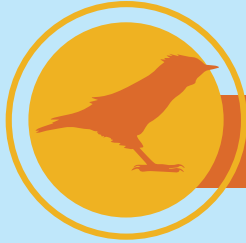


Neonics: How birds are affected

Neonicotinoids are the most commonly used pesticides in the United States and are often applied to crop seeds as coating before a seed is planted. Neonics have devastating consequences, and a single neonic-coated seed is enough to kill a songbird.



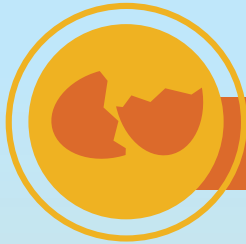
Life-threatening weight loss

Eng, M.L., Stutchbury, B.J.M., Morrissey, C.A., 2019. A neonicotinoid insecticide reduces fueling and delays migration in songbirds. *Science* 365, 1177–1180. <https://doi.org/10.1126/science.aaw9419>



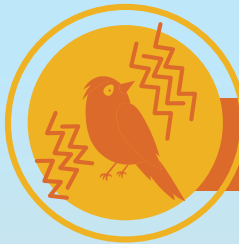
Impaired spermatogenesis/reproduction

Eng, M.L., Stutchbury, B.J.M., Morrissey, C.A., 2019. A neonicotinoid insecticide reduces fueling and delays migration in songbirds. *Science* 365, 1177–1180. <https://doi.org/10.1126/science.aaw9419>



Decreased brood sizes

Eng, M.L., Stutchbury, B.J.M., Morrissey, C.A., 2019. A neonicotinoid insecticide reduces fueling and delays migration in songbirds. *Science* 365, 1177–1180. <https://doi.org/10.1126/science.aaw9419>



Convulsions

Eng, M.L., Stutchbury, B.J.M., Morrissey, C.A., 2019. A neonicotinoid insecticide reduces fueling and delays migration in songbirds. *Science* 365, 1177–1180. <https://doi.org/10.1126/science.aaw9419>



Loss of migratory ability

Eng, M.L., Stutchbury, B.J.M., Morrissey, C.A., 2019. A neonicotinoid insecticide reduces fueling and delays migration in songbirds. *Science* 365, 1177–1180. <https://doi.org/10.1126/science.aaw9419>



Death

Eng, M.L., Stutchbury, B.J.M., Morrissey, C.A., 2019. A neonicotinoid insecticide reduces fueling and delays migration in songbirds. *Science* 365, 1177–1180. <https://doi.org/10.1126/science.aaw9419>



Impaired motor control

Eng, M.L., Stutchbury, B.J.M., Morrissey, C.A., 2019. A neonicotinoid insecticide reduces fueling and delays migration in songbirds. *Science* 365, 1177–1180. <https://doi.org/10.1126/science.aaw9419>

“Agricultural Intensification (Pesticides and fertilizers) is the leading cause of bird decline in Europe”

– 2023 Report

Insect loss → Prey loss for birds



**American Bird
Conservancy**





REPORT IN BRIEF

*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 mis-characterized 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 unprecedented 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