Submitted Via Certified Mail and Electronic Mail to:
The Honorable Thom Petersen
Commissioner, Minnesota Department of Agriculture
625 Robert Street North
Saint Paul, MN 55155-2538
Thom.petersen@state.mn.us

October 15, 2024

Commissioner Petersen:

The NRDC Action Fund, the Minnesota Center for Environmental Advocacy, and Minnesota Trout Unlimited (Petitioners) submit the following rulemaking petition pursuant to Minn. Stat. § 14.09. Petitioners call on the Minnesota Department of Agriculture (MDA) to remedy its longstanding violations of the Minnesota Environmental Rights Act and Minn. Stat. §§ 18B.01 et seq. [hereinafter, "Pesticide Control Act" or "PCA"], by adopting rules to protect Minnesota's environment and people from crop seeds coated with neonicotinoids and other harmful insecticides.

Neonicotinoid insecticides widely contaminate Minnesota's environment, presenting an ecological crisis and concerns for human health. These neurotoxic insecticides, commonly called "neonics," are best known as a leading cause of bee and broader pollinator declines that threaten the future of our food supply. But they also contribute to mass bird declines, hollow out aquatic ecosystems that support our fisheries, are linked with birth defects in white-tailed deer, and decimate soil microbial communities that farmers rely on to grow our food. They are also a driver of the disappearance of iconic insects like Monarch butterflies and Minnesota's state bee, the rusty patched bumble bee.

Equally concerning, neonics are commonly found in our bodies—including over 95% of pregnant women nationwide. This is cause for serious concern, as prenatal exposure to neonics is linked with a variety of developmental and reproductive harms.

Crop seeds coated with pesticides before planting, called "treated seeds," are likely the number one source of neonic contamination in Minnesota. Neonic-treated seeds are used on upwards of 14 million acres of farmland statewide and MDA has identified this enormous neonic use as the likely cause of bee kills and ecologically harmful neonic levels in water. Meanwhile, research continually shows that the most common neonic seed treatment uses provide no net economic benefits for farmers.

MDA has for years failed to address this enormous, harmful, and wasteful source of contamination on the mistaken belief that treated seeds are not "pesticides." The plain text of the Pesticide Control Act, however, makes clear that treated seeds are pesticides subject to MDA's regulatory authority. The legislature even underscored MDA's authority over treated seeds in 2023. Nevertheless, MDA maintains this gaping regulatory loophole.

MDA's failure to stem widespread neonic contamination infringes on a basic right guaranteed to all Minnesotans by the Minnesota Environmental Rights Act: the right to the "protection, preservation, and enhancement of air, water, land, and other natural resources." It also flouts MDA's duty pursuant to the Pesticide Control Act to prohibit pesticide uses that cause unreasonable harm to the environment.

For these reasons, MDA is legally obligated to address widespread, unnecessary neonic-coated seed use in Minnesota. MDA has a number of tools at its disposal to effect compliance, including control of neonic pollution through the registration of all pesticide-treated seeds products. However, as a programmatic approach may more efficiently and effectively address the issue, Petitioners call on MDA to amend Minn. R. 1505.1080 to develop a regulatory program tailored for treated seeds. The program should:

- Collect and make public accurate data regarding the nature and extent of treated seed use in Minnesota;
- Prohibit use of seeds coated with treatments that have not been registered by MDA for that purpose;
- Ensure farmers' ability to access popular seed hybrids that are not treated with insecticides; and
- Require written "verification of need" to rein in widespread use of treated seed in circumstances that do not benefit farmers.

Petitioners look forward to MDA's "specific and detailed reply" within 60 days. Minn. Stat. § 14.09.

I. Interests of Petitioners

The Minnesota Center for Environmental Advocacy (MCEA) is a Minnesota non-profit organization whose mission is to use law, science, and research to preserve and protect Minnesota's natural resources, wildlife, and the health of its people. For 50 years, MCEA has worked with citizens and government decision-makers to protect and improve the quality of Minnesota's natural resources by advocating for strong enforcement of environmental protection laws. As a public interest organization, MCEA has a purely public interest in this matter and no private interest in the outcome.

Minnesota Trout Unlimited (MNTU) is a nonprofit, nonpartisan conservation organization whose mission is to protect, restore, and sustain Minnesota's coldwater fisheries and the watersheds and groundwater sources that support them. For more than 60 years its members have advocated for clean water and land use practices that sustain healthy aquatic ecosystems. Aquatic insects provide essential food that supports trout fisheries. Significant declines in aquatic insect populations in Minnesota trout streams harm the trout fisheries and members' recreational use of these public waters.

NRDC Action Fund is a 501(c)(4) nonprofit organization that engages in advocacy and political activities that support the mission of the Natural Resources Defense Council (NRDC). NRDC is a 501(c)(3) nonprofit organization with offices in Chicago, IL; Washington, D.C.; New York, NY; Santa Monica, CA; San Francisco, CA; and Beijing, China. Its mission is to avert dangerous climate change, support healthy people and thriving communities, and conserve and protect nature and wildlife. NRDC's Pollinators & Pesticides team has for years used litigation and policy advocacy to rein in unnecessary pesticide use that imperils pollinators, decimates wildlife, and poses serious risks to human health. NRDC Action Fund is an affiliated but separate organization from NRDC. NRDC Action Fund currently has more than 1,300 members in Minnesota.

II. Neonicotinoid-Treated Seeds and Their Use and Impacts in Minnesota

A. Neonicotinoids Generally

Neonicotinoids are neurotoxic insecticides that are designed to permanently bind to and overstimulate nicotinic acetylcholine receptors in insect nerve cells, leading to collapse of the central nervous system.[1] First introduced in the 1990s, they are orders of magnitude more insect-toxic than many older insecticides.

Neonics' chemical properties make them uniquely adept at contaminating whole ecosystems. They are designed to be "systemic," meaning they are absorbed by plants and translocated throughout their tissue, making all parts of the plant insect-toxic. This means that neonics often contaminate pollen and nectar on which bees and other pollinators feed, creating a unique exposure route for these species. Moreover, neonics are both highly water-soluble and long-lasting in the environment.

Given these properties and their status as the most widely used insecticides in the world,[2] neonics now broadly contaminate soil, water, and plant life across large areas of the country.[3] Researchers estimate that neonics have made U.S. agriculture up to forty-eight times more acutely harmful to insects since their introduction.[4]

B. Treated Seeds are the Number One Source of Neonic Contamination

Proliferation of neonic-treated crop seeds over the past twenty-five years is responsible for an enormous increase in neonic use.[5] Neonic treated seeds are especially ubiquitous in corn, soybean, and other field crops that cover millions of acres of agricultural land in Minnesota. While more recent data is unavailable due to regulatory failures, data from 2011 suggest that 79-100% of corn hectares and 34-44% of soybean hectares nationwide were insecticide-treated, with numbers rapidly rising.[6] As of February 2024, "MDA estimates that almost all corn seed (8,219,197 acres total, 2022) and approximately 44% of soybean seed (7,726,724 acres total, 2022) planted in Minnesota in recent years was treated with at least one neonicotinoid insecticide" and that "treated row crop seed accounts for most neonicotinoid use in the state."[7]

---

[1] *See, e.g.,* National Pesticide Information Center, *Imidacloprid: Technical Fact Sheet* (last visited Oct. 15, 2024), https://bit.ly/2lQqh8W.

[2] Margaret R. Douglas & John F. Tooker, *Large-Scale Deployment of Seed Treatments Has Driven Rapid Increase in Use of Neonicotinoid Insecticides and Preemptive Pest Management in U.S. Field Crops*, Environ. Sci. Technol. (Mar. 20, 2015), https://bit.ly/2VWiTqk [hereinafter "Douglas & Tooker 2015"].

[3] *See, e.g.,* Michelle Hladik and Dana Kolpin, *First National-Scale Reconnaissance of Neonicotinoid Insecticides in Streams Across the USA*, Environmental Chemistry (Aug. 18, 2015), https://bit.ly/31Mse6o; *cf.* Thomas Wood & Dave Goulson, *The Environmental Risks of Neonicotinoid Pesticides: A Review of the Evidence Post 2013*, Envtl. Sci. Pollution Research Int'l, (Jun. 7, 2017), https://bit.ly/2Hpn8T5 [hereinafter "Wood & Goulson 2017"].

[4] Michael DiBartolomeis et al., *An Assessment of Acute Insecticide Toxicity Loading (AITL) of Chemical Pesticides Used on Agricultural Land in the United States*, PLoS One (Aug. 6, 2019), https://bit.ly/2Yr4Xc7.

[5] *See* Douglas & Tooker 2015, *supra* n. 2.

[6] *Id.*

[7] Letter from Thom Petersen, Commissioner, MDA, to Michael Regan, Administrator, U.S. Environmental Protection Agency, Sub: [MDA] comments on the U.S. Environmental Protection Agency's request for information and comment on Requirements Applicable to Treated Seed and Treated Paint Products in docket number EPA-HQ-OPP-2023-0420 located at www.regulations.gov (Feb. 9, 2024) [hereinafter MDA Letter], attached as Exhibit A.

Treated seeds are designed to take advantage of neonics' systemic property, allowing a growing plant to absorb neonics intended to protect the plant from early-season pests. But for a typical seed treatment, only 2-5% of the neonic active ingredient enters the target plant.[8] The remainder stays in the environment, where it can persist in the soil for years and migrate easily in rain and irrigation water to contaminate new soil, plants, and waters.

Research links neonic-treated seed use with extensive environmental contamination. Studies of neonic-treated corn, canola, and wheat have documented neonic residues in planted fields as well as in surrounding soils, surface waters, and plant life—including in the pollen and nectar of adjacent wildflowers.[9] During planting, clouds of abraded "seed dust" drifting across farm fields can kill bees and other beneficial insects.[10] After planting, rain and irrigation water carry neonic-laden runoff through ecosystems.[11] Substantial amounts of contaminated runoff have been documented leaving farm fields several months after planting and traveling considerable distances into wetlands and other water supplies.[12] Because neonics can persist in soil and plants for years, neonics often accumulate in areas of repeated use and leave long-lasting legacy contamination.[13] Indeed, in areas where neonic-treated seeds

---

[8] *See, e.g.*, Adam Alford & Christian Krupke, *Translocation of the Neonicotinoid Seed Treatment Clothianidin in Maize*, PLoS ONE 12(3) (Mar. 10, 2017), https://bit.ly/2xZtEgS [hereinafter "Alford & Krupke 2017"] (finding uptake of neonic active ingredient from corn seed treatments was < 2%); Robin Sur & Andreas Stork, *Uptake, Translocation and Metabolism of Imidacloprid in Plants*, Bulletin of Insectology (2003), https://bit.ly/3iN0TJt (finding uptake of imidacloprid from cotton, eggplant, potato, and rice seed treatments was <5%).

[9] *See, e.g.,* Cristina Botías et al., *Contamination of Wild Plants Near Neonicotinoid Seed-Treated Crops, and Implications for Non-Target Insects*, Science of the Total Environment (Oct. 1, 2016), https://bit.ly/2EdJG9i ("Our results suggest that neonicotinoid seed-dressings lead to widespread contamination of the foliage of field margin plants"); Bonmatin et al., *Environmental Fate and Exposure; Neonicotinoids and Fipronil* (Aug. 7, 2014), https://bit.ly/35iN3HX [hereinafter "Bonmatin 2014"] (summarizing evidence of neonics' long persistence in soils and describing multiple neonic exposure routes); Schaafsma et al., *Neonicotinoid Insecticide Residues in Surface Water and Soil Associated with Commercial Maize (Corn) Fields in Southwestern Ontario*, PLoS One (Feb. 24, 2015), https://bit.ly/32wMJqt [hereinafter "Schaafsma 2015"]; Main et al., *Widespread Use and Frequent Detection of Neonicotinoid Insecticides in Wetlands of Canada's Prairie Pothole Region*, PLoS One (Mar. 26, 2014), https://bit.ly/2CLoom3.

[10] Travis A. Grout et al., *Neonicotinoid Insecticides in New York State*: *Economic Benefits and Risk to Pollinators*, Cornell University 210-211 (Jun. 2020), https://cornell.app.box.com/v/2020-neonicotinoid-report [hereinafter "Grout 2020"] (discussing risks and harms to pollinators from neonic-treated seed dust).

[11] *See, e.g.,* Jesse Radolinski et al., *Plants Mediate Precipitation-Driven Transport of a Neonicotinoid Pesticide*, Chemosphere (May 2019), https://bit.ly/2OmbfT4 (documenting "that neonicotinoids can be transported from seed coatings both above and through the soil profile, which may enable migration into surrounding ecosystems."); Sara A. Whiting & Michael Lydy, *A Site-Specific Ecological Risk Assessment for Corn-Associated Insecticides* (Dec. 30, 2014), https://bit.ly/3elHw7i [hereinafter "Whiting & Lydy 2014"].

[12] Whiting & Lydy 2014, *supra* n. 11; Sara Whiting et al., *A Multi-Year Field Study to Evaluate the Environmental Fate and Agronomic Effects of Insecticide Mixtures*, Science of the Total Environment (Nov. 1, 2014), https://bit.ly/2ZNXp2p; Jesse Miles et al., *Effects of Clothianidin on Aquatic Communities: Evaluating the Impacts of Lethal and Sublethal Exposure to Neonicotinoids*, PLoS One (Mar. 23, 2017) https://bit.ly/3jsaciH, *with 2018 correction* Miles et al., PLoS ONE, https://bit.ly/2ZOSVZb.

[13] Bonmatin 2014, *supra* n. 9 ("the half-lives of neonicotinoids in soils can exceed 1,000 days"); Main et al., *Reduced Species Richness of Native Bees in Field Margins Associated with Neonicotinoid Concentrations in Non-Target Soils*, Agriculture, Ecosystems & Environment (Jan. 1, 2020) (detecting neonics in soils adjacent to both fields with

are the predominant neonic use, neonic pollution is often described as "ubiquitous"—with the chemicals appearing in fields with no history of neonic use as well as local water supplies.[14]

Data collected by MDA confirm that neonic-treated seeds are the leading source of harmful neonic contamination in Minnesota. As the agency explained in a recent letter to the U.S. Environmental Protection Agency (EPA), "two routine environmental sampling programs carried out by the MDA" reveal "significant relationships between the corn and soybean planting dates in Minnesota and surface water detections for neonicotinoids found on treated seed and the timing of bee kill investigations."[15] Contamination stemming from treated seed use likely has disastrous effects on Minnesota's ecosystems.

C. Neonic Contamination Causes Widespread Ecological Destruction

A large body of scientific research connects vast neonic contamination to substantial, tangible ecological harm. While neonics are perhaps best known as a leading cause of massive losses of honey bees and other insect pollinators, neonic contamination has also been linked to the devastation of fish populations and aquatic ecosystems, declines in bird populations, and harm to mammals like white-tailed deer. Indeed, EPA has predicted that its reapproval of neonic use is likely to push over 200 species toward extinction, including Minnesota's rusty patched bumble bee, Dakota skipper, Karner blue butterfly, prairie bush-clover, and more.[16]

1. Insect Pollinators

As insecticides, neonics are designed to kill insect pests. But an enormous and growing body of research shows that their widespread use is driving declines in beneficial insects like bees, butterflies, and other pollinators.

Neonics are lethal to bees in extraordinarily low amounts. In fact, a single corn seed treated with a neonic at approved rates can contain enough active ingredient to kill over 250,000 honey bees.[17] But

---

historic neonic use and those without historic neonic use; higher soil concentrations were correlated with lower native bee species richness), http://bit.ly/2OhMB6W [hereinafter "Main 2020"]; Schaafsma 2015, *supra* n. 9 (measuring pre-plant neonic levels as high as 7.5 µg/L in ditches outside a seeded field and 16.5 µg/L in puddles outside Ontario corn fields, indicating contamination from the previous use of seed treatments in the preceding growing season).

[14] Main 2020, *supra* n.13; Kathryn Klarich et al., *Occurrence of Neonicotinoid Insecticides in Finished Drinking Water and Fate During Drinking Water Treatment*, Environmental Science and Technology Letters (Apr. 2017), https://bit.ly/2PMRunk; Tamanna Sultana et al., *Neonicotinoid Pesticides in Drinking Water in Agricultural Regions in Southern Ontario, Canada*, Chemosphere (Jul. 2018), http://bit.ly/2JZawXI.

[15] Exhibit A at 4.

[16] EPA, Imidacloprid, Thiamethoxam and Clothianidin: Draft Predictions of Likelihood of Jeopardy and Adverse Modification for Federally Listed Endangered and Threatened Species and Their Critical Habitats (May 1, 2023), available at https://www.epa.gov/system/files/documents/2023-05/ESA-JAM-Analysis.pdf.

[17] The lethal dose (LD50) of imidacloprid for adult honey bees is .0038 ug/bee. *See* MDA, Pesticides and Bee Toxicity, https://www.mda.state.mn.us/protecting/bmps/pollinators/beetoxicity (last visited October 15, 2024). The label for Gaucho 600, a popular imidacloprid seed treatment, prescribes 1.34 mg of active ingredient per corn kernel to combat common pests. Bayer, Gaucho 600 Flowable Seed Treatment, available at https://www.cropscience.bayer.us/d/gaucho-600-flowable-seedgrowth, attached as Exhibit E. 1.34 mg = 1,340 ug. 1,340 ug / .0039 ug per bee = 343,589.744 bees.

even small, sublethal neonic exposures can ultimately cause individual or colony death in bees by weakening critical functions—such as an insect's immune system, navigational ability, stamina, memory, and fertility.[18] It is no surprise, therefore, that neonic contamination has been identified as a driver of bee declines over the past two decades.[19] Several studies link neonic-treated seed use with harms to pollinator populations and pollinator health,[20] and a recent Cornell University review of roughly a hundred exposure studies finds neonic-treated field crop seeds pose "substantial" risks to bees.[21]

Though much research focuses on neonics' harms to honey bees, Minnesota's more than 400 species of wild bees are likely at even greater risk. Research suggests that bumble bees are more susceptible to neonics than honey bees,[22] and no one is breeding and replacing these wild species. For example, the rusty patched bumble bee (*Bombus affinis*) has disappeared from 87 percent of its native range since the late 1990s[23]—closely corresponding with the proliferation of neonic use. The U.S. Fish and Wildlife Service listed the bee as an endangered species in 2017,[24] meaning that Minnesota's state bee is "in danger of extinction throughout all or a significant portion of its range," 16 U.S.C. § 1532(6). The U.S. Fish and Wildlife Service has identified neonics as a likely driver of the bee's precipitous declines, explaining:

> The results of overlaying B. affinis trend over neonicotinoid use trend provides a striking picture (Figure 5.1.), and hence, explains why neonicotinoid use has been implicated in the precipitous decline that occurred in the mid-1990s. Just as striking, however, is that as neonicotinoid use exponentially increased, a commensurate increase in the rate of decline of B. affinis was observed. . . . Given the evidence of neonicotinoid toxicity on bumble bees, it is unlikely that neonicotinoid use hasn't contributed to the loss of B. affinis populations.[25]

---

[18] *See* Lennard Pisa et al., *An Update of the Worldwide Integrated Assessment (WIA) on Systemic Insecticides. Part 2: Impacts on Organisms and Ecosystems*, Envtl. Sci. Pollution Research Int'l (Nov. 9, 2017), https://bit.ly/2HqqHwB [hereinafter "Worldwide Assessment Part 2"]; Daniel Kenna et al., *Pesticide Exposure Affects Flight Dynamics and Reduces Flight Endurance in Bumblebees*, Ecology and Evolution (Apr. 29, 2019), https://bit.ly/2Y2VlQo.

[19] *See See* Chiara Giorio, *An Update of the Worldwide Integrated Assessment (WIA) on Systemic Insecticides. Part 1: New Molecules, Metabolism, Fate, and Transport*, Envtl. Sci. Pollution Research Int'l (Jul. 15, 2017), https://bit.ly/2qVqciQ; Worldwide Assessment Part 2, *supra* n. 18; Wood & Goulson 2017, *supra* n. 3.

[20] *See, e,g.*, Main 2020, *supra* n. 13; N. Tsvetkov et al., *Chronic Exposure to Neonicotinoids Reduces Honey Bee Health Near Corn Crops*, Science (Jun. 30, 2017), https://bit.ly/3hx9EH0; Ben Woodcock et al., *Impacts of Neonicotinoid Use on Long-Term Population Changes in Wild Bees in England*, Nature Communications (Aug. 16, 2016), https://go.nature.com/3hxAFKi; Maj Rundlöf, *Seed Coating with a Neonicotinoid Insecticide Negatively Affects Wild Bees*, Nature (Apr. 22, 2015), https://go.nature.com/2CYNo9Q.

[21] Grout 2020 at 237-38, *supra* n. 10.

[22] F. Muth & A.S. Leonard, *A neonicotinoid pesticide impairs foraging, but not learning, in free-flying bumblebees*, Scientific Reports 9, 4764 (Mar. 18, 2019), available at https://www.nature.com/articles/s41598-019-39701-5 (stating that "[b]umblebees appear to be particularly sensitive to neonicotinoid pesticides" and collecting studies.)

[23] Endangered Species Status for the Rusty Patched Bumble Bee; Final Rule, 82 Fed. Reg. 3186, 3188 (Jan. 11, 2017)

[24] 82 Fed. Reg. 3186

[25] U.S. Fish and Wildlife Service, Rusty Patched Bumble Bee *(Bombus affinis)* Species Status Assessment (June 2016), available at https://ecos.fws.gov/ServCat/DownloadFile/120109 (last visited Oct. 15, 2024).

Neonics have also been linked with declining butterfly populations,[26] including Midwestern monarchs. Monarchs have been identified as a "candidate" for listing under the Endangered Species Act, 16 U.S.C. § 1531 et seq., meaning the species' precarious status warrants protection but regulatory action is precluded by other priorities.[27] Studies—including research from the University of Minnesota[28]—have long identified neonicotinoids as a threat to monarchs, especially larvae. And a new study identifies neonic contamination as the number one predictor of loss of monarchs and other butterflies in the Midwest from 1998 to 2014.[29] The authors "note that declines in total abundance and monarch abundance related to insecticide use begin in 2003, coincident with the initial deployment and rapid adoption of seed-treated neonicotinoids in corn and soybean plantings in the Midwest."

2. Aquatic Ecosystems

Neonics are also highly toxic to aquatic invertebrates that form the bases for aquatic and some terrestrial ecosystems. Contamination of surface waters can decimate these species, effectively hollowing out whole ecosystems. For example, in Japan, researchers connected the sudden and dramatic collapse of a fishery to the decimation of aquatic invertebrate populations from the introduction of neonics in nearby agriculture.[30]

These types of ecosystem-wide effects are likely happening here in Minnesota. MDA's own data show "elevated and concerning" neonic concentrations in Minnesota's surface waters. Exhibit A at 4. Levels routinely exceed EPA's chronic aquatic life benchmark (ALB) for harm to aquatic invertebrates. In the agency's own words, its "analysis strongly suggests that clothianidin and imidacloprid concentrations over the EPA's chronic ALB are sustained for periods more than 21 days in rivers and streams across western and southern Minnesota." *Id.* at 8. These elevated neonic concentrations are correlated with corn and soybean planting season, which "strongly suggests that neonicotinoids from seed treatments are the primary source of detections and are rapidly transported to rivers and streams after planting." *Id.* at 7.

Moreover, it is intuitive and well-documented that grab sampling like that conducted by MDA frequently underestimates the scale and magnitude of pesticide contamination.[31] According to one

---

[26] Matthew L. Forister et al., *Increasing Neonicotinoid Use and the Declining Butterfly Fauna of Lowland California*, The Royal Society Publishing: Biology Letters (Aug. 1, 2016), https://bit.ly/2o5P6i0 [hereinafter "Forister 2016"].

[27] Endangered and Threatened Wildlife and Plants; 12-Month Finding for the Monarch Butterfly, 85 Fed. Reg. 81,813, 81,813 (Dec. 17, 2020).

[28] MPR News, *Early research links insecticide, monarch butterfly deaths* (Feb. 10, 2015), available at https://www.mprnews.org/story/2015/02/10/butterfly-deaths-neonicotinoids (last visited Oct. 15, 2024).

[29] B. Van Deynze et al., *Insecticides, more than herbicides, land use, and climate, are associated with declines in butterfly species richness and abundance in the American Midwest*, PLoS ONE 19(6) (June 20, 2024), available at https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0304319.

[30] Yamamuro et al., *Neonicotinoids Disrupt Aquatic Food Webs and Decrease Fishery Yields*, 366(6465) Science 620-23 (Nov. 1, 2019), available at https://pubmed.ncbi.nlm.nih.gov/31672894/.

[31] *See, e.g.*, Xing et al., *Influences of sampling methodologies on pesticide-residue detection in stream water,* 64(2) Arch. Environ. Contam. Toxicol. 208-18 (Feb. 2013), available at https://pubmed.ncbi.nlm.nih.gov/23229193/ [hereinafter "Xing et al. 2013"].; Rabiet et al., *Assessing pesticide concentrations and fluxes in the stream of a small vineyard catchment. Effect of sampling frequency*, 158 (3) Environ. Pollution 737-48 (2010), available at https://hal.science/hal-00504970/document.

study, "[g]rab sampling significantly underestimated average concentrations of pesticide residues by 50% and maximum concentrations by 1 to 3 orders of magnitude."[32] It is especially concerning, therefore, that individual grab samples frequently exceed benchmarks for harm. Neonic contamination is almost certainly even more severe and pervasive.

3. Birds

Nearly a third of North American birds have disappeared in the past fifty years[33] and research demonstrates that neonic contamination has contributed significantly to these declines. In fact, research from the University of Illinois at Urbana-Champaign finds that:

> the increase in neonicotinoid use led to statistically significant reductions in bird biodiversity between 2008 and 2014 relative to a counterfactual without neonicotinoid use, particularly for grassland and insectivorous birds, with average annual rates of reduction of 4% and 3%, respectively. The corresponding rates are even higher (12% and 5%, respectively) when the dynamic effects of bird population declines on future population growth are considered.[34]

Birds suffer both direct and indirect harms from neonic-treated seed use. When farmers plant field crops, neonic-treated seeds are often left out in the open or the seeds are planted shallowly enough for birds to eat.[35] Eating just one such seed is enough to kill some songbirds.[36] And at nonlethal doses, neonic-treated seed ingestion can damage birds' immune and reproductive systems, cause rapid weight loss, and impair navigation and migration ability—all reducing the likelihood of their surviving and reproducing in the wild.[37] Neonic contamination also decimates invertebrates that many birds rely

---

[32] Xing et al. 2013, *supra* n. 31.

[33] K. Rosenberg et al., *Decline of the North American Avifauna*, Science 366(6461), 12-24 (Sep. 19, 2019), available at https://www.science.org/doi/10.1126/science.aaw1313.

[34] Li et al., *Neonicotinoids and Decline in Bird Biodiversity in the United States*, 3 Nature Sustainability 1027-35 (Aug. 10, 2020), available at https://www.nature.com/articles/s41893-020-0582-x.

[35] Charlotte Roy et al., *Neonicotinoids on the Landscape: Evaluating Avian Exposure to Treated Seeds in Agricultural Landscapes*, Minnesota Department of Natural Resources & Wildlife Restoration, https://bit.ly/337ENZK (documenting exposed neonic-treated seed in 25 percent of 48 fields sampled, and observing that ring-necked pheasants, Canada geese, American crows, various species of sparrows, and blackbirds, as well as white-tailed deer, rodents, rabbits, and raccoons eating the seeds).

[36] Pierre Mineau & Cynthia Palmer, *The Impact of the Nation's Most Widely Used Insecticides on Birds*, American Bird Conservancy, 3 (Mar. 2013), https://bit.ly/1jmQ7u0.

[37] Ana Lopez-Antia et al., *Imidacloprid-Treated Seed Ingestion Has Lethal Effect on Adult Partridges and Reduces Both Breeding Investment and Offspring Immunity*, Environmental Research (Jan. 2015), https://bit.ly/2kwUdWS; Margaret L. Eng et al., *A Neonicotinoid Insecticide Reduces Fueling and Delays Migration in Songbirds*, Science (Sep. 2019), https://bit.ly/2kGS1MA; Margaret L. Eng et al., *Imidacloprid and Chlorpyrifos Insecticides Impair Migratory Ability in a Seed-Eating Songbird*, Scientific Reports (Nov. 2017), https://go.nature.com/2QEWHA6.

on for food. For example, in the Netherlands, researchers linked declining populations of insect-eating birds to the introduction of extremely low neonic levels in water (only 20 parts per *trillion*).[38]

4. Mammals

Neonic-treated seeds can also harm mammals either through direct ingestion or contamination of food and water sources. For example, neonic exposures have been linked with birth defects in white-tailed deer, including decreased body and organ weight, decreased jawbone length, and higher death rates for fawns.[39] In 2021, the Minnesota Department of Natural Resources (DNR) detected neonics in the spleens of 94 percent of deer from all over Minnesota, with 64 percent containing levels associated with birth defects and other harms. These contamination rates rose sharply from 61 percent and 29 percent, respectively, just two years earlier. In other words, neonic contamination is occurring at levels expected to harm large mammals—and worsening.

***

Without more comprehensive data on the scope of neonic-treated seed use in Minnesota, it is difficult to quantify their full impact on Minnesota's environment. However, given current neonic-treated seed use patterns and their persistence, mobility, and known environmental harms—and MDA's own data showing concerning neonic contamination linked with treated seed use—their full impact is almost certainly severe and widespread.

D. Neonic Contamination Poses Risks to Human health

Neonic contamination also threatens the health of Minnesotans. Epidemiologic studies have linked neonic exposures during pregnancy or early life development to an elevated risk of adverse developmental or neurological effects including thyroid disruption and malformations of the developing heart and brain of infants and children.[40] In unpublished laboratory rodent studies sponsored by pesticide manufacturers and submitted to EPA, results of dosing pregnant rats with neonics are associated with statistically significant reductions in brain regions of the rodent offspring exposed prenatally and through lactation, even though the offspring were never directly dosed with neonics.[41] In addition to the research showing developmental risks to the human population and to test rodents, laboratory *in vitro* tests on ovary cells derived from rodents have reported that the cells can metabolize

---

[38] Hallmann et al., *Declines in Insectivorous Birds are Associated with High Neonicotinoid Concentrations*, 511 Nature 341-43 (Jul. 9, 2014), available at https://www.nature.com/articles/nature13531.

[39] E. H. Berheim et al., *Effects of Neonicotinoid Insecticides on Physiology and Reproductive Characteristics of Captive Female and Fawn White-Tailed Deer*, Scientific Reports (Mar. 14, 2019), https://go.nature.com/2Q1I9Zf. Surprisingly, in the study, deer in the control group—i.e., those purposely not exposed to neonics—still contained detectable levels of neonics in their organs, demonstrating the ubiquity of neonic contamination real world.

[40] Comment Submitted by Gary D. Hammer, President, Endocrine Society to EPA Regarding Its Proposed Interim Decisions for Several Neonicotinoid Pesticides (May 6, 2020), https://bit.ly/3cM0CU7; Andria Cimino et al., *Effects of Neonicotinoid Pesticide Exposure on Human Health: A Systematic Review*, Envtl. Health Perspectives (Feb. 1, 2017), https://bit.ly/2NVA1LR [hereinafter "Cimino 2017"].

[41] EPA, Data Evaluation Record, Imidacloprid, Study Type: Developmental Neurotoxicity Study – Rat (June 2004), available at https://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/pdf/129099/129099-0000-00-00a.pdf; EPA, Data Evaluation Record, Thiamethoxam, Study Type: Developmental Neurotoxicity Study – Rat, available at https://www3.epa.gov/pesticides/chem_search/cleared_reviews/csr_PC-060109_24-Oct-05_a.pdf.

imidacloprid into even more toxic byproducts.[42] Both these byproducts and the parent compound have been linked with toxic effects to rodent ovarian cells *in vitro*.[43] In summary, data from three lines of evidence – human populations, rodent toxicology studies, and in vitro cell assays – have linked neonic exposure with adverse impacts on growth and development, and suggest that neonics may metabolize in the body to even more toxic compounds.

Most recently, a peer-reviewed analysis of pesticide registrant-submitted developmental neurotoxicity studies "conclude[d] that perinatal exposure to neonicotinoids and their metabolites induces adverse, nicotine-like neurotoxic effects in rodent bioassays, and that the exposure limits set by EPA for human exposure are either not protective or not supported by available neurotoxicity data."[44]

These studies are particularly worrying given the pervasiveness of exposure. Monitoring by the U.S. Centers for Disease Control and Prevention (CDC) indicates that *roughly half* of the U.S. general population is exposed to neonics on a regular basis.[45] More recent research looked at neonic exposure among pregnant women, finding neonics in over 95 percent of the bodies of pregnant women tested nationwide, with levels highest in Hispanic women.[46] Neonic levels also increased over the course of the 4-year study. Taken together, these studies mirror the DNR deer data in showing neonic exposures worsening over time.

Contaminated food and water are likely the most common exposure sources. Where neonics contaminate drinking water sources, conventional chlorination treatment does not remove them without additional filtration.[47] Fruits, vegetables, and processed foods—including baby food—frequently contain neonics too.[48] Because neonics permeate treated foods, they cannot be washed off.

---

[42] Vasiliki Mourikes et al., Ovarian antral follicles metabolize imidacloprid *in vitro*, 196(2) Toxicological Sciences 229-237 (Nov. 28, 2023), available at https://pubmed.ncbi.nlm.nih.gov/37632782/.

[43] Vasiliki Mourikes et al., Imidacloprid and its Bioactive Metabolite, Desnitro-Imidacloprid, Differentially Affect Ovarian Antral Follicle Growth, Morphology, and Hormone Synthesis in Vitro, 11(4) Toxics 349 (Apr. 7, 2023), available at https://pubmed.ncbi.nlm.nih.gov/37112576/.

[44] Jennifer Sass et al., Neonicotinoid Pesticides: Evidence of Developmental Neurotoxicity from Regulatory Rodent Studies, 6 Front. Toxicol. (Oct. 1, 2024), available at https://www.frontiersin.org/journals/toxicology/articles/10.3389/ftox.2024.1438890/full.

[45] Maria Ospina et al., *Exposure to Neonicotinoid Insecticides in the U.S. General Population: Data from the 2015–2016 National Health and Nutrition Examination Survey*, Environmental Research (Sep. 2019), https://bit.ly/2YKLjmX; *see also* Go Ichikawa et al., *LC-ESI/MS/MS Analysis of Neonicotinoids in Urine of Very Low Birth Weight Infants at Birth*, PLoS One (Jul. 1, 2019), https://bit.ly/2nF2DNi (finding neonics in the urine of newborn babies, indicating that neonics pass from pregnant mother to developing fetus).

[46] J. Buckley et al., Exposure to Contemporary and Emerging Chemicals in Commerce among Pregnant Women in the United States: The Environmental influences on Child Health Outcome (ECHO) Program, Environ. Sci. Technol. 56(10), 6560-6579 (2022), https://pubs.acs.org/doi/10.1021/acs.est.1c08942.

[47] *See* Kathryn L. Klarich et al., *Occurrence of Neonicotinoid Insecticides in Finished Drinking Water and Fate During Drinking Water Treatment*, Envtl. Sci. and Tech. Letters (Apr. 2017), https://bit.ly/2PMRunk.

[48] *See, e.g.,* Olga Naidenko, *Neonic Pesticides: Banned in Europe, Common on U.S. Produce, Lethal to Bees*, Envt'l Working Group (Jul. 26, 2018), https://bit.ly/2EejbSx; Friends of the Earth, *Toxic Secret: Pesticides Uncovered in Store Brand Cereal, Beans, Produce*, http://bit.ly/2IlE26V (last visited Oct. 15, 2024).

E. Most Neonic Seed Treatments Fail to Provide Monetary Benefits

The vast majority of efficacy research on neonic seed treatments has focused on corn and soybean production, showing that these treatments provide little to no monetary benefits to farmers.[49] For example, a recent Cornell University review of hundreds of side-by-side North American field trials found that neonic-treated seeds produced "substantial" risks to pollinators, but "no overall net income benefit" compared with seeds not treated with insecticide.[50] An extensive field study in Canada published just weeks later found similar results.[51]

Despite their questionable value, the use of neonic-treated seeds is often near total in conventional field crops like corn.[52] This apparent market failure is, in part, explained by increased consolidation of seed and pesticide producers. For corn, farmers shopping for popular corn seed product lines generally have limited choices other than neonic-treated seeds.[53] Further, those providing agronomic advice on the wisdom of treated seed use increasingly have ties to seed and chemical manufacturers.[54]

These same market pressures are prevalent in Minnesota, where corn and soybean use predominate. And given research showing neonic-treated seeds' limited efficacy outside of the first few weeks after planting,[55] there is a concern that increasing neonic-treated seed use in Minnesota does not replace other existing pesticide uses; it simply adds to them.

---

[49] *See, e.g.,* Spyridon Mourtzinis et al., *Neonicotinoid Seed Treatments of Soybean Provide Negligible Benefits to US Farmers*, Sci. Reports (Sep. 9, 2019), https://go.nature.com/2p5leCP; Christian Krupke et al., *Planting of Neonicotinoid-Treated Maize Poses Risks for Honey Bees and Other Non-Target Organisms Over a Wide Area Without Consistent Crop Yield Benefit*, J. of Applied Ecol. (May 22, 2017), https://bit.ly/36aMZtD; Alford & Krupke 2017, *supra* n. 8.

[50] Grout 2020 at 236, *supra* n. 10.

[51] Jocelyn L. Smith et al., *Quantifying Early-Season Pest Injury and Yield Protection of Insecticide Seed Treatments in Corn and Soybean Production in Ontario, Canada*, Journal of Economic Entomology (Jul. 11, 2020), https://bit.ly/31BoMMB.

[52] Pierre Mineau, Neonicotinoids in California: Their Use and Threats to the State's Aquatic Ecosystems and Pollinators, with a Focus on Neonic-Treated Seeds (2020), attached as Exhibit B.

[53] *See* John F. Tooker, *Why It's Time to Curb Widespread Use of Neonicotinoid Pesticides*, The Ecologist (Jun. 27, 2018), https://bit.ly/30mQV9P.

[54] Major seed and chemical producers like Monsanto (now owned by Bayer) and Pioneer (now owned by Corteva Agriscience, formerly a unit of DowDuPont) have sales representatives, advisers, and licensed seed dealers located across the country. *See, e.g.*, Monsanto US Ag Products, "Rep & Dealer Locator," https://bit.ly/2k1BlPD (accessed Aug. 9, 2020). Pioneer, "Find Your Local Pioneer Team," https://bit.ly/2m20A56 (accessed Aug. 9, 2020).

[55] *See, e.g.,* Alford & Krupke 2017, *supra* n. 8 (two-year study of neonic residues in corn planting with neonic-treated seed finding "clothianidin concentrations followed an exponential decay pattern with initially high values followed by a rapid decrease within the first ~20 days post planting").

III. Regulation of Pesticide-Treated Seeds

A. Federal Regulation of Pesticides and the Treated Articles Exemption

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), 7 U.S.C. § 136 et seq., generally prohibits sale or use of "any pesticide" that is not first registered with EPA. The Act defines pesticides to include "(1) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest . . . ." 7 U.S.C. § 136(u). EPA must register a pesticide if the pesticide, among other requirements, does not cause "unreasonable adverse effects on the environment." *Id.* § 136a(c)(5).

FIFRA permits EPA to exempt certain classes of pesticides from registration and other requirements of the Act. Relevant here, EPA "may exempt . . . by regulation any pesticide which the Administrator determines . . . to be of a character which is unnecessary to be subject to [FIFRA] in order to carry out the purposes of [FIFRA]." 7 U.S.C. § 136w(b). EPA has used this authority to exempt "treated articles or substances," defined as any "article or substance treated with, or containing, a pesticide to protect the article or substance itself . . . , if the pesticide is registered for such use." 40 C.F.R. § 152.25. Although treated articles are not subject to the regulatory requirements of FIFRA, they are nevertheless clearly "pesticides" under the Act. *See* 7 U.S.C. § 136w(b) ("The administrator may exempt . . . by regulation any *pesticide* . . . ." (emphasis added)); 40 C.F.R. § 152.25 ("The *pesticides or classes of pesticides* listed in this section have been determined to be of a character not requiring regulation under FIFRA . . . ." (emphasis added)).

EPA applies this "treated article exemption" to treated seeds. In a 2003 "harmonization document" released in conjunction with Canada's Pesticide Management Regulatory Agency, EPA explained that pesticide-treated crop seeds constitute "pesticides" under FIFRA[56] but are exempted from regulation as "treated articles."[57] The agency reiterated this position in response to a recent petition, explaining its "longstanding position that pesticide-treated seeds are considered to be pesticides themselves . . . ."[58] Accordingly, though treated seeds are "pesticides," EPA does not register or otherwise directly regulate pesticide-treated seeds.

B. Minnesota's Regulation of Pesticides

The Pesticide Control Act provides that MDA is "the sole regulatory authority over the terrestrial application of pesticides, including, but not limited to, the application of pesticides to agricultural crops . . . ." Minn. Stat. § 18B.03. The PCA effectively adopted EPA's definition of "pesticide" under FIFRA,

---

[56] EPA, *Harmonization of Regulation of Pesticide Seed Treatment in Canada and the United States*, § 2.1 (Apr. 11, 2003), https://bit.ly/2Au0tGI, ("For the purposes of FIFRA, pesticide-treated seeds are considered to be pesticides themselves because they are a mixture of substances that are intended to prevent, destroy, repel or mitigate a pest.").

[57] *Id.* at § 2.1. Petitioners disagree with EPA's conclusion that this exemption applies.

[58] U.S. Environmental Protection Agency, EPA Response to the April 2017 Petition from Center for Food Safety and Others Relating to EPA Regulation of Pesticide-Treated Seed (Sep. 27, 2022), available at https://www.regulations.gov/document/EPA-HQ-OPP-2018-0805-0104 (attached as Exhibit C)

7 U.S.C. § 136(u),[59] defining pesticides to include any "substance or mixture of substances intended to prevent, destroy, repel, or mitigate a pest." *Id.* § 18B.01, subd. 18.

The PCA evinces the legislature's concern about pesticides' impact on the environment and charges MDA with numerous duties to mitigate those impacts. For example, MDA must "determine the impact of pesticides on the environment" and "cooperate with and assist other state agencies and local governments to protect public health, pollinators, and the environment from harmful exposure to pesticides." *Id.* § 18B.04(a)(1), (3). These duties highlight special concern about the impacts of pesticides on pollinators, surface waters, and groundwater. *See id.* § 18B.045 ("The commissioner shall develop a pesticide management plan for the prevention, evaluation, and mitigation of occurrences of pesticides or pesticide breakdown products in groundwaters and surface waters of the state."); *id.* § 18B.051 (creating a "Pollinator Research Account").

The PCA also imposes requirements for pesticide distribution and use that are designed to limit their harms. All pesticides generally must be registered with MDA, *id.* § 18B.26, and "must be applied . . . in a manner that will not cause unreasonable adverse effects on the environment within limits prescribed by this chapter and FIFRA," *id.* § 18B.07, subd. 1. Moreover, "[a] person may not use, store, handle, distribute, or dispose of a pesticide, rinsate, pesticide container, or pesticide application equipment in a manner . . . (1) that is inconsistent with a label or labeling as defined by FIFRA; (2) that endangers humans, damages agricultural products, food, livestock, fish, or wildlife; or (3) that will cause unreasonable adverse effects on the environment." *Id.* § 18B.07, subd. 2. The legislature reiterated these requirements with respect to treated seeds in 2023. Minn. Stat. § 18B.075. MDA has a mandatory duty to "administer, implement, and enforce" each of these requirements. *Id.* § 18B.03; *see id.* § 645.44, subd. 16 ("'Shall' is mandatory.").

MDA has on multiple occasions publicly highlighted the need for increased regulation of treated seeds. In 2016, MDA published a review of neonic uses in Minnesota. Recognizing the harms of neonic use to pollinators, the agency recommended several action steps; number one was to "pursue the creation of a Treated Seed program."[60] According to MDA, the program "would provide the State with the authority to regulate seeds treated with pesticides, fund research to develop need based recommendations for the use of seed treatments, and may require that untreated seeds and seeds treated at lower pesticide application rates are available in the market."[61]

Eight years later, no such treated seed program exists. In a letter to EPA in February of 2024, MDA highlighted the continued need for increased regulation of treated seeds, stating:

---

[59] The federal definition of pesticide originates from the definition of "insecticide" first enacted in 1910. 36 Stat. 331 (1910), available at https://tile.loc.gov/storage-services/service/ll/llsl//llsl-c61/llsl-c61.pdf. Congress incorporated a version of this definition into FIFRA in 1972. 86 Stat. 978, P.L. 92-516 (Oct. 21, 1972) ("The term 'pesticide' means (1) any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest . . . ."). In 1976, Minnesota's legislature adopted this formulation. 1976 Minn. Laws 149 ("'Pesticide' means any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest . . . .").

[60] MDA, Review of Neonicotinoid Use, Registration, and Insect Pollinator Impacts in Minnesota 11 (Aug. 2016), attached as Exhibit D.

[61] MDA Neonic Review, Exhibit D at 11.

- "Treated seed products are not tracked in Minnesota through any statute or regulatory requirements known to the MDA."
- "The MDA sees value in tracking treated seed purchased and planted and thus is working to estimate sales of treated seed in Minnesota. However, gaps in data collection will exist due to a limited ability for oversight and the lack of reporting requirements for treated seed."
- "Due to the lack of treated seed use reporting, the environmental load of neonicotinoids and all potential-associated risks in Minnesota are reasonably unmeasurable."
- "Additional risks posed by current treated seed use are unknown, due in part to the MDA's inability to track the purchase, use, storage, or disposal of treated seed under FIFRA or state seed and pesticide laws."

Exhibit A at 2–4 . MDA's letter to EPA highlighted the need for federal regulatory action. But EPA shows no sign of taking sufficient steps to regulate treated seed. While federal action would undoubtedly be beneficial, it is not the only option. As explained below, while MDA has historically argued that it has no authority to regulate pesticide-treated seeds as pesticides, it has always had ample authority under state and federal law to regulate treated seed use. Indeed, it has a legal duty to do so to protect Minnesota's environment.

IV. Rulemaking Petition

The Administrative Procedure Act allows "any person" to "petition an agency requesting the adoption, amendment, or repeal of any rule." Minn. Stat. § 14.09. "The petition shall be specific as to what action is requested and the need for the action." *Id.* Within 60 days of receiving the petition, MDA must "make a specific and detailed reply in writing as to its planned disposition of the request and the reasons for its planned disposition of the request." *Id.*

V. MDA Must Amend Its Rules to Regulate Use of Pesticide-Treated Seeds

A. MDA has authority to regulate use of pesticide-treated seeds

MDA may regulate sale, distribution, and use of pesticide-treated seeds. Pesticide-treated seeds constitute "pesticides" within the plain meaning of the PCA and, therefore, are subject to MDA's longstanding regulatory authority with respect to all pesticides. The legislature removed any doubt regarding MDA's authority in 2023 when it enacted legislation prohibiting use of treated seeds in a manner that causes "unreasonable adverse effects on the environment." Minn. Stat. § 18B.075. MDA's regulatory authority is not preempted by FIFRA or any other federal law.

1. Pesticide-treated seeds are pesticides under Minnesota law

MDA's regulatory authority extends to all "pesticides." *See* Minn. Stat. § 18B.03 ("The [MDA] commissioner shall administer, implement, and enforce" the PCA, and MDA "is the lead state agency for the regulation of pesticides."). The agency has explicit authority to "adopt rules" governing pesticides. *Id.* § 18B.06.

Insecticide-treated seeds are pesticides because treated seeds include substances intended to kill insect pests and mitigate their harm to growing crops. The legislature has defined "[p]esticide" to include any "substance or mixture of substances intended to prevent, destroy, repel, or mitigate a pest . . . ." *Id.* § 18B.02, subd. 18. Promotional materials for products applied to seeds regularly highlight this

intent.[62] MDA itself has also explained that "[f]armers treat soybean seed to prevent insects from eating the seed and from early season insects such as the bean leaf beetle."[63] Treated seeds constitute a "mixture" of a crop seed and these pesticidal products. Minn. Stat. § 18B.02, subd. 18. The resulting mixture, therefore, is a pesticide under Minnesota law.

Interpreting the federal definition of "pesticide" upon which Minnesota's definition is modeled,[64] EPA has long considered treated seeds to be pesticides. *Compare* Minn. Stat. § 18B.01, subd. 18 ("Pesticide" includes a "substance or mixture of substances intended to prevent, destroy, repel, or mitigate a pest . . . .") *with* 7 U.S.C. § 136 ("The term "pesticide" means . . . any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest . . . ."). In response to a recent legal petition, EPA reiterated its "longstanding position that pesticide-treated seeds are considered to be pesticides themselves because they are a mixture of substances that are intended to prevent, destroy, repel or mitigate a pest."[65] This rationale applies equally to Minnesota's definition of "pesticide."

MDA must construe the PCA's definition of "pesticide" to include treated seeds not only because the statute's plain language compels this result, but because only this interpretation comports with the legislature's desire to protect Minnesota's environment from pesticide harms. *See State v. Henderson*, 907 N.W.2d 623, 625 (Minn. 2018) (confirming that the goal of statutory interpretation is to "ascertain and effectuate the intent of the Legislature"). As explained above, the PCA consistently evinces the legislature's intent that MDA assess and mitigate the harms of pesticide use and to prohibit use of pesticides in a manner that causes unreasonable adverse effects on the environment. *See supra* Section III.B. MDA's refusal to regulate treated seeds as pesticides prevents the agency from addressing what is likely the most widespread use of insecticides statewide. *See supra* Section II.B. MDA's interpretation has, for decades, effectively prevented the agency from collecting data on how and where these pesticides are used or mitigating their harms to people and the environment as required by the PCA. The only logical reading of the PCA is that MDA has clear authority to regulate pesticide-treated seeds.

That treated seeds are comprised of both a registered pesticide product and a non-pesticidal seed does not mean that treated seeds are not pesticides. They are a pesticide because they constitute a "mixture of substances," some of which are designed to kill insect pests. Minn. Stat. § 18B.02, subd. 18. MDA's own practice regarding insecticide-laced fertilizers confirms this reading. For example, MDA

---

[62] *See, e.g.*, Bayer Crop Science U.S., Gaucho 600 Flowable Seed Treatment, https://www.cropscience.bayer.us/d/gaucho-600-flowable-seedgrowth (last visited Oct. 15, 2024) ("[P]rovides unmatched protection against the worst insects, acting both on contact to protect the roots and systemically to protect the plant.") (Attached as Exhibit E); BASF, Poncho 600 Seed Treatment, available at https://www.cdms.net/ldat/ldGUU006.pdf (last visited Oct. 15, 2024) ("for the control of listed insect pests.") (Attached as Exhibit F); DuPont Lumivia Insecticide Seed Treatment, https://s3-us-west-1.amazonaws.com/agrian-cg-fs1-production/pdfs/DuPont_Lumivia_Label.pdf (Lumivia "provide[s] protection against early season injury to corn from Wireworms, White grubs, Black cutworms, Seedcorn maggot, and Fall armyworm") (Exhibit G)

[63] MDA, 2019 Pesticide Usage on Corn and Soybeans Grown in Minnesota (6/22/2022), available at https://www.mda.state.mn.us/sites/default/files/docs/2022-07/2019pesticideoncornsb.pdf.

[64] *See supra* n. 59.

[65] Exhibit C at 30.

has registered "Award Fertilizer 0-0-7 with .067% Acelepryn" and "Award Turf Fertilizer with Merit 0.2 0-0-7" as pesticide products despite the inclusion of fertilizer that itself if not a pesticide.[66] "Acelepryn" and "Merit" are brand names describing registered pesticide products containing the active ingredients chlorantraniliprole and imidacloprid, respectively.[67] Similarly, both MDA and EPA register as a pesticide "Clothianidin Technical," a highly concentrated formulation of the neonicotinoid active ingredient clothianidin that is used to manufacture other pesticides[68] that, in turn, are registered by MDA.[69]

In 2023, the legislature enacted section 18B.075 of the PCA to reaffirm MDA's authority to regulate treated seeds. That section states that "[a] person may not use, store, handle, distribute, or dispose of seed treated with pesticide in a manner that: (1) endangers humans, food, livestock, fish, or wildlife; or (2) will cause unreasonable adverse effects on the environment." Minn. Stat. § 18B.075. Taken as a whole, the PCA leaves no doubt that MDA has authority to regulate treated seeds as pesticides.

2. MDA lacks authority to exempt treated seeds from all regulation as pesticides

MDA's approach toward regulating treated seeds effectively mirrors EPA's application of the treated article exemption to these seeds under federal law. But MDA does not have authority to exempt treated articles from state regulation. MDA and EPA's regulatory authority stem from two distinct statutes; the PCA governs MDA's authority over pesticides, whereas FIFRA governs EPA's. Neither statute requires or permits MDA to exempt treated seeds or other pesticides from regulation.

Initially, the federal treated article exemption may be used to exempt pesticides from only *federal* requirements. *See* 7 U.S.C. § 136w(b) ("The Administrator may exempt from the requirements of *this subchapter* . . . ." (emphasis added)); 40 C.F.R. § 152.25 ("The pesticides or classes of pesticides listed in this section have been determined to be of a character not requiring regulation *under FIFRA*, and are therefore exempt from all provisions *of FIFRA* . . . ." (emphases added)). MDA's authority to regulate

[66] MDA, Registered Product Search, https://www2.mda.state.mn.us/webapp/lis/productsdefault.jsp (last visited May 17, 2024) (Search "191933" and "128495" in the "MDA Product Number" search field.).

[67] *See* Bayer CropScience, Merit 2F, available at https://label.westernpest.com/files_techservices/live/bayer.merit2f102416.label.pdf (last visited Oct. 15, 2024) (Attached as Exhibit H); Syngenta, Acelepryn, available at https://www.greencastonline.com/current-label/acelepryn (last visited Oct. 15, 2024) (Attached as Exhibit I).

[68] *See* EPA, Letter from Venus Eagle to Steven K. Ditto at p. 4, available at https://www3.epa.gov/pesticides/chem_search/ppls/001021-02782-20160722.pdf (last visited Oct. 15, 2024) ("This product is intended only for use in the formulation of Clothianidin containing insecticide products. Products formulated with Clothianidin Technical will require registration with the U.S. Environmental Protection Agency.") (Attached as Exhibit J).

[69] For example, "Aloft LC G" and "Arena 50" are registered pesticide products in Minnesota. MDA, Registered Product Search, https://www2.mda.state.mn.us/webapp/lis/productsdefault.jsp (last visited Oct. 15, 2024) (screenshots attached at Exhibit K). Both contain clothianidin as their active ingredient. Valent, Aloft LC G Insecticide, available at https://www.cdms.net/ldat/ld7U9000.pdf (Attached as Exhibit L); Valent, Arena 50 W D G Insecticide, available at https://newsomseed.com/resources/Arena%2050%20WDG%20Label.pdf (Attached as Exhibit M).

pesticides does not flow from FIFRA. Accordingly, neither the federal treated articles exemption nor EPA's application of that exemption to treated seeds limits MDA's authority over pesticides.

MDA's authority instead stems from the PCA, which contains no treated articles exemption. While MDA may "exempt pesticides that have been deregulated or classified as minimum risk by the United States Environmental Protection Agency from the requirement of registration," Minn. Stat. § 18B.26, subd. 5(e), this provision solely permits MDA to exempt certain pesticides from the *registration* requirement. This provision certainly does not *require* MDA to exempt treated seeds from the requirement of registration. More importantly, it does not permit MDA to exempt treated seeds from all duties and restrictions under the PCA.

Indeed, even if MDA chose to exempt treated seed from *registration*, PCA would still prohibit any person from using a pesticide in a manner that "endangers humans, damages agricultural products, food, livestock, fish, or wildlife" or causes "cause unreasonable adverse effects on the environment." Minn. Stat. § 18B.07, subd. 2. This prohibition applies to all "pesticide[s]," irrespective of their registration status. *Id.* And the legislature recently reiterated this requirement with respect to treated seeds. Minn. Stat. § 18B.075. MDA can fulfill its mandatory duty to "administer, implement, and enforce" these requirements, Minn. Stat. § 18B.03, by promulgating regulations governing treated seed use. For example, MDA should require reporting of treated seed use, including information about the seed treatment product, application rate, and area of application. Such a reporting program does not rely on registration of the treated seed itself.

In sum, because treated seeds are pesticides, MDA may not exempt them from regulation.

3. Federal law does not preempt MDA's regulation of treated seed use

While two federal statutes regulate treated seeds, neither interferes with a state's ability to regulate use of treated seeds. Accordingly, federal law is no barrier to MDA's regulation of pesticides to protect Minnesota's people and environment from the harms of treated seed use.

First, FIFRA does not preempt state regulation of pesticides. *Wisc. Pub. Intervenor v. Mortier*, 501 U.S. 597, 614 (1991) (holding FIFRA "does not occupy the field of pesticide regulation" to the exclusion of state authority). FIFRA instead constitutes "a relatively decentralized scheme that preserves a broad role for state regulation." *Bates v. Dow Agrosciences LLC*, 544 U.S. 431, 450 (2005). Indeed, FIFRA explicitly affirms state authority to "regulate the sale or use of any federally registered pesticide or device," provided "the regulation does not permit any sale or use prohibited by [FIFRA]." 7 U.S.C. § 136v(a). The Supreme Court has interpreted this language as allowing states to "ban or restrict the uses of pesticides that EPA has approved." *Bates*, 544 U.S. at 450.

While FIFRA does prohibit states from imposing "any requirements for labeling or packaging [on a pesticide] in addition to or different from those required under [FIFRA]," 7 U.S.C. § 136v(b), this prohibition is narrow. It applies only to: (1) state requirements "*for labeling or packaging*;" that (2) are "*in addition to or different from* those required under [FIFRA]." 544 U.S. at 444 (emphasis in original). MDA can enact regulations governing treated seed use without affecting pesticide product labels required by FIFRA.

Conflict preemption concerns likewise do not apply. EPA's policy determination to exempt treated seeds from federal regulation is not entitled to preemptive effect as to regulation under state

law. *See In re Frito-Lay N. Am., Inc. All Nat. Litig.*, 2013 WL 4647512, at *10 (E.D.N.Y. Aug. 29, 2013) (citing *Holk v. Snapple Beverage Corp.*, 575 F.3d 329, 342 (3d Cir.2009)). Even if a conflict preemption analysis were applicable, a state rule regulating the sale and use of treated seed does not conflict with FIFRA's statutory scheme, which preserves state rights to enact more stringent regulations on pesticide use. *Bates*, 544 U.S. at 450.

The Federal Seed Act (FSA), 7 U.S.C. §§ 1551-1611, does not preempt MDA's authority over treated seeds either. The FSA establishes federal labeling standards for seeds sales to prevent misrepresentation and ensures imported seeds meet minimum quality standards when sold.[70] Under the law, seed containers for seeds treated with pesticides must identify the pesticide treatment used and bear any relevant warnings. 7 U.S.C. §§ 1571(i), 1581(4). The FSA does not explicitly preempt states from prohibiting or restricting the sale or use of seeds.

Where no explicit preemption exists,[71] a strong presumption against preemption applies. *Wyeth v. Levine*, 555 U.S. 555, 565 (2009) (holding state "failure to warn" claims were not preempted by federal law governing the labeling of drugs). Federal law only preempts state law where it "so thoroughly occupies a legislative field" it leaves "no room for the States to supplement it," ("field preemption") or where there is a direct conflict with a state law ("conflict preemption"). *Cipollone v. Liggett Grp., Inc.*, 505 U.S. 504, 516 (1992). For the FSA, neither type of preemption applies to state laws restricting prohibiting the sale or use of neonic-treated seeds.

While the FSA establishes "a uniform set of requirements for the testing, certifying, and labeling of seeds," it does not preempt state regulation *unrelated* to testing, certifying, and labeling of seeds. *Frontier AG, Inc. v. Nuseed Americas Inc.*, No. 18-2352-DDC-TJJ, 2019 WL 3219334, at *5 (D. Kan. July 17, 2019) (holding FSA did not preempt state statutory tort claims related to defective sunflower seeds). Laws restricting or prohibiting the sale or use of neonic-treated seeds are unrelated to the testing, certifying, or labeling of seeds and are therefore not field preempted by the FSA. *See, e.g.*, *Va. Uranium, Inc. v. Warren*, 139 S. Ct. 1894, 1902 (2019) (holding Atomic Energy Act did not prohibit Virginia law prohibiting uranium mining); *Empire State Rest. & Tavern Ass'n v. New York*, 289 F. Supp. 2d 252, 255 (N.D.N.Y. 2003) (holding OSHA regulations regarding individual toxins in tobacco smoke did not preempt New York law regarding tobacco smoke).

Similarly, state action on neonic-treated seeds does not conflict with the FSA. Conflict preemption only occurs in cases of "actual conflict" where state law "stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress." *Cipollone*, 505 U.S. at 545 (quoting *Hines v. Davidowitz*, 312 U.S. 52 (1941)). Here, the purpose of the FSA is to ensure that seeds sold in the United States are truthfully labeled and meet minimum standards for purity and germination when sold. A state regulation governing sale or use of treated seeds does not interfere with labeling, testing, or certification of seeds sold in Minnesota, and therefore does not conflict with the purpose or objectives of the FSA. Accordingly, the FSA does not preempt such a state regulation.

---

[70] *See also* USDA, Agriculture Marketing Service, *Summary Statement on the Federal Seed Act* (undated), *available for download at* https://bit.ly/3sc3f8A.

[71] USDA's FSA regulations explicitly preempt state and local laws relating to the importation of seed from foreign countries. 7 C.F.R. § 361.2. But this provision is irrelevant to MDA regulation of treated seed use.

B. MDA's Failure to Regulate Pesticide-Treated Seeds Permits Pesticide Applications to Cause Unreasonable Adverse Effects on the Environment in Violation of the PCA

The PCA broadly requires that "[p]esticides must be applied . . . in a manner that will not cause unreasonable adverse effects on the environment within limits prescribed by this chapter and FIFRA." Minn. Stat. § 18B.07, subd. 1. MDA has a mandatory duty to "administer, implement, and enforce" this requirement. Minn. Stat. § 18B.03; *id.* § 645.44, subd. 16 ("'Shall' is mandatory."). And MDA itself has explained that it "is tasked with preventing unreasonable adverse effects to humans and the environment from pesticide treated seed." Exhibit A at 3. But by failing to regulate treated seeds, MDA has permitted and continues to permit widespread destruction of Minnesota's environment while providing little-to-no benefit to farmers, violating its core duty to implement and enforce the PCA.

The planting of treated seeds is an "appl[ication]" of a pesticide. The PCA defines the "application or use of a pesticide" to include "the dispersal of a pesticide on, in, at, or directed toward a target site." *Id.* § 18B.01, subd. 1d(1). When treated seeds are planted, pesticidal material is "dispers[ed]" in and on a field, which constitutes the "target site." *Id.* That is especially true of insecticide-treated seeds because neonics and other insecticidal seed treatments do not serve their intended purpose—protection of the planted seed and growing plant from soil pests—until after planting.[72] Accordingly, MDA must ensure that the planting of treated seeds will not "cause unreasonable adverse effects on the environment." Minn. Stat. § 18B.07.

Application of neonic-treated corn and soybean seed to millions of acres of Minnesota farmland causes "unreasonable adverse effects on the environment," defined to mean "unreasonable risk to humans or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide or seed treated with pesticide." Minn. Stat. § 18B.01, subd. 31. Here, MDA's own data and ample peer-reviewed research demonstrate that neonic-treated corn and soybean seeds are causing widespread, serious harm to the environment, *supra* section II.B-II.C, and substantial risks to human health, *see supra* section II.D. Meanwhile, a large and growing body of scientific research demonstrates that neonic-treated seeds do not provide net economic benefits for farmers. *See supra* section II.E. Applying the balancing standard set out in the PCA, these harms are unreasonable and must be mitigated.

C. MDA's Failure to Address Neonic Contamination Infringes on Minnesotans' Rights Guaranteed by the Minnesota Environmental Rights Act

MDA must promulgate rules governing the sale and use of treated seeds because ubiquitous, unchecked, and unnecessary treated seed use is causing "pollution, impairment, or destruction" of the environment. Minnesota Environmental Rights Act, Minn. Stat. § 116B.10, subd. 2; *id.* § 116B.04(b) (MERA). In enacting MERA, the legislature "declare[d] that each person is entitled by right to the protection, preservation, and enhancement of air, water, land, and other natural resources located within the state and that each person has the responsibility to contribute to the protection, preservation, and enhancement thereof." *Id.* § 116B.01. To this end, the legislature created two civil remedies to guard against "pollution, impairment, or destruction" of the state's natural resources. Minn.

[72] *See* Exhibit E (Gaucho is designed "protect the roots and systemically to protect the plant."); Exhibit F ("Poncho® 600 seed treatment provides broad-spectrum efficacy against a range of soil and plant pests.")

Stat. § 116B.10, subd. 2; *id.* § 116B.04(b). MDA's decades-long refusal to mitigate ubiquitous pesticide contamination stemming from unchecked treated seed use infringes on this basic right of all Minnesotans.

MDA's nonregulation of treated seeds is causing pollution, impairment, and destruction of Minnesota's environment. MERA defines pollution, impairment, or destruction to include "any conduct which . . . violates, or is likely to violate, any environmental quality standard . . . or . . . conduct which materially adversely affects or is likely to materially adversely affect the environment." *Id.* § 116B.02, subd. 5. Initially, MDA's failure to regulate treated seeds has for decades caused unreasonable adverse effects on the environment. *See supra* Section V.B. This violation of an environmental quality standard constitutes "pollution, impairment, or destruction" of the environment and violates MERA. Minn. Stat. § 116B.02, subd. 5.

MDA's conduct also violates MERA because it has caused and continues to cause material adverse effects on the environment. The Minnesota Supreme Court has articulated a five-factor test for determining whether conduct "materially adversely affects" the environment. *Id.* § 116B.02, subd. 5. The five factors are:

> (1) The quality and severity of any adverse effects of the proposed action on the natural resources affected;
>
> (2) Whether the natural resources affected are rare, unique, endangered, or have historical significance;
>
> (3) Whether the proposed action will have long-term adverse effects on natural resources, including whether the affected resources are easily replaceable (for example, by replanting trees or restocking fish);
>
> (4) Whether the proposed action will have significant consequential effects on other natural resources (for example, whether wildlife will be lost if its habitat is impaired or destroyed);
>
> (5) Whether the affected natural resources are significantly increasing or decreasing in number, considering the direct and consequential impact of the proposed action.

State by Schaller v. Cnty. of Blue Earth, 563 N.W.2d 260, 267 (Minn. 1997). The factors, however, are "intended as a flexible guideline;" they are not exclusive and "each factor need not be met." *Id.*

MDA's failure to regulate treated seed use across millions of acres of Minnesota's environment satisfies each of the *Schaller* factors. *See generally supra* sections II.A, B. Applying factor 1, the severity and scope of harm caused by neonic contamination far exceeds the harm that courts have found to constitute "pollution, impairment, or destruction" of natural resources. For example, in *White Bear Lake*, the court determined that DNR's mismanagement of its groundwater use permitting program caused "material adverse impacts" to White Bear Lake in violation of MERA in numerous respects, including shrinking the size of the lake, degrading productive habitat for wildlife, destroying aquatic plants, and decreasing water clarity that harmed the lake ecosystem. *See White Bear Lake Restoration*

Ass'n v. Minn. Dep't of Natural Resources, 2017 WL 9833672, *29-38 (Minn. Dist. Ct. Aug. 30, 2017),*aff'd in part*, 946 N.W. 2d 373 (Minn. 2020)).

Here, MDA's mismanagement of its exclusive authority over pesticide use in the state has caused similar ecological impacts that extend far beyond a single lake; it impacts natural resources on millions of acres statewide. As detailed in section II above, neonic contamination is ubiquitous. This pollution decimates populations of honey bees and wild bees, harms white-tailed deer, poisons and starves birds, and pollutes surface waters at levels likely to harm aquatic invertebrates. These harms are felt on millions of acres across Minnesota and contribute to precipitous declines in biodiversity.

MDA's failure also harms irreplaceable, critically imperiled species like the rusty patched bumble bee and monarch butterfly that have all but disappeared in recent decades. These harms strongly implicate *Schaller* factors 2, 3, and 5. *Supra* section II.C.1. In *State ex rel. Wacouta Township v. Brunkow Hardwood Corp.*, the court affirmed a lower court decision holding that disturbing a single roosting site for threatened bald eagles "clear[ly] . . . was likely to have a material adverse effect on the environment." 510 N.W.2nd 27, 31 (Minn. Ct. App. 1993).[73] The court enjoined operations within 500 meters of the site, explaining that "the eagles and the roosts are rare, difficult to replace, interrelated, and constitute a critical number [in relation to the broader eagle population]." *Id.*

MDA's failure to address the number one source of ubiquitous neonic contamination is already harming rusty patched bumble bees and monarch butterflies on millions of acres statewide. Moreover, whereas the eagles at issue in *Wacouta Twp.* were federally listed as threatened, rusty patched bumble bees are endangered,[74] meaning they are already "in danger of extinction throughout all or a significant portion of [their] range." 16 U.S.C. § 1532(6). Compared with the eagles at issue in *Wacouta Twp*., the rusty patched bumble bee is at least as "rare" and "difficult to replace," and MDA's action likely impacts a far greater proportion of Minnesota's population of this imperiled bee.

Neonics are also a significant contributor to the broader biodiversity crisis unfolding in Minnesota and around the world. Neonics harm numerous species whose numbers are plummeting, even if they are not yet legally recognized as being imperiled. Grassland and insectivorous birds most likely to be harmed by neonic-treated seed use have declined precipitously over recent decades. *See supra* Section II.C.3. And beekeepers report losing upwards of 40% of their honey bee colonies each year—losses that would have been inconceivable prior to the mid-2000s, when neonic use skyrocketed. Overall honey bee numbers have held constant solely due to the heroic efforts of beekeepers to breed and replace lost colonies. And young mayflies—insects that are crucial for Minnesota's aquatic

[73] Although the court's opinion in *Wacouta Twp.* predates the modern *Schaller* test, the Supreme Court in *Schaller* expressly endorsed the factors considered in *Wacouta Twp.* and modified those factors only to provide a "comprehensive measure of materiality." *Schaller*, 563 N.W.2d at 267.

[74] Endangered Species Status for the Rusty Patched Bumble Bee*, supra* n. 23.

ecosystems[75] and yet have all but disappeared in recent decades[76]—"are among the most sensitive taxa to neonicotinoids."[77]

Under *Schaller* factor 4, neonics' devastating effects on aquatic and terrestrial invertebrates have consequential effects on entire ecological and agricultural systems. Disappearing terrestrial and aquatic insect populations starve fish, birds, and other species that depend on these populations as prey. *See supra* section II.C.2, II.C.3. And declining pollinator populations are likely to harm wild, flowering plants that depend on insect pollination to reproduce. In fact, EPA predicts that its reapproval of neonic use is likely to push 163 imperiled plant species toward extinction nationwide through indirect effects;[78] three of those species are found in Minnesota.[79]

Researchers estimate that declining populations of bees and other insect pollinators are already decreasing production of healthy fruits, vegetables, and nuts worldwide. This, in turn, leads to upwards of 400,000 added preventable deaths stemming from reduced access to healthy foods.[80]

Critically, the ecological harms of neonic contamination are long-lasting and potentially permanent—strongly implicating *Schaller* factor 3. Neonics are highly persistent in the environment and can remain in soils for years after application.[81] But even after neonic contamination subsides, population-level impacts on pollinators, birds, and other wildlife will persist for decades. Although honey bees can be bred and replaced, the same cannot be said of Minnesota's grassland birds, aquatic invertebrates, and more than 400 species of wild bees. In the case of critically imperiled species like the rusty patched bumble bee, continued neonic use could result in extinction.

D. MDA must remedy their violation of MERA and PCA

By causing "pollution, impairment, or destruction" of Minnesota's environment and permitting applications of treated seeds to cause unreasonable adverse effects of the environment, MDA is violating the law. It must take regulatory action to remedy these failures. One option is for MDA to, as it does other pesticides, require registration of each treated seed product. But Petitioners believe that a

---

[75] Minnesota Department of Natural Resources, Species Profile – Mayfly, https://www.dnr.state.mn.us/minnaqua/speciesprofile/mayfly.html#:~:text=Mayflies%20are%20extremely%20important%20in,bats%20while%20they%20are%20alive. (last visited Oct. 15, 2024).

[76] *See* Stepanian et al., Declines in an abundant aquatic insect, the burrowing mayfly, across major North American waterways, 117(6) PNAS1287-92 (Feb. 11, 2020), https://www.pnas.org/doi/pdf/10.1073/pnas.1913598117.

[77] Van de Brink et al., Acute and chronic toxicity of neonicotinoids to nymphs of a mayfly species and some notes on seasonal differences, 35(1) Environ. Toxicol. Chem. 128-33 (Jan. 2016), https://pubmed.ncbi.nlm.nih.gov/26419398/.

[78] EPA, *supra* n. 16.

[79] U.S. Fish and Wildlife Service, Environmental Conservation Online System, Listed species with spatial current range believed to or known to occur in Minnesota, https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=MN&stateName=Minnesota&statusCategory=Listed (last visited Oct. 15, 2024).

[80] Matthew Smith et al., *Pollinator Deficits, Food Consumption, and Consequences for Human Health: A Modeling Study*, 130(12) Environ. Health Perspectives (Dec. 14, 2022), available at https://ehp.niehs.nih.gov/doi/10.1289/EHP10947.

[81] Bonmatin 2014, *supra* n.9.

programmatic approach may be more efficient and effective. Accordingly, Petitioners call on the agency to amend Minn. R. 1505.1080, where MDA already imposes restrictions on certain categories of pesticides, to create a separate treated seed regulatory program with at least four components.

First, MDA should develop a treated-seed-use reporting program to provide accurate data regarding the nature and extent of treated seed use in Minnesota. MDA has repeatedly highlighted the need for this information.[82] Specifically, usage data are necessary to identify the most significant sources of neonic contamination that result in violations of the protective standards of MERA and PCA. Only by identifying these sources can MDA mitigate their impacts as needed. MDA can achieve this central goal through a regulation requiring farmers to report annually the type of seed planted, including the crop and the seed treatment product used, as well as the acreage and location of the planting.

MDA should also make treated seed use data available to the public to allow Minnesotans to understand how and where potentially harmful pesticides are being used in the state.

Second, MDA should clarify that farmers may not use seeds coated with seed treatments that have not been registered by MDA for that purpose. MDA reviews and registers seed treatment products to ensure use of those products meet protective standards under state law. But a farmer might purchase out-of-state a seed treated with an unapproved seed treatment product and bring it into Minnesota. Because MDA does not currently regulate the treated seed as a pesticide, it fails to prohibit application of that seed in Minnesota—even though it is coated with an unregistered pesticide product. Without direct regulation of the treated seeds planted in Minnesota soil, MDA cannot ensure compliance with its duties under the PCA and MERA.

Third, MDA should require seed sellers to provide farmers with access to popular seed hybrids that are not treated with insecticides. This is especially crucial in corn. Currently, seed companies commonly treat corn seeds with neonicotinoids far upstream in supply chains, meaning the seeds arrive at co-ops and seed dealers already treated. Farmers therefore have little choice but to purchase and use neonic-treated seeds. Moreover, it has been reported that some seed companies drastically reduce replant protections for untreated seeds, further incentivizing largely unnecessary use of treated seeds.[83] The result is ubiquitous use of neonic seed treatments in corn despite research demonstrating their lack of economic benefits for farmers. By ensuring that popular hybrids are available without insecticide seed treatments, MDA can address widespread neonic contamination, enhance farmer choice regarding pesticide use, and preserve farmer access to popular hybrids with the latest genetic traits.

Fourth, MDA should develop a verification-of-need program to rein in widespread, unnecessary use of neonic-treated seeds. To comply with the MERA and PCA, MDA must reduce contamination of Minnesota's environment with neonics. The best way to achieve this goal is to eliminate major sources of neonic contamination that provide little-to-no benefit. Neonic-treated seeds, therefore, are the perfect target for these reductions. MDA can eliminate unnecessary use of treated seeds by requiring farmers to provide written verification of farm conditions that necessitate use of insecticide seed treatments—commonly referred to as "verification of need" (VON).

---

[82] Exhibit A at 2–4; Exhibit D.

[83] Emily Unglesbee, Treated Seed Troubles, *Progressive Farmer*, https://www.dtnpf.com/agriculture/web/ag/crops/article/2021/07/13/seed-treatment-overload-unintended.

VON is a common-sense approach that has been shown to reduce neonic contamination while preserving crop yields. The province of Quebec, Canada, implemented a program in 2019 to require farmers to acquire a certification from an independent agronomist before purchasing and using corn and soybean seeds treated with neonics.[84] Like in Minnesota, nearly all conventional corn grown in Quebec was once grown from a neonic-treated seed. Just two years after program implementation, less than .5% of corn acres were sown with neonic-treated seed and neonic contamination of the environment reduced significantly.[85] Neonic-treated soybean use was eliminated.[86] Meanwhile, farmers' yields have remained constant or increased since implementation of the program.[87] The province is now planning to expand the VON program to all insecticide seed treatments.[88]

States in the U.S. are now planning to adopt similar VON programs to address neonic contamination. New York[89] and Vermont[90] have both recently enacted legislation to require their respective pesticide regulatory agencies to develop and implement such a program by 2029.[91] The experience in these states may serve as a model as MDA develops a VON program that works for Minnesota farmers.

VI. Conclusion

By failing to regulate use of treated seeds, MDA is failing to address the number one source of neonic contamination devastating Minnesota's environment. This failure violates both MERA and PCA. Accordingly, Petitioners call on MDA to amend Minn. R. 1505.1080 to create a regulatory program that tracks treated seed use, ensures applicators are not using unregistered seed treatments, enhances farmer access to non-insecticide treated seeds, and develops a verification-of-need program for

---

[84] Letter from Louis Robert and Dr. Genevieve Labrie to Governor Kathy Hochul (Aug. 7, 2023), attached as Exhibit N.

[85] Ministère de L'Environnement et de la Lutte Contre Les Changements Climatiques, *Bilan des Ventes de Pesticides Au Québec: Année 2021*, 7 (2023), https://bit.ly/3OeWLTk (In English, via Google Translate : "There are hardly any retail sales of seeds coated with neonicotinoids. We think that less than 0.5% of the area would be sown with corn coated with neonicotinoids, compared to 100% in 2015. All soybean acreage would now be seeded without neonicotinoids, compared to 50% in 2015."); *see also* Testimony of Louis Robert before the Minnesota House Agriculture Finance and Policy Committee (Mar. 16, 2023), attached as Exhibit O.

[86] Ministère de L'Environnement et de la Lutte Contre Les Changements Climatiques, *supra* n. 85.

[87] Statistics Canada, *Estimated Areas, Yield, Production of Corn For Grain and Soybeans, Using Genetically Modified Seed, in Metric and Imperial Units* (release date Jun. 28, 2023), https://tinyurl.com/2yk9tpsr.

[88] Gazette Officielle de Québec, Partie 2: Loie et Reglements p. 426 (Feb. 22, 2023), https://www.publicationsduquebec.gouv.qc.ca/fileadmin/gazette/pdf_encrypte/gaz_entiere/2308-F.pdf (In English, via Google Translate: "To ensure better protection of aquatic life and bees, seeds coated with insecticides from the diamide family would be covered by the agronomic justification and prescription already applicable for seeds coated with neonicotinoids. The planting of seeds coated with fungicides (class 3B) would also be supervised. The addition of financial administrative penalties and the adjustment of penal provisions are also planned.").

[89] S. 8031 (2024), available at https://nyassembly.gov/leg/?default_fld=&leg_video=&bn=S08031&term=2023&Summary=Y&Text=Y.

[90] H. 706, An Act relating to banning the use of neonicotinoid pesticides, available at https://legislature.vermont.gov/Documents/2024/Docs/BILLS/H-0706/H-0706%20As%20Introduced.pdf.

insecticide-treated seeds. But whether MDA follows Petitioners' preferred course or not, it cannot maintain its current non-regulation of this vast source of environmental degradation. MDA must act now.

Respectfully submitted,

Lucas Rhoads
NRDC Action Fund
1152 15th Street NW, Suite 300
Washington, DC 20005
lrhoads@nrdc.org

Leigh Currie
Director of Strategic Litigation
Minnesota Center for Environmental Advocacy
1919 University Ave. W. #515
St. Paul, MN 55104
lcurrie@mncenter.org

John P. Lenczewski
Executive Director
Minnesota Trout Unlimited
P.O. Box 845
Chanhassen, MN 55317
John.lenczewski@mntu.org

EXHIBIT LIST

Exhibit	Citation	Bates No.
Exhibit A	Letter from Thom Petersen, Commissioner, MDA, to Michael Regan, Administrator, U.S. Environmental Protection Agency, Sub: [MDA] comments on the U.S. Environmental Protection Agency's request for information and comment on Requirements Applicable to Treated Seed and Treated Paint Products in docket number EPA-HQ-OPP-2023-0420 located at www.regulations.gov (Feb. 9, 2024)	001
Exhibit B	Pierre Mineau, Neonicotinoids in California: Their Use and Threats to the State's Aquatic Ecosystems and Pollinators, with a Focus on Neonic-Treated Seeds (2020)	020
Exhibit C	U.S. Environmental Protection Agency, EPA Response to the April 2017 Petition from Center for Food Safety and Others Relating to EPA Regulation of Pesticide-Treated Seed (Sep. 27, 2022)	079
Exhibit D	MDA, Review of Neonicotinoid Use, Registration, and Insect Pollinator Impacts in Minnesota 11 (Aug. 2016)	136
Exhibit E	Bayer Crop Science U.S., Gaucho 600 Flowable Seed Treatment, https://www.cropscience.bayer.us/d/gaucho-600-flowable-seedgrowth (last visited Oct. 15, 2024)	257
Exhibit F	BASF, Poncho 600 Seed Treatment, available at https://www.cdms.net/ldat/ldGUU006.pdf (last visited Oct. 15, 2024)	271
Exhibit G	DuPont Lumivia Insecticide Seed Treatment, https://s3-us-west-1.amazonaws.com/agrian-cg-fs1-production/pdfs/DuPont_Lumivia_Label.pdf	286
Exhibit H	Bayer CropScience, Merit 2F, available at https://label.westernpest.com/files_techservices/live/bayer.merit2f102416.label.pdf (last visited Oct. 15, 2024)	293
Exhibit I	Syngenta, Acelepryn, available at https://www.greencastonline.com/current-label/acelepryn (last visited Oct. 15, 2024)	311
Exhibit J	EPA, Letter from Venus Eagle to Steven K. Ditto, available at https://www3.epa.gov/pesticides/chem_search/ppls/001021-02782-20160722.pdf (last visited Oct. 15, 2024)	321
Exhibit K	MDA, Registered Product Search, https://www2.mda.state.mn.us/webapp/lis/productsdefault.jsp (last visited Oct. 15, 2024)	327
Exhibit L	Valent, Aloft LC G Insecticide, available at https://www.cdms.net/ldat/ld7U9000.pdf (last visited Oct. 15, 2024)	330

Exhibit M	Valent, Arena 50 W D G Insecticide, available at https://newsomseed.com/resources/Arena%2050%20WDG%20Label.pdf (last visited Oct. 15, 2024)	339
Exhibit N	Letter from Louis Robert and Dr. Genevieve Labrie to Governor Kathy Hochul (Aug. 7, 2023)	352
Exhibit O	Testimony of Louis Robert before the Minnesota House Agriculture Finance and Policy Committee (Mar. 16, 2023)	358