict them. At a minimum, EPA would have had to respond to those
 2 comments to explain why it did not follow them. EPA has allowed the uses of
 3 products that cause unreasonable adverse effects and are harmful to
 4 Plaintiffs, while depriving them of these procedural rights.

5 424. EPA's failure to publish Federal Register notices as required
 6 under 7 U.S.C. § 136a(c)(4) and 40 C.F.R. § 152.102 establishes that the
 7 Registration Actions were approved "without observance of procedure
 8 required by law," in violation of the APA. 5 U.S.C. § 706(2)(D).

10 **FOURTH CAUSE OF ACTION**

11 ***Failure to Provide a Notice and Comment For Rulemaking*** 12 ***Violation of the APA***

13 425. Plaintiffs reallege and incorporate by reference Paragraphs 1
 14 through 424.

15 426. The APA requires agencies to provide for notice-and-comment
 16 before promulgating rules. 5 U.S.C. §§ 553(b), (c). A "rule" is "the whole or a
 17 part of an agency statement of general or particular applicability and future
 18 effect designed to implement, interpret, or prescribe law or policy." *Id.* §
 19 551(4).

20 427. The FIFRA 24(c) reversal by EPA is subject to notice and
 21 comment because it is a legislative rule that alters legal rights and has the
 22 force and effect of law. The rule change removed states' rights to grant
 23 "special local needs labels" to restrict pesticide uses beyond the federal label
 24 without going through FIFRA 24(a), which requires lengthy state law or
 25 rulemaking processes.

1 428. The decision conflicts with prior longstanding EPA policy, which
2 allowed states to issue further restrictions beyond federal labels to meet
3 special local needs under section 24(c) of FIFRA.

4 429. Despite being a part of particular product registration decisions
5 otherwise limited to three pesticide products, EPA declared that its new rule
6 change applied to all registered pesticides. This was the first time EPA
7 publicly announced the change.

8 430. As a substantive rule that has the force and effect of law, this
9 decision was subject to APA notice-and-comment rulemaking requirements.
10 However, contrary to the APA, EPA did not provide notice and comment
11 opportunities to the public before issuing the 2020 decision. Instead, it buried
12 it in a footnote.

13 431. Through its decision, EPA altered the established rights of states,
14 and the farmers that depend on state regulators to improve on flawed federal
15 oversight. In the past, for these products and for other products, through
16 FIFRA 24(c), states have been able to move quickly to address developing
17 harms, such as the unprecedented dicamba drift crisis of millions of acres in
18 2016-2020. Now, the lengthy state rulemaking and legislative procedures
19 required by FIFRA 24(a) will prevent states from issuing 24(c) labels for the
20 2021 growing season, or during any subsequent season, if and when timely
21 state action is required to address that season's needs, as it has in past years.

22 432. The decision is thus a concrete alteration of rights with binding
23 force of law.

24 433. The decision has the force and effect of a legislative rule because
25 it acts to amend an existing legislative rule.

1 1536(a), (d); 50 C.F.R. §§ 402.14, 402.13. The threshold for a “may affect”
2 determination and the required ESA section 7(a)(2) consultation is low. *See*
3 51 Fed. Reg. 19,926, 19,949 (June 3, 1986) (“Any possible effect, whether
4 beneficial, benign, adverse or of an undetermined character, triggers the
5 formal consultation requirement.”).

6 441. To evaluate whether its registration actions “may affect” any
7 listed species or critical habitat, EPA must examine all effects within the
8 registration’s “action area.” 50 C.F.R §§ 402.02. The action area includes “all
9 areas to be affected directly or indirectly by the Federal action, not merely
10 the immediate area involved in the action.”

11 442. As detailed above, the Registration Actions “may affect” listed
12 species and their critical habitat both directly and indirectly due to dicamba’s
13 long history of drift-related injury, its great volatility, and many plants’
14 extreme sensitivity to it.

15 443. Numerous protected animals such as the whooping crane feed in
16 sprayed crop fields, while hundreds of other endangered plants and animals
17 are threatened by volatility and drift either because they are found near
18 those fields or some endangered species are dependent upon plants near
19 those fields. For example, pollinators are dependent upon flowering plants,
20 which, when exposed to dicamba have showed a reduction in flower
21 expression and delayed onset of flowering and are less likely to be visited by
22 pollinators.

23 444. EPA even confirmed that hundreds of incidents took place in 63
24 counties where federally protected species are present during the 2021
25 growing season. Ex. H at 5. EPA now claims that, based on the widespread
26 dicamba drift, it is “no longer certain whether over-the-top dicamba can be
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1 used in a manner that is protective of listed endangered species, critical
2 habitats and non-target plants.”¹⁰⁴

3 445. These impacts satisfy the low threshold that the ESA, its
4 implementing regulations, and the Services’ Consultation Handbook set for a
5 “may affect” determination.

6 446. Despite these direct and indirect effects, EPA determined that
7 the Registration Actions will have “no effect” by unlawfully constricting the
8 action area using UDLs that only included areas within the 34 states where
9 there is data that cotton or soybeans have actually been grown in the past, as
10 compared to the authorized use in the Registration Actions.

11 447. EPA then limited this already constricted action area to the edge
12 of the UDL with an in-field 57-foot omnidirectional setback and a 310-ft
13 downwind setback in the 287 counties where endangered plants grow near
14 the fields (as opposed to the thousands of counties covered by the approval)
15 based on an unsupported assumption that dicamba will not leave the field.
16 EPA now admits that it arrived at a 57-foot omnidirectional buffer after
17 discounting EPA scientists’ 2018 recommendation to expand the action area
18 to 443 feet due to political reasons.

19 448. In the majority of counties where cotton and soybean have been
20 grown in the past, EPA extended the action area beyond the fields by only 98
21 feet, despite EPA’s knowledge that dicamba drifts hundreds of feet and likely
22 can be misplaced miles from the field due to volatility.

23
24
25 ¹⁰⁴ Emily Unglesbee, *EPA Mulls Dicamba Changes*, Progressive Farmer
26 (Dec. 7, 2021),
27 <https://www.dtnpf.com/agriculture/web/ag/crops/article/2021/12/07/epa-weighs-changes-dicamba-use>.
28

1 449. EPA then further unlawfully constricted the action area by
2 limiting the species range and critical habitat locations to those of only listed
3 non-monocot plants and listed species that have an obligate relationship to
4 non-monocot plants.

5 450. EPA does not have the authority to limit the action area based on
6 unsupported assumptions regarding which species will be directly or
7 indirectly affected.

8 451. EPA has violated the ESA by constricting the action area based
9 on data which only accounts for fields in which cotton and soy grew in the
10 past and limiting the species range and critical habitat locations to those of
11 only listed non-monocot plants and listed species that have an obligate
12 relationship to non-monocot plants, instead of all listed species that the
13 Registration Actions may affect.

14 452. EPA has further violated the ESA by setting a 57-foot
15 omnidirectional buffer in defiance of a 2018 study, recommending expansion
16 of the action area to 443 feet due to political reasons.

17 453. In its December 2021 Report, EPA acknowledged that that takes
18 can occur more than a mile from the treated field. Ex. H at 25.

19 454. EPA also unlawfully revised the designated critical habitat by
20 placing additional restrictions on “may affect” determinations for critical
21 habitat.

22 455. Rather than evaluating whether the registration actions may
23 affect critical habitat that overlaps with the dicamba uses, EPA limited its
24 analysis to the sprayed field and added the additional hurdles that the
25 species itself must use the agricultural field and have a “direct toxic effect
26 concern” and the action area must include dicamba effects on plants that are
27 characteristic of the critical habitat.

1 456. EPA does not have the authority to add additional restrictions to
2 critical habitat.

3 457. EPA has violated the ESA in adding additional restrictions,
4 resulting in a “no effect” determination for hundreds of critical habitats
5 overlapping with the approved dicamba uses.

6 458. EPA admitted in December 2021 that potential takes could have
7 occurred to far more endangered species than the 23 species it included in its
8 initial assessment. Ex. H at 18.

9 459. EPA thus violated the ESA in authorizing the Registration
10 Actions and the Registration Amendments without first completing
11 consultation with NMFS and FWS regarding an action that “may affect”
12 listed species and/or their critical habitat. EPA’s failure to consult with the
13 Services to insure that its action is not likely to jeopardize endangered or
14 threatened species or adversely modify critical habitat violates the ESA, 16
15 U.S.C. § 1536(a)(2), its implementing regulations; and the APA, 5 U.S.C.
16 §§ 701-706.

17 460. EPA also failed to comply with its substantive duty to “insure”
18 that the Registration Actions are “not likely to jeopardize the continued
19 existence of” any threatened or endangered species or cause “the destruction
20 or adverse modification” of critical habitat, in violation of ESA section 7(a)(2).
21 16 U.S.C. § 1536(a)(2).

22 461. EPA also failed to address in its Registration Amendments how
23 the added use restrictions in Minnesota and Iowa will address the hundreds
24 of incidents in counties with federally protected species.

25 462. EPA also failed to abide by the ESA’s Section 7 mandate that
26 “each agency shall use the best scientific and commercial data available” in
27 its decisions. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(g)(8).

*Registration Amendments Not Supported by Substantial Evidence
Violation of FIFRA*

464. Plaintiffs reallege and incorporate by reference Paragraphs 1 through 463.

465. To amend a pesticide registration under 40 C.F.R. § 152.44, registrants must submit materials sufficient for EPA to determine that the pesticide “will perform its intended function without unreasonable adverse effects on the environment” and that “when used in accordance with widespread and commonly recognized practice it will not generally cause unreasonable adverse effects on the environment.” 7 U.S.C. § 136a(C)(5); 40 C.F.R. § 152.50(f).

466. FIFRA defines “unreasonable adverse effects on the environment” to mean “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.” 7 U.S.C. § 136(bb).

467. EPA's Registration Amendments are not supported by substantial evidence because EPA failed to address adverse effects described in its December 2021 Report and contradicted its Report.

468. Specifically, these shortcomings include:

- a. failing to account for the millions of acres damages in the other 27 states that experiences damage in 2021;
- b. failing to consider and assess how the same use restrictions it found insufficient in its December 2021 Report will now prevent unreasonable effects on the environment in Minnesota and Iowa;

- c. failing to account for the impossibility of complying with the label instructions in real world farming conditions as it found in the December 2021 Report;
- d. failing to consider and assess the anti-competitive, monopolistic economic impacts of defensive dicamba-resistant seed adoption, as described by academics as continuing in 2021; and
- e. failing to consider and assess the continuing social impacts of dicamba drift, crop damage, and defensive adoption on farming communities, as described in the Report.

469. EPA based its determination that the Registration Amendments will not result in “adverse effects on the environment” on mitigation, in the form of added label instructions. Yet EPA failed to study and account for the substantial likelihood that farmers and applicators, despite their best efforts, cannot follow the use directions in real world conditions. In 2021, numerous use directions, the same directions made even more restrictive in the Registration Amendments, proved again “difficult if not impossible to follow,” *NFFC II*, 960 F.3d at 1124, 1140-41. And that the additional measures EPA added will fare better is also not supported by substantial evidence.

470. EPA based its approval of the Registration Amendments on the ecological risk assessment for the Registration Actions, which its December 2021 Report contradicted. Nowhere in the decision documents does EPA critically assess how the Registration Amendments will address the widespread damage, infeasible and ineffective mitigation measures, underreporting issues, social upheaval, and economic impacts found in the 2021 Report.

471. The Registration Amendments are thus not supported by substantial evidence in violation of FIFRA.

PRAYER FOR RELIEF

Plaintiffs respectfully request that this Court:

1. Declare that the Registration Actions, ~~and~~ dicamba product registrations (collectively, the Registration Actions), and Registration Amendments violate FIFRA and its implementing regulations;
2. Declare that EPA failed to support the Registration Actions, dicamba product registrations, and Registration Amendments with substantial evidence;
3. Declare that EPA violated the ESA by failing to complete consultation necessary to ensure that the Registration Actions are not likely to jeopardize the continued existence of listed species or destroy or adversely modify their critical habitat and by failing to address 2021 incidents in the Registration Amendments;
4. Declare that the Registration Actions and product registrations are new uses that required public notice and comment, and EPA's failure to provide notice and comment violations of FIFRA and the APA;
5. Set aside, or vacate, the Registration Actions, ~~and~~ product registrations, and Registration Amendments in whole or part as needed to stop their sale and use;
6. Prohibit any continued use of existing, already sold pesticide products registered under the now-vacated registrations;

- 1 7. Grant any other relief as may be necessary and appropriate to
- 2 stop the use and sale of pesticides authorized by the Registration
- 3 Actions before and after vacatur;
- 4 8. Declare that the Defendants' action in reversing longstanding
- 5 EPA rules regarding Section 24(c) of FIFRA for these products
- 6 but also all other pesticides without notice and comment was in
- 7 violation of the APA and was arbitrary, capricious, without
- 8 observance of procedures required by law, and therefore must be
- 9 set aside;
- 10 9. Declare that EPA, should it wish to alter Section 24(c), must
- 11 undertake notice and comment rulemaking;
- 12 10. Set aside, or vacate, the Registration Actions with regard to
- 13 Section 24(c);
- 14 11. Award Plaintiffs the costs of this litigation, including reasonable
- 15 attorneys' fees and expert witness fees; and
- 16 12. Grant such other relief as the Court deems just and proper.

1 Respectfully submitted this 7th day of June, 2022.

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