



Neonicotinoid pesticide (“neonic”) pollution is a growing threat to Michigan’s environment, \$1B in state pollinator-dependent crops, and the health of Michiganders themselves, especially children. While research reveals wasteful and unnecessary uses account for the largest sources of neonic pollution, regulatory loopholes at the federal and state level hamper efforts to address this toxic problem. Other jurisdictions have taken important steps to address these loopholes and protect their people, economy, and environment from harmful and unnecessary neonic use. Michigan’s legislature must act too.

Most Ecologically Destructive Pesticides Since DDT – As the world’s most widely used and potent insecticides, neonics have made U.S. agriculture [48-times more harmful to insects](#) since their introduction in the mid-1990s. Neonics permeate plants—turning their leaves, nectar, pollen, and fruit toxic—and can be applied to a plant’s roots or as a coating on a crop seed, which the plant then absorbs as it grows. Only 2-5% of the chemicals are typically absorbed, leaving the other 95% to persist in soil for years, where they are easily carried long distances by rain or irrigation water, continuously building up in the environment over time. Recently, U.S. EPA made the unprecedented finding that [neonic use is driving 200+ species toward extinction](#), confirming neonics as among the most ecologically destructive pesticides of all time.

Neonics Kill Bees, Threatening Michigan Agriculture – Overwhelming scientific evidence links neonic use to massive bee population losses, including worldwide academic assessments (see [here](#) and [here](#)), extensive [Cornell University research](#), and even a [major pesticide-industry-funded field study](#)—the largest to date. One neonic-treated seed can contain enough active ingredient to kill a quarter of a million bees, with even [“near infinitesimal” neonic exposures](#) causing debilitating harms. Michigan beekeepers’ [continued massive colony losses](#) and the disappearance of native bees and other pollinators [threaten upwards of \\$1B](#) of pollinator-dependent crops, including apples, blueberries, cherries, pumpkins, strawberries, tomatoes, cucumbers, and alfalfa. Indeed, [nationwide research](#) finds that *yields of top Michigan crops, like blueberries, apples, and cherries are already limited because of a lack of pollinators*, particularly wild bees.

Neonics Broadly Contaminate Michigan Water and Debilitate Ecosystems – Federal water testing indicates that neonics [frequently contaminate Michigan water](#), with 39% of samples containing neonics above EPA’s chronic benchmark for harm to aquatic ecosystems. This chronic pollution [wipes out aquatic insects](#) and other life that other animals depend on as a food source, leading to mass losses of [birds](#) and [fish](#), including a well-documented [fishery collapse](#). Neonic water contamination has also been linked to [birth defects and higher death rates in white-tailed deer](#). Chronic contamination also means Michiganders may find neonics in their drinking water. While advanced water filtration systems remove neonics, [standard chlorination treatment does not](#), putting those who drink water from groundwater, older treatment systems, or unfiltered supplies at higher risk.

Neonics Increasingly Threaten Human Health – A recent nationwide study of 171 pregnant women found [neonics in the bodies of >95% of women](#)—with the highest rates in Hispanic women, and the

detection levels and frequency steadily increasing for all participants over the 4-year study (2017-2020). The results suggest worsening neonic exposure from earlier CDC monitoring finding [neonics in the bodies of half the U.S. population](#)—and the highest levels in children. This is particularly concerning given research linking neonics to [neurological, developmental, and reproductive harms](#) in people, including malformations of the developing heart and brain, autism-like symptoms, and [reduced sperm](#) and [testosterone levels](#).

Neonics Kill Birds – Research links neonics to [large declines in U.S. bird species](#)—contributing to [the 30% decline in North American birds](#) seen in the last 50 years. Eating just one neonic-treated seed is enough to kill some songbirds, and even at low doses, neonics can harm birds’ [immune systems](#), [fertility](#), and [navigation](#), and [cause rapid weight loss](#)—reducing birds’ chances of surviving in the wild. As neonics kill insect populations, [birds also starve](#). [Declining bird populations](#) have been linked to very low levels of neonics in water, and neonics are a suspected cause of the [steep decline in French farmland birds](#).

Most Neonic Use Is Unnecessary – Extensive research in [Michigan](#), [other Midwestern States](#), and [elsewhere](#) find that the largest neonic use—coatings or “treatments” on corn and soybean seeds—provide no overall economic benefits to users. Similarly, nonagricultural lawn and garden use pose some of the highest risks to pollinators, but are easily replaced with safer alternatives. [Other research](#) shows that neonics can actually *decrease* yields by killing pollinators or pest predators (i.e., “good bugs”). For nearly all uses, [neonics are replaceable](#), and the best and most cost-effective alternative is often nothing. Where insecticides are used, [non-synthetic or less-harmful synthetic substitutes exist](#).

Failing to Regulate Neonics Puts Michigan Behind – Due to regulatory loopholes, the Michigan Department of Agriculture and Rural Development (MDARD) does not exercise any regulatory control over the largest and most widespread neonic use in the state—neonic-treated crop seeds—as it does other pesticides. With EPA [refusing to regulate pesticide-treated seeds](#) directly, it’s up to states to take action. The [New York](#) legislature passed a bill to eliminate neonic use on corn, soybean, and wheat seeds with certain exceptions, while Canadian provinces like Quebec and Ontario have required users to verify a legitimate pest concern before using treated seeds, [leading to a dramatic reduction in use](#). Other jurisdictions, like [New Jersey](#), [Maine](#), [California](#), [Nevada](#), and [Colorado](#) have also limited or prohibited neonic lawn and garden products.

Michigan’s Legislature Must Act – Michigan must protect its \$1B pollinator-dependent agricultural economy, its environment, and the health of all Michiganders against the worsening neonic contamination crisis. Given current regulatory loopholes and no help in sight from the U.S. EPA, Michigan’s legislature must act.