



Neonicotinoid insecticides: Failing to come to grips with a predictable environmental disaster.

In 2013, American Bird Conservancy produced a groundbreaking report *“The Impact of the Nation’s Most Widely Used Insecticides on Birds”* outlining the risks that this class of mobile and persistent insecticides placed on ecosystems and the ripple effects on wildlife, most notably birds. At the time, most of the controversy surrounding this class of products concerned honey bee mortality incidents and the potential for neonicotinoids to interfere with crop pollination. In the decade since, little has changed, though the mountain of evidence of the negative impacts from neonics continues to grow.

The conclusions of the 2013 report were clear:

Some neonicotinoid insecticides, including the dominant product at the time, imidacloprid, are potentially lethal to birds and can seriously disrupt reproduction, normal behavior and physiology. Because of their use as seed treatments, exposure routes are plentiful and lead to substantial exposure.

The 2023 report echoes these conclusions, and reflects 10 additional years of evidence.

Neonicotinoids impact aquatic systems on which birds heavily depend for food. Observed contamination levels in surface and groundwater in the US and around the world are strikingly high, and already beyond the threshold found to kill many aquatic invertebrates. United States Environmental Protection Agency (EPA) risk assessments using outdated methodology have greatly underestimated this risk. EPA’s recent determinations of effects on Threatened and Endangered Species did not take seed treatments into account.

“Now even more than in 2013, we see a very strong case for cancelation of all but the most essential uses of neonics”

– 2023 Report

Recommendations from American Bird Conservancy

Based on this evidence, additional safeguards are required.. We urge the EPA and other legislative and regulatory authorities to:

- Suspend all applications of neonicotinoids pending independent review of effects on birds, terrestrial and aquatic invertebrates, and other wildlife.
- Ban the use of neonicotinoids as seed treatments and include coated seeds as unexempt pesticides under Federal law.
- Require that registrants of acutely toxic and systemic pesticides develop the tools necessary to diagnose poisoned birds and other wildlife.
- Develop regulatory language to govern safe disposal and storage of neonicotinoid-coated seeds and require a prescription from an agronomist before use of neonicotinoids as seed coatings is considered.
- Ultimately, we recommend passage of laws and regulations at the Federal and State level to prohibit the use of neonicotinoids as a seed treatment.



American Bird Conservancy is dedicated to conserving wild birds and their habitats throughout the Americas.

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*Birds are inordinately affected by neonics both directly and indirectly;
Rules and regulations need to keep up with the latest science*

Toxicity Studies

New toxicity studies from the last decade have reinforced the high toxicity to birds of the first-generation neonicotinoids.

- When toxicity values are scaled for small body size and high toxicity, the Hazardous Dose (HD5) value for imidacloprid can be as low as 1 mg/kg
- A number of independent studies with imidacloprid have shown that our current 'debilitation threshold' may still be under-protective
- Imidacloprid, clothianidin, and thiamethoxam have reproduction-impairing properties in birds
- Before birds learn to avoid a neonic-coated seed, they may experience serious neurologic symptoms which may be life threatening
- Chronic exposure to neonic-laden insects or plants may also lead to toxic effects

Insect Decline

Recent studies link neonic use to declines in insect populations, which has harmful repercussions for birds.

- 96% of North American birds depend on insects at some point in their lifecycle
(Tallamy & Shriver, 2021)
- Neonics easily move with water, making them a threat to terrestrial and aquatic insects
- Restricting neonic uses to crops which do not require insect pollination is not adequate protection for invertebrates
- The risk of seed treatments for pollinators at large has been completely mischaracterized and underrepresented by regulators
- Multiple neonics are typically detected in the same samples of water and soil, meaning that cumulative and synergistic effects must also be examined

Regulation Needs

Immediate and precedented action is required to address threats from neonics

- The European Union has banned all outdoor uses of neonicotinoids
- Ontario and Quebec have required demonstration of need before neonics are used on corn seed; use on corn seed dropped by 98% in two years
- Neonic-coated seeds must be unexempted from the Federal Insecticide, Fungicide, and Rodenticide Act
- State governments should continue to pass neonic-restricting legislation
- The EPA should be overly conservative when performing impact analyses on Threatened and Endangered Species

