



Conservation Action Alert

Tell the City of Tucson to Ban the Use of Neonicotinoids – Insecticides that Threaten Bees, Birds and Biodiversity

SUMMARY

Neonicotinoids (“neonics”) are nicotine-like insecticides that are contributing to the very alarming global decline of bees and other wildlife. Bees are a key pollinator for flowering plants and are essential for the propagation of many agricultural crops. These harmful chemicals persist in the environment for months to years, and pose a serious threat to birds, butterflies, aquatic species and other non-target species.

BACKGROUND

A recent BBC News article reports that researchers who have carried out a four-year review of the scientific literature say the evidence of damage from neonics is now “conclusive”. The article compares the current situation of widespread neonic use to the threats “once posed by the notorious chemical DDT.”¹ These harmful chemicals can persist for months or years in water, soil, pollen, nectar and other plant tissues – resulting in the harm or death to non-target species such as earth worms, freshwater snails, bees, moths, butterflies, amphibians and birds.

Neonics are a threat to biodiversity and agriculture. Pollination is a vital ecosystem process that is crucial for flowering plants and for the propagation of many agricultural foods. A comprehensive review of the current research indicates that there is a link between pesticides that contain neonics and die-offs of pollinators such as honey bees, native bees, butterflies, moths, and other insects.² Recent research suggests that neonics inhibit honey bee’s mitochondrial bioenergetics and may make the bees more susceptible to parasites and pathogens, including the intestinal parasite *Nosema*, which is implicated as one causative factor in Colony Collapse Disorder.^{3,4} Research also suggests the negative impacts from neonics can work their way further up the food chain. This finding is logical, considering that insects form the base of many terrestrial and aquatic food webs.

A study at Radboud University in the Netherlands recently published in the journal *Nature* compared concentrations of the neonicotinoid pesticide imidacloprid measured in lakes and other surface waters around the Netherlands to local changes in 15 farmland bird species from 2003 to 2010. Researchers found that in areas where concentrations of the pesticide were more than 20 nanograms per liter, populations of insectivorous birds such as barn swallows, tree sparrow and common starlings fell 3.5 per cent a year, compared to the average population trend for their species. Hans de Kroon, one of the study’s researchers concluded: “Neonicotinoids were always regarded as selective toxins. But our results suggest that they may affect the entire ecosystem.”⁵ In addition, some plant nurseries and seed producers treat their plants and seeds (even birdseed!) with neonics, making these poisons even more pervasive and insidious.

Studies that have demonstrated the harmful effects of neonics on bees have prompted the European Commission to introduce a ban on three kinds of neonics, including imidacloprid. The

¹BBC News: Widespread Impacts of Neonicotinoids ‘Impossible to Deny’. <http://www.bbc.com/news/science-environment-27980344>

² Xerces Society: Are Neonicotinoids Killing Bees? *A Review of Research into the Effects of Neonicotinoid Insecticides on Bees, with Recommendations for Action.* <http://www.xerces.org/neonicotinoids-and-bees/>

³ Environmental Toxicology and Chemistry: Fipronil and imidacloprid reduce honeybee mitochondrial activity. Available online at: <http://onlinelibrary.wiley.com/doi/10.1002/etc.2655/full>

⁴ Plos One: Exposure to Sublethal Doses of Fipronil and Thiacloprid Highly Increases Mortality of Honeybees Previously Infected by *Nosema ceranae*. <http://www.plosone.org/article/info:doi/10.1371/journal.pone.0021550>

⁵ *Nature*. 511, 341–343, 17 July 2014, doi: 10.1038/nature13531. Available online at: <http://www.nature.com/nature/journal/v511/n7509/full/nature13531.html>

United States Fish and Wildlife Service (USFWS, Region 1) recently announced a ban on neonics for the lands it manages and in its agricultural practices. The USFWS ban, which is planned to be instituted nationwide, is a positive step in the right direction, and sets an example for other governmental agencies that continue to use neonics, or for those that do not yet have an established policy governing their use.

Tucson Audubon is in support of our local municipalities and public land and wildlife management agencies instituting bans on neonics. The City of Tucson staff and its contractors do not currently use neonics on city-owned properties. However, we want to ensure that it stays that way into the future by formalizing this policy via instituting a ban. The City of Tucson should join other forward-thinking cities such as Eugene, Oregon and Spokane, Washington that have already instituted such bans.^{6,7}

TAKE ACTION!

- Contact your local City Council Representative to ask them to support a ban on the use of neonics on city owned property by city staff and contractors, and to ensure plants and seed purchased by the city from third parties are neonic-free.
- Send an e-mail in support of a City of Tucson ban on neonics to csfunicelli@gmail.com by August 31st 2014. Tell the City Council how the use of neonics could negatively affect you, your organization, business or home. (You can contact your Representative in support of the ban after this deadline).
- If you are from out of town, consider starting or joining a campaign to ban neonics in your city, county or other institution.
- Read labels of gardening chemicals, plants and seeds and make sure they are neonic-free.

TALKING POINTS

- Neonics are implicated in the global decline of bees and are a threat to many “non-target” species – snails, moths, butterflies, birds, and aquatics can be unintentionally exposed.
- Southern Arizona has among the highest bee and bird diversity in the world – a natural resource and economic driver that needs to be safeguarded from the increasingly widespread use of neonics.
- The City of Tucson does not currently use neonics, and should formalize this by instituting a ban similar to those already instituted in Eugene, Oregon, Spokane, Washington and by the US Fish and Wildlife Service.

CONTACT INFORMATION

See the Tucson City Council's website: <http://government.tucsonaz.gov/city-government>

FOR MORE INFORMATION

American Bird Conservancy: <http://www.abcbirds.org/abcprograms/policy/toxins/pesticides.html>

The Xerces Society: <http://www.xerces.org/neonicotinoids-and-bees/>

Nature: <http://www.nature.com/nature/journal/v511/n7509/full/nature13531.html>

Environmental Toxicology and Chemistry: <http://onlinelibrary.wiley.com/doi/10.1002/etc.2655/full>

USFWS: http://www.centerforfoodsafety.org/files/guidelines-for-interim-use-and-phase-out-of-neonicotinoid-insecticides-in-refuge-farming-for-wildlife-programs-signed-kf-7914_67415.pdf

⁶ Seattle Times: Spokane bans chemical that may kill bees. *The City Council voted to ban the city's purchase and use of neonicotinoids. The ban covers about 30 percent of the land in Spokane and doesn't apply to private use.* Available online at: http://seattletimes.com/html/localnews/2023996148_spokanebeesxml.html

⁷ Eugene Weekly: Save the Bees. *Neonics Spell Disaster.* Available online at: <http://www.eugeneweekly.com/20140306/lead-story/save-bees>