

**PLANNING AND DEVELOPMENT PUBLIC HEARING  
February 22, 2012**

**TESTIMONY OF  
SANDY BRESLIN, DIRECTOR OF GOVERNMENT AFFAIRS  
AUDUBON CONNECTICUT**

***IN OPPOSITION TO: H.B. 5155 AN ACT MODIFYING THE BAN ON  
PESTICIDE APPLICATIONS ON SCHOOL GROUNDS***

Senator Cassano, Representative Gentile and distinguished members of the Planning and Development Committee, on behalf of Audubon Connecticut, the state organization of the National Audubon Society, I want to thank you for the opportunity to speak today in opposition to H.B. 5155 AAC Modifying the Ban on Pesticide Applications on School Grounds.

Pesticides have a long and growing list of documented effects on human health and the environment. Connecticut's landmark school pesticide legislation was enacted July 15, 2005 with a ban on the use of pesticides at school playing fields and playgrounds going into effect on July 1, 2008 (PA 05-252). The purpose of the delay was to give schools time to (a) train their staff and (b) wean their fields off a reliance on pesticides.

Audubon immediately began offering training in organic turf management and, since 2007 we have trained roughly 500 people - - including municipal groundskeepers, commercial landscapers, golf club managers and private landowners - - in natural (organic) turf management.

Other organizations such as the Watershed Partnership and Northeast Organic Farming Association have also offered numerous, similar trainings and demand remains high. The public is concerned about the potential human health effects of pesticide exposure and increasingly demanding healthy lawn care options. A growing sector of the landscaping industry is emerging in response.

But change is difficult and the Connecticut General Assembly twice delayed the date that these safeguards for children would go into effect:

- In June 2007, the General Assembly moved the effective date of the law from July 1, 2008 to July 1, 2009 (PA 07-168)
- In May 2009, the effective date was delayed to July 1, 2010 (PA 09-56)

In fall 2010, another round of free trainings was offered to ALL Connecticut municipalities free-of-charge. Municipal leaders received an invitation by mail and follow-up invitations extended by phone.

Now, H.B. 5155 is poised to seriously weaken Connecticut's landmark school pesticide legislation after only one growing season and before it has had time to prove successful. Requiring the use of so-called Integrated Pest Management (IPM) on public and private school grounds at this juncture would seriously set back efforts to transition to a healthier and more sustainable school environment for our smallest and most vulnerable children, reversing legislation that also provides benefits for birds and other wildlife.

### **Pesticides and Birds**

When Rachel Carson published *Silent Spring* in 1962, she was concerned about the harmful effects of pesticides, in particular the impact of DDT on birds. Her concerns were met with fierce opposition, and her science and her scientific credentials were questioned. Today, however, thanks in large part to Rachel Carson and to the federal ban on DDT, we have Peregrine Falcons nesting in Hartford, Red-tailed Hawks on the grounds of the State Capitol and roosting along most of our major highways, Ospreys nesting along our shoreline and Eagles along the Connecticut and Housatonic Rivers and elsewhere in the state. In fact, this past weekend as part of the Great Backyard Bird Count – an annual volunteer effort that records the distribution and populations of birds in our state during winter – three (3) Bald Eagles were observed in nearby Wethersfield.

Yet, pesticides continue to be implicated in the decline of bird and other wildlife populations. For example, wildlife biologists at our own state Department of Energy and Environmental Protection have been tracking declines in Chimney Swifts for many years. It had been thought that this decline was related to the fact that our modern homes are often built without chimneys or with many fewer chimneys than in the past thereby reducing the habitat that these birds require for successful nesting. Climate change has also been considered as a possible contributor to the decline of these and other aerial insectivores. Recent research, however, is pointing to another potential cause – pesticide-related declines in the insects these birds eat to survive. (Abstract attached)

Similarly, there has been great concern about dramatic declines in bee populations and the condition known as Colony Collapse Disorder that threatens the survival of these critical pollinators. Recently, a nationwide study by Purdue University, co-authored by a scientist here at Connecticut's Agricultural Experimental Station, found that several commonly used agricultural pesticides are implicated in bee mortality. (Article attached)

Audubon Connecticut understands that change can be difficult, but we also strongly believe that reversing the current law is not a solution that will lead to improved management of school fields – especially as this law has only been in effect for one growing season. Audubon and our partners stand ready to work with the Committee, municipalities and schools to achieve successful organic turf management. Dedicating limited Department of Energy and Environmental Protection resources to enforcement and levying punitive fines against municipalities as proposed in H.B. 5155 is also not the

answer. We urge you to oppose H.B. 5155 and give the current school pesticide legislation time to succeed.

Thank you for your time and attention to this important matter.

*Audubon Connecticut, the state organization of the National Audubon Society with more than 10,000 members statewide, works to protect birds, other wildlife and their habitats through education, science and conservation, and legislative advocacy for the benefit of people and the earth's biological diversity. Through our network of nature education centers, protected wildlife sanctuaries, and local, volunteer Chapters, we seek to connect people with nature and inspire the next generation of conservationists.*



*Research Papers*, part of a Special Feature on Aerial Insectivores

## Declines of Aerial Insectivores in North America Follow a Geographic Gradient

### Présence d'un gradient géographique dans le déclin des insectivores aériens

*Silke Nebel*<sup>1</sup>, *Alex Mills*<sup>2</sup>, *Jon D. McCracken*<sup>3</sup>, and *Philip D. Taylor*<sup>3</sup>

**ABSTRACT.** North American birds that feed on aerial insects are experiencing widespread population declines. An analysis of the North American Breeding Bird Survey trend estimates for 1966 to 2006 suggests that declines in this guild are significantly stronger than in passerines in general. The pattern of decline also shows a striking geographical gradient, with aerial insectivore declines becoming more prevalent towards the northeast of North America. Declines are also more acute in species that migrate long distances compared to those that migrate short distances. The declines become manifest, almost without exception, in the mid 1980s. The taxonomic breadth of these downward trends suggests that declines in aerial insectivore populations are linked to changes in populations of flying insects, and these changes might be indicative of underlying ecosystem changes.

**RÉSUMÉ.** Les populations d'oiseaux nord-américains qui se nourrissent d'insectes aériens montrent un déclin à grande échelle. Une analyse des données de tendance du Relevé des oiseaux nicheurs (BBS) en Amérique du Nord de 1966 à 2006 indique que les déclins dans cette guildes sont plus importants que ceux qui sont observés chez les passereaux en général, et ce, de façon significative. Le profil des déclins montre également un gradient géographique frappant, la diminution des insectivores aériens devenant plus fréquente vers le nord-est de l'Amérique du Nord. La baisse est aussi plus marquée chez les espèces qui migrent sur de longues distances, comparativement à celle observée chez les espèces qui migrent sur de courtes distances. Ces déclins sont devenus évidents, presque sans exceptions, dans le milieu des années 1980. L'ampleur taxinomique de ces tendances à la baisse donne à penser que le déclin des populations d'insectivores aériens est lié aux changements dans les populations d'insectes volants, ces derniers étant possiblement le reflet de modifications au plan de l'écosystème.

**Key Words:** *aerial insectivores, geographical gradient, migration distance, migratory birds, North American Breeding Bird Survey, population decline*

<sup>1</sup>University of Western Ontario, <sup>2</sup>Acadia University, <sup>3</sup>Bird Studies Canada



Sponsored by the Society of  
Canadian Ornithologists and  
Bird Studies Canada

Parrainée par la Société des  
ornithologistes du Canada et  
Études d'oiseaux Canada



BIRD STUDIES CANADA  
ÉTUDES D'OISEAUX CANADA



<http://www.purdue.edu>

## Researchers: Honeybee deaths linked to seed insecticide exposure

January 11, 2012

[\(#\)](#) [\(#\)](#) [\(#\)](#) [\(#\)](#) [\(#\)](#)

[Print Version \(story-print-deploy-layout\\_1\\_17333\\_17333.html\)](#)

WEST LAFAYETTE, Ind. - Honeybee populations have been in serious decline for years, and Purdue University scientists may have identified one of the factors that cause bee deaths around agricultural fields.

Analyses of bees found dead in and around hives from several apiaries over two years in Indiana showed the presence of neonicotinoid insecticides, which are commonly used to coat corn and soybean seeds before planting. The research showed that those insecticides were present at high concentrations in waste talc that is exhausted from farm machinery during planting.

The insecticides clothianidin and thiamethoxam were also consistently found at low levels in soil - up to two years after treated seed was planted - on nearby dandelion flowers and in corn pollen gathered by the bees, according to the findings released in the journal *PLoS One* this month.

"We know that these insecticides are highly toxic to bees; we found them in each sample of dead and dying bees," said Christian Krupke, associate professor of entomology and a co-author of the findings.

The United States is losing about one-third of its honeybee hives each year, according to Greg Hunt, a Purdue professor of behavioral genetics, honeybee specialist and co-author of the findings. Hunt said no one factor is to blame, though scientists believe that others such as mites and insecticides are all working against the bees, which are important for pollinating food crops and wild plants.

"It's like death by a thousand cuts for these bees," Hunt said.

Krupke and Hunt received reports that bee deaths in 2010 and 2011 were occurring at planting time in hives near agricultural fields. Toxicological screenings performed by Brian Eitzer, a co-author of the study from the Connecticut Agricultural Experiment Station, for an array of pesticides showed that the neonicotinoids used to treat corn and soybean seed were present in each sample of affected bees. Krupke said other bees at those hives exhibited tremors, uncoordinated movement and convulsions, all signs of insecticide poisoning.

Seeds of most annual crops are coated in neonicotinoid insecticides for protection after planting. All corn seed and about half of all soybean seed is treated. The coatings are sticky, and in order to keep seeds flowing freely in the vacuum systems used in planters, they are mixed with talc. Excess talc used in the process is released during planting and routine planter cleaning procedures.

"Given the rates of corn planting and talc usage, we are blowing large amounts of contaminated talc into the environment. The dust is quite light and appears to be quite mobile," Krupke said.

Krupke said the corn pollen that bees were bringing back to hives later in the year tested positive for neonicotinoids at levels roughly below 100 parts per billion.

"That's enough to kill bees if sufficient amounts are consumed, but it is not acutely toxic," he said.

On the other hand, the exhausted talc showed extremely high levels of the insecticides - up to about 700,000 times the lethal contact dose for a bee.

"Whatever was on the seed was being exhausted into the environment," Krupke said. "This material is so concentrated that even small amounts landing on flowering plants around a field can kill foragers or be transported to the hive in contaminated pollen. This might be why we found these insecticides in pollen that the bees had collected and brought back to their hives."

Krupke suggested that efforts could be made to limit or eliminate talc emissions during planting.

"That's the first target for corrective action," he said. "It stands out as being an enormous source of potential environmental contamination, not just for honeybees, but for any insects living in or near these fields. The fact that these compounds can persist for months or years means that plants growing in these soils can take up these compounds in leaf tissue or pollen."

Although corn and soybean production does not require insect pollinators, that is not the case for most plants that provide food. Krupke said protecting bees benefits agriculture since most fruit, nut and vegetable crop plants depend upon honeybees for pollination. The U.S. Department of Agriculture estimates the value of honeybees to commercial agriculture at \$15 billion to \$20 billion annually.

Hunt said he would continue to study the sublethal effects of neonicotinoids. He said for bees that do not die from the insecticide there could be other effects, such as loss of homing ability or less resistance to disease or mites.

"I think we need to stop and try to understand the risks associated with these insecticides," Hunt said.

The North American Pollinator Protection Campaign and the USDA's Agriculture and Food Research Initiative funded the research.

**Writer:** Brian Wallheimer, 765-496-2050, [bwallhei@purdue.edu](mailto:bwallhei@purdue.edu) (<mailto:bwallhei@purdue.edu>)

**Sources:** Christian Krupke, 765-494-4912, [ckrupke@purdue.edu](mailto:ckrupke@purdue.edu) (<mailto:ckrupke@purdue.edu>)

Greg Hunt, 765-494-5605, [ghunt@purdue.edu](mailto:ghunt@purdue.edu) (<mailto:ghunt@purdue.edu>)

**Ag Communications:** (765) 494-2722;

Keith Robinson, [robins89@purdue.edu](mailto:robins89@purdue.edu) (<mailto:robins89@purdue.edu>)

**Agriculture News Page** (<http://www.agriculture.purdue.edu/AgComm/public/agnews/>)

#### ABSTRACT

##### Multiple Routes of Pesticide Exposure for Honeybees Living Near Agricultural Fields

*Christian H. Krupke, Greg J. Hunt, Brian D. Eitzer, Gladys Andino, Krispn Given*

Populations of honeybees and other pollinators have declined worldwide in recent years. A variety of stressors have been implicated as potential causes, including agricultural pesticides. Neonicotinoid insecticides, which are widely used and highly toxic to honeybees, have been found in previous analyses of honeybee pollen and comb material. However, the routes of exposure have remained largely undefined. We used LC/MS-MS to analyze samples of honeybees, pollen stored in the hive and several potential exposure routes associated with plantings of neonicotinoid treated maize. Our results demonstrate that bees are exposed to these compounds and several other agricultural pesticides in several ways throughout the foraging period. During spring, extremely high levels of clothianidin and thiamethoxam were found in planter exhaust material produced during the planting of treated maize seed. We also found neonicotinoids in the soil of each field we sampled, including unplanted fields. Plants visited by foraging bees (dandelions) growing near these fields were found to contain neonicotinoids as well. This indicates deposition of neonicotinoids on the flowers, uptake by the root system, or both. Dead bees collected near hive entrances during the spring sampling period were found to contain clothianidin as well, although whether exposure was oral (consuming pollen) or by contact (soil/planter dust) is unclear. We also detected the insecticide clothianidin in pollen collected by bees and stored in the hive. When maize plants in our field reached anthesis, maize pollen from treated seed was found to contain clothianidin and other pesticides; and honeybees in our study readily collected maize pollen. These findings clarify some of the mechanisms by which honeybees may be exposed to agricultural pesticides throughout the growing season. These results have implications for a wide range of large-scale annual cropping systems that utilize neonicotinoid seed treatments.

## Featured News

- [Purdue launches commercialization center to accelerate discovery to delivery \(120124CordovaCC.html\)](#)
- [One Brick Higher presented to Purdue Dance Marathon \(.../general/2012/120124CordovaOBH.html\)](#)
- [Purdue expert says Super Bowl ads may not be worth the money \(.../general/2012/120123FeinbergSuperbowl.html\)](#)
- [Study shines light on ways to cut costs for greenhouse growers \(120123LopezBedding.html\)](#)
- [Purdue center awarded \\$3.5 million U.S. DOT grant for research \(120120PeetaNEXTRANS.html\)](#)
- [Purdue to screen teacher documentary Jan. 31 \(.../events/2012/120119AqnewTeacherfilm.html\)](#)
- [Purdue closes retention gap for underrepresented minority students \(.../academics/2012/20119CordovaRetention.html\)](#)

[More News » \(.../index.html\)](#)

Copyright © 2009-12 Purdue University (<http://www.purdue.edu/purdue/disclaimer.html>).

Copyright Infringement Information (<http://www.purdue.edu/securepurdue/DMCAAgent.cfm>)

**Purdue University is an equal access/equal opportunity university**

**([http://www.purdue.edu/purdue/ea\\_eou\\_statement.html](http://www.purdue.edu/purdue/ea_eou_statement.html))**

If you have trouble accessing this page because of a disability, please contact Purdue News Service at [purduenews@purdue.edu](mailto:purduenews@purdue.edu) (<mailto:purduenews@purdue.edu>).

**Find something interesting? Share it! ([http://www.addthis.com/bookmark.php?v=250&pub=xa-](http://www.addthis.com/bookmark.php?v=250&pub=xa-4a43c3e752c92587)**

**[4a43c3e752c92587](http://www.addthis.com/bookmark.php?v=250&pubid=purduenews)) (<http://www.addthis.com/bookmark.php?v=250&pubid=purduenews>)**



Maintained by: **UNS (<http://www.purdue.edu/newsroom>)**

**Offer Feedback (<http://purdue.qualtrics.com/SE?>**

**[SID=SV\\_8ldaLIYe4JIEwGo&SVID=Prod](#)**