



CENTER FOR
FOOD SAFETY

**American Bird Conservancy, Beyond Pesticides Center for Biological Diversity,
Center for Food Safety Friends of the Earth, Olympia Beekeepers Association
Organic Consumers Association, Pesticide Action Network North America
Washington State Beekeepers Association**

Date: November 24, 2014

To: Presidential Pollinator Task Force

From: Center for Food Safety and 8 other organizations

Re: Additional comment on Docket # EPA-HQ-OPP-2014-0806 – water contamination

We are pleased to submit this additional comment on the above-referenced docket on behalf of the **Center for Food Safety**, together with: **American Bird Conservancy, Beyond Pesticides, Center for Biological Diversity, Friends of the Earth, Olympia Beekeepers Association, Organic Consumers Association, Pesticide Action Network North America and the Washington State Beekeepers Association**. This is submitted subsequent to earlier written and/or verbal comments that most of our groups submitted because of the recent publication of important new scientific papers, which we ask the agencies to consider.

The first attachment is a vital review paper showing impacts on aquatic life from observed levels of neonicotinoids worldwide: Morrissey, C. et al. 2014. "Neonicotinoid contamination of global surface waters and associated risk to aquatic invertebrates: A review." *Environment International* <http://dx.doi.org/10.1016/j.envint.2014.10.024>. The paper provides comprehensive information showing that very widespread aquatic contamination already has occurred in the United States (as well as globally) beyond levels that cause direct acute and chronic effects on aquatic invertebrates, as well as indirect effects on the many other species dependent upon them. While the bulk of studies are from the longer-used imidacloprid, the paper shows that the effects of all the neonicotinoids are similar. Thus, EPA, USDA and other agencies should interpolate from the documented aquatic effects of imidacloprid when considering the effects of the other neonicotinoids.

After reviewing 29 water contamination studies from 9 countries, and fully weighing the evidence of their effects, the authors determined:

*Strong evidence exists that water-borne neonicotinoid exposures are frequent, long-term and at levels (geometric means = **0.13 µg/L** (averages) and **0.63 µg/L** (maxima)) which commonly exceed several existing water quality guidelines.*

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*...we recommend here that ecological thresholds for neonicotinoid water concentrations need to be below **0.2 µg/L** (short-term acute) or **0.035 µg/L** (long-term chronic) to avoid lasting effects on aquatic invertebrate communities.*

The authors conclude with a recommendation that **we strongly urge on all of the Pollinator Task Force agencies:**

Existing information presented here suggests that stricter regulations on the use of neonicotinoid insecticides are warranted to protect aquatic ecosystems and the broader biodiversity they support.

We also attach the important new paper: Johnson, J. and J. Pettis. 2014. “A survey of imidacloprid levels in water sources potentially frequented by honeybees (*Apis mellifera*) in the eastern USA.” *Water, Air, & Soil Pollution* 10.1007/s11270-014-2127-2. Both authors are with the Bee Research Laboratory of USDA’s Agricultural Research Service in Beltsville, Maryland. They analyzed potential risks to bees as follows:

...honeybee water sources were anticipated to include low puddles in fields, small streams, and wetlands, and in residential and urban areas, sources were anticipated to include storm management ponds, street drain puddles, koi ponds, fountains, and potted plant holders. Eighteen distinct sites spanning Maryland’s agricultural Eastern Shore to the Pennsylvania line and including suburban/urban areas in or near Baltimore, Annapolis, and Washington, DC, were chosen which surveyed diverse habitats including livestock and crop farms, residential neighborhoods, and cityscapes.

They found detectable levels of imidacloprid in about 1/5th (21%) of the samples representing “all environments (urban to rural)”. With respect to risks to bees drinking from those waters, they found some sublethal doses of concern. The testing results were as follows:

*Positive quantifiable results of the ELISA assay (n total = 108) **ranged from 7 to 131 ppb IMI** [imidacloprid] in nine samples equally distributed in urban, suburban, and rural settings. [equivalent to **7 to 131 µg/L**]*

*The average for all 23 positive ELISA-analyzed samples (quantifiable and threshold) was **11.5 ppb IMI**. [equivalent to **11.5 µg/L**]*

While Johnson and Pettis did not address non-bee risks, all of their positive samples rose well above what Morrissey et al. determined to be safe to avoid harmful effects to aquatic invertebrates inhabiting such waters, that is, **0.2 µg/L**, for short-term acute effects, or **0.035 µg/L**, for long-term chronic effects. The Maryland waters sampled are close by our national capital-based agencies and the authors are USDA scientists. This brings alarming contamination risks literally “close to home”. Generally one can observe that Maryland is not among the most

agricultural-intensive States; there is little reason to think that other States would have safer waters from a neonicotinoid contamination perspective than Maryland.

The two papers just address surface waters. A major gap remains as far as groundwater monitoring information. Unfortunately, indications are the situation may be as bad as for surface waters. Huseth et al. (2014) and other studies document some of the connections between pumped groundwater and surface waters as far as neonicotinoid contaminations; these are connections that EPA's past risk assessments have neglected to consider.¹ Of greatest concern to humans is the contamination of wells, in addition to surface waters used for drinking water. Excessive levels of neonicotinoids present potential long-term impacts on human health with an emphasis on developmental neurotoxicity to fetuses and infants.² These risks must be addressed.

In short, these papers provide new information underscoring the major inadequacies in EPA's risk assessment for the neonicotinoids, the continuing data gaps and the non-precautionary standards in place in the United States. **The Pollinator Task Force must call for prompt remedies for these problems.** The United States cannot afford to have its innumerable vast surface water bodies and billions of acre-feet of groundwater contaminated with persistent, pervasive and continuously-accumulating insecticides, which destroy or diminish aquatic invertebrate populations and the food webs they sustain, and which may present human health risks.

This information also is important for the agencies to mention in their outreach and education campaigns related to pollinator preservation. **Additionally, the Task Force should implement concrete measures in all pollinator habitat acquisition and conservation plans to ensure the waters in those areas are not so contaminated with the neonicotinoids (or other pesticides) that the habitat becomes a sink rather than a source area for the species involved.**

For further information and to respond to this comment, please contact: Peter T. Jenkins, Attorney/consultant, Center for Food Safety, 660 Pennsylvania Ave. SE, Suite 302, Washington, DC 20003; 202.547.9359; pjenkins@centerforfoodsafety.org.

¹ Huseth et al. (2014) addressed potato cultivation; neonicotinoid contamination was found to constantly recirculate via pumped groundwater used for irrigating fields – an application and pollution route that EPA did not consider at all when approving the products at issue. “Variable concentration of soil-applied insecticides in potato over time: implications for management of *Leptinotarsa decemlineata*.” *Pest. Manag. Sci.*; doi: 10.1002/ps.3740.

² See, European Food Safety Agency (EFSA). 2013. “Scientific Opinion on the developmental neurotoxicity potential of acetamiprid and imidacloprid.” *EFSA Journal* 11(12):3471; doi:10.2903/j.efsa.2013.3471.