

# TESTIMONY FOR SF719

**Date:** March 14, 2023

**To:** Senate Environment, Climate, and Legacy Committee

**RE:** Support of SF719: Examination of neonicotinoid impacts on free-ranging species funding provided, and money appropriated

**From:** Pollinator and Wildlife Coalition, Minnesota Environmental Partnership  
(compiled by Laurie Schneider, Executive Director, Pollinator Friendly Alliance, [laurie@pollinatorfriendly.org](mailto:laurie@pollinatorfriendly.org))

**Our Support:** Our coalition is comprised of partnering organizations, farmers, biologists, naturalists, and urban and rural Minnesota residents: We support **SF719: Examination of neonicotinoid impacts on free-ranging species, funding provided and money appropriated.**

**Neonicotinoid Effects in Minnesota:** It is no secret that pollinators and birds are in severe decline. Just take a look around you. We see new evidence daily in the press and scientific journals of continued decline. Pesticide use is a primary driver of species decline – and in the U.S. it's the most widely used insecticide in the world – neonicotinoids (neonics). Recent scientific studies on neonic effects on pollinator, bird, animal and human health are disturbing and alarming:

- 1. Minnesota's own deer spleen research not only demonstrated neonics are present in the majority of deer tested, but also deer collected from deep forest areas in the north which shows the ubiquitous nature of neonicotinoid insecticides. Recent studies also show contamination in free-ranging mammals and grassland birds. Pesticide contaminated forage and habitat contributes to a depleted immune system and unhealthy deer already suffering from CWD.**

*Effects of Neonics on Deer, Pheasant and other Free-Ranging Mammals*, Dr. Jonathan Jenks, 2022

<https://youtu.be/qGdHhogZdW0>

*Effects of Neonics on Female and Fawn White-tailed Deer*, Berheim, Jenks, Lundgren, 2019 Scientific reports:

<https://www.nature.com/articles/s41598-019-40994-9>

*Assessing Neonic Exposure in Wild Deer in Minnesota, 2021*: Minnesota DNR 2021

<https://static1.squarespace.com/static/623c9365af01026ca2eb4c15/t/63bd804decaf924071e86b26/1673363538860/neonic+exposure+deer+2021+DNR+report.pdf>

- 2. These neurotoxins are designed to kill insects and unfortunately do not distinguish between target pests and beneficial insects. Beneficial insects and pollinators are keystone species that support the entire food web including fish, aquatics, birds, other wildlife, and humans:**

*Call to restrict neonicotinoids by scientists*, Goulson 2018, Sciencemag

<https://static1.squarespace.com/static/623c9365af01026ca2eb4c15/t/63bd83c93c34663942421fb7/1673364428183/Goulson+undersigned+scientists+restrict+neonics.pdf>

*Worldwide Integrated Assessment of Systemic Insecticides*: Pisa, Goulson, 2021 Springer

<https://link.springer.com/article/10.1007/s11356-017-0341-3>

### 3. Minnesota waters are contaminated with neonics:

Minnesota Department of Agriculture, *neonics surface water pesticides of concern* (2020)

<https://www.mda.state.mn.us/surface-water-pesticides-concern>

*Insecticide Seed Treatments Threaten Midwestern Waterways*, Xerces Society for Invertebrates 2021

<https://xerces.org/publications/fact-sheets/insecticide-seed-treatments-threaten-midwestern-waterways>

### 4. Songbird decline is driven by loss of insect populations and pesticide use. One neonicotinoid-coated seed can kill a songbird.

*Neonics impair migratory ability in a seed-eating songbird*, *Eng Scientific Reports* 2017

<https://www.nature.com/articles/s41598-017-15446-x.epdf>

*Birds, Bees, and Aquatic Life Threatened by Toxicity of World's Most Widely Used Pesticide*, ABC News, 2013

<https://abcbirds.org/news/birds-bees-and-aquatic-life-threatened-by-gross-underestimate-of-toxicity-of-worlds-most-widely-used-pesticide-2/>

### 5. Early research on chronic neonic contamination of human food, environment and water are starting to emerge including risk of ALS:

*Global pollinator losses equate to loss of healthy foods and human life study*: Harvard University Study, 2023

[https://www.theguardian.com/environment/2023/jan/09/global-pollinator-losses-causing-500000-early-deaths-a-year-study?CMP=Share\\_iOSApp\\_Other](https://www.theguardian.com/environment/2023/jan/09/global-pollinator-losses-causing-500000-early-deaths-a-year-study?CMP=Share_iOSApp_Other)

*Neurotoxic pesticides applied to crops and amyotrophic lateral sclerosis (ALS) risk in U.S.*, ScienceDirect, 2021

<https://www.sciencedirect.com/science/article/abs/pii/S0161813X21001169>

In Minnesota, neonicotinoids are used ubiquitously – in agriculture, on treated GMO crop seeds, in horticulture, for land management and even residential lawn and gardens. In lieu of a ban on these toxic pesticides which are contaminating our waters, our lands, wildlife forage, and our own food – further evidence is needed to demonstrate the extent of contamination of free-ranging species.

The U.S. government is sadly negligent in regulating toxic insecticides evidenced by the 60 years it took to remove toxic chlorpyrifos from our food. U.S. regulations for neonicotinoids are weak and do not protect Minnesota communities from pesticide contamination. Other countries and some states are implementing partial and full bans on systemic insecticides and neonicotinoids. The responsibility to protect Minnesotans is left to state and local communities. Not only is research on neonicotinoid contamination key to understanding how neonics are moving through the environment and up the food chain, these data will also help us understand threats to human health. We need to act now to protect the basic building blocks of healthy human life.

**Definition - What is a neonicotinoid:** Neonicotinoids are a class of systemic insecticides which kill insects with a neurotoxin. Systemic insecticides are absorbed into the plant and tree tissues reaching the stem, leaves, roots and flowers. Neonicotinoids may have long lasting contamination on nearby water and soil depending on the amount used and frequency of application. Neonicotinoids are neurotoxins that have proven lethal and sublethal effects on pollinators, migratory birds, deer, and other wildlife. Neonicotinoids are listed as a surface water pesticide of concern as they show up commonly in Minnesota streams and groundwater. Comparison studies show neonicotinoid-coated seed does not increase soy crop yields. In fact, the use of insecticides removes beneficial insects that control pest insects such as beetles thus reducing the total crop yield.

**Insecticides reduce total crop yield. Yale Environmental Review.**

<https://environment-review.yale.edu/deadlier-intended-pesticides-might-be-killing-beneficial-insects-beyond-their-targets-0>

Further support and studies on neonicotinoid contamination:

**Water Contamination:**

[Minnesota 2020 Clean Water Fund Report Summary](#)

**Neonicotinoid Causes Autism-Like Symptoms Study:** November, 2022. Neurosciencenews.com

<https://neurosciencenews.com/neonicotinoid-asd-21898/>

**Neurotoxic effects of neonics on mammals including humans: PubMed Cen, Ferreira study:**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8395098/>

**Lax Pesticide Policies are putting wildlife health at risk**

<https://www.audubon.org/magazine/summer-2021/lax-pesticide-policies-are-putting-wildlife>

**How Pesticide Companies Corrupted the EPA and Poisoned America**

<https://theintercept.com/2021/06/30/epa-pesticides-exposure-opp/>

**Soybean yields and environmental pollution.** IPM Practitioner 2017.

<https://www.birc.org/IPMPfinalOct2017.pdf>

**Failure to yield: Evaluating the performance of GE crops.** Union of Concerned Scientists, 2009.

<https://www.ucsusa.org/resources/failure-yield-evaluating-performance-genetically-engineered-crops>

**Neonicotinoid effects on songbirds:** Science: *A neonicotinoid insecticide reduces fueling and delays migration in songbirds.* Margaret L. Eng, LeBridget, J. M. Stutchbury, Christy A. Morrissey. Issue 13 Sep 2019: Vol. 365, Issue 6458, pp. 1177-1180.

<https://science.sciencemag.org/content/365/6458/1177>

**Three billion birds have been lost in North America since 1970**

<https://www.nationalgeographic.com/animals/article/three-billion-birds-lost-north-america>

**Pesticides are leading cause of grassland bird declines**

<https://abcbirds.org/article/new-study-finds-pesticides-leading-cause-of-grassland-bird-declines/>

**The impact of nation's most widely used insecticides on birds**

[https://abcbirds.org/wp-content/uploads/2015/05/Neonic\\_FINAL.pdf](https://abcbirds.org/wp-content/uploads/2015/05/Neonic_FINAL.pdf)

**Decline in U.S. bird biodiversity connected to neonic poisoning**

<https://aces.illinois.edu/news/decline-us-bird-biodiversity-related-neonicotinoids-study-shows>

**Goebel study: Insecticide drift and impacts on birds of prey in public grasslands of Minnesota**

[https://conservancy.umn.edu/bitstream/handle/11299/219388/Goebel\\_umn\\_0130M\\_22104.pdf?sequence=1](https://conservancy.umn.edu/bitstream/handle/11299/219388/Goebel_umn_0130M_22104.pdf?sequence=1)

**Neonics and decline in bird biodiversity in the US, Yijia, Ruiging study:**

<https://www.nature.com/articles/s41893-020-0582-x>

National Academy of Sciences, William Janousek, Douglas, Cannings, et al.  
January 23, 2023: **Recent and Future Declines of Historically Widespread Pollinator (Western Bumble Bee) Linked to Climate, Land Cover and Pesticides.**

<https://www.pnas.org/doi/full/10.1073/pnas.2211223120>

**How neonicotinoid-like insecticides, sulfoxaflor and flupradifurone work: PAN, 2016**

[https://www.pan-europe.info/sites/pan-europe.info/files/public/resources/factsheets/201609%20Fact%20sheet%20What%20is%20a%20neonicotinoid\\_Flupradifurone\\_Sulfoxaflor\\_EN\\_PAN%20Europe.pdf](https://www.pan-europe.info/sites/pan-europe.info/files/public/resources/factsheets/201609%20Fact%20sheet%20What%20is%20a%20neonicotinoid_Flupradifurone_Sulfoxaflor_EN_PAN%20Europe.pdf)

**Pollinator Decline / Insect Apocalypse:**

Xerces Society: *The science behind the role neonics play in harming bees.* Jennifer Hopwood, Aimee Code, Mace Vaughan et al. (2016)

[https://xerces.org/sites/default/files/2018-05/16-023\\_01\\_XercesSoc\\_ExecSummary\\_How-Neonicotinoids-Can-Kill-Bees\\_web.pdf](https://xerces.org/sites/default/files/2018-05/16-023_01_XercesSoc_ExecSummary_How-Neonicotinoids-Can-Kill-Bees_web.pdf)

**Monarch butterflies on verge of extinction**

<https://www.nationalgeographic.com/animals/article/monarch-butterflies-near-extinction>

**Neonic effects on hummingbirds: English, Sandoval-Herrera study: PubMed Central study**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7858574/>

**Pesticide-Induced Diseases Database:**

<https://www.beyondpesticides.org/resources/pesticide-induced-diseases-database/overview>

**States are categorizing neonics as restricted use**

<https://www.wbur.org/news/2021/03/05/neonicotinoid-massachusetts-bees>

**European union expands ban on neonicotinoids**

<https://www.science.org/content/article/european-union-expands-ban-three-neonicotinoid-pesticides>

**Chlorpyrifos insecticide ban in U.S. and Health Effects <https://www.nrdc.org/chlorpyrifos>**

**Pesticide effects on wild partridge study**

<https://www.sciencedirect.com/science/article/abs/pii/S0269749122012192?via%3Dihub>

**Contamination by neonics in barn owls and swifts: Science Direct: Humann, Laurent study**

<https://www.sciencedirect.com/science/article/pii/S0048969721024748>

**Widespread insecticide and coated seed use connected to grassland bird declines: Cornell Lab**

<https://www.allaboutbirds.org/news/neonic-nation-is-widespread-pesticide-use-connected-to-grassland-bird-declines/>