



**Testimony of Melissa Hoffer  
Chief, Energy and Environment Bureau  
Office of Attorney General Maura Healey**

**Before the Joint Committee on Environment, Natural Resources and Agriculture  
November 17, 2015**

---

Chairman Schmid, Chairwoman Gobi, members of the Committee. I am Melissa Hoffer, Chief of the Energy and Environment Bureau in the Office of Attorney General Maura Healey. Thank you for the opportunity to testify today in support of **H. 655**, *An Act protecting Massachusetts pollinators*, filed by Representative Carolyn Dykema. And thank you to Representative Dykema for her leadership on this issue.

Anyone who eats should care—a lot—about what’s going on with honey bees right now. This bill is not just about honey. It’s about pollination. Ultimately, that means it’s about our food and our ecosystem. Honey bees play an essential role in crop pollination for both small, local farms and large, national farming operations. A quarter of the American diet depends on honey bee pollination. And honey bee pollination adds more than \$15 billion in value to agricultural crops each year in the United States.<sup>1</sup>

But over the past few decades, we’ve begun to see significant losses of pollinators from the environment—that includes honey bees, native bees, birds, bats, and butterflies. These losses weaken our ecosystems, and threaten our ability to produce healthy food. Between April 2014 and April 2015, U.S. beekeepers lost about 42 percent of honey bee colonies.<sup>2</sup> And, for the first time, summer losses exceeded winter losses,<sup>3</sup> which is really significant because we don’t typically see colonies dying at that rate in the summer.<sup>4</sup> Estimated bee colony losses here in Massachusetts for that one-year period were as high as 46 percent.<sup>5</sup>

While there may be multiple factors responsible for this alarming trend, neonicotinoid pesticides present a clear and undeniable threat to pollinators. Neonicotinoids are systemic

---

<sup>1</sup> Presidential Memorandum – Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators, June 20, 2014, *available at* <https://www.whitehouse.gov/the-press-office/2014/06/20/presidential-memorandum-creating-federal-strategy-promote-health-honey-b>.

<sup>2</sup> Kim Kaplan, *Bee Survey: Lower Winter Losses, Higher Summer Losses, Increased Total Annual Losses*, United States Department of Agriculture (May 13, 2015), *available at* <http://www.ars.usda.gov/is/pr/2015/150513.htm>.

<sup>3</sup> *Id.*

<sup>4</sup> Seth Borenstein, *More Than 40 Percent of Bee Hives Died in Past Year*, Washington Post (May 13, 2015), *available at* [https://www.washingtonpost.com/national/health-science/more-bees-dying-in-the-summer-than-the-winter-new-study-says/2015/05/13/18f11154-f97e-11e4-9ef4-1bb7ce3b3fb7\\_story.html](https://www.washingtonpost.com/national/health-science/more-bees-dying-in-the-summer-than-the-winter-new-study-says/2015/05/13/18f11154-f97e-11e4-9ef4-1bb7ce3b3fb7_story.html).

<sup>5</sup> Brittney McNamara, *Bee Deaths Concerning, Mysterious*, The MetroWest Daily News (May 30, 2015, 10:40 PM), *available at* <http://www.metrowestdailynews.com/article/20150530/NEWS/150539670>.

insecticides that are absorbed by the treated plant to protect it from sap-sucking and plant-feeding insects—which means they are present in the nectar and pollen of treated plants. Honey bees are exposed to neonicotinoids in a number of ways, including direct ingestion of neonicotinoid-laced pollen and nectar from commercial crops and from backyard gardens and plantings where products containing neonicotinoids have been used. In fact, neonicotinoid-containing products approved for homeowner use in gardens and on lawns and trees can have manufacturer-recommended application rates that are sometimes 120 times higher than those used on agricultural crops.<sup>6</sup>

There is no question that neonicotinoids are highly toxic to bees. EPA’s environmental assessment of clothianidin in seed treatments, for example, found neonicotinoids to be a major risk to non-target species,<sup>7</sup> and a U.S. Geological Survey study out this month found neonicotinoids present in wild bees too – not just honey bees.<sup>8</sup> Research has confirmed that bees exposed to neonicotinoids experience a number of adverse effects, which impair the overall health of the hive, including:

- disorientation and difficulty foraging<sup>9</sup> and navigating back to the hive;
- impaired memory, learning, and ability to communicate;
- reduction in breeding;<sup>10</sup> and
- immune suppression.

Just to name a few.

Last year, President Obama established a Pollinator Health Task Force, and in May of this year, the group released the National Strategy to Promote the Health of Honey Bees and Other Pollinators. It recognized pesticide exposure as a primary factor contributing to losses of honey bees and other pollinators.<sup>11</sup>

---

<sup>6</sup> Jennifer Hopwood, et al, *Are Neonicotinoids Killing Bees?*, The Xerces Society for Invertebrate Conservation, p. v (2012), [http://www.xerces.org/wp-content/uploads/2012/03/Are-Neonicotinoids-Killing-Bees\\_Xerces-Society1.pdf](http://www.xerces.org/wp-content/uploads/2012/03/Are-Neonicotinoids-Killing-Bees_Xerces-Society1.pdf).

<sup>7</sup> U.S. EPA Memo from Environmental Fate and Effects Division to Registration Division, p. 2 (Nov. 2, 2010), <http://beyondpesticides.org/assets/media/documents/pollinators/clothianidinepamemo110210.pdf>.

<sup>8</sup> USGS, *Native Bees are Exposed to Neonicotinoids and Other Pesticides* (Nov 4, 2015, 11:33 AM), [http://toxics.usgs.gov/highlights/2015-11-04-pesticides\\_bees.html](http://toxics.usgs.gov/highlights/2015-11-04-pesticides_bees.html).

<sup>9</sup> See, e.g., Daren M. Eiri, James C. Nieh, *A Nicotinic Acetylcholine Receptor Agonist Affects Honey Bee Sucrose Responsiveness and Decreases Waggle Dancing*, *Journal of Experimental Biology* 215, 2022-2029 (2012).

<sup>10</sup> Erik Stokstad, *Field Research on Bees Raises Concern About Low-Dose Pesticides Science*, Vol. 335 at 1555 (Mar. 30, 2012), <http://www.pcelinjak.hr/OLD/images/stories/test2/adad/science-2012-stokstad-1555.pdf> (citing additional studies).

<sup>11</sup> See White House Pollinator Health Task Force, *National Strategy to Promote the Health of Honey Bees and Other Pollinators*, May 19, 2015, <https://www.whitehouse.gov/sites/default/files/microsites/ostp/Pollinator%20Health%20Strategy%202015.pdf>.

Other species are affected as well. A U.S.G.S. study published in 2015 found neonicotinoids present in a little more than half of U.S. streams sampled.<sup>12</sup> Research has connected neonicotinoid exposure to immune suppression in fish, amphibians, birds, and bats.<sup>13</sup> In fact, the American Bird Conservancy has called for a ban on the pesticide, based on the risk to birds and aquatic systems.<sup>14</sup> In 2007, New York State denied the registration applications of four new neonicotinoid-containing pesticides based on concerns about impacts to aquatic species and pollinators.<sup>15</sup>

Courts have weighed in, too. Last week, EPA cancelled the registration of sulfoxaflor,<sup>16</sup> a newer generation neonicotinoid pesticide, after a federal appeals court found that EPA had not adequately weighed the data on risk to pollinators before granting approval.<sup>17</sup> The science is clear that neonicotinoids present a real and increasing threat to honey bees and other pollinators.

So how would H. 655 help?

First, it would limit use of neonicotinoids during the blooming season—when bees visit crops the most—to agricultural and horticultural purposes only, and it would require that neonicotinoids be applied only by trained applicators. The bill would also ensure that, before neonicotinoids are applied, landowners are made aware of the risks posed to pollinators. H. 655 would help consumers make more informed choices by requiring plants and seeds treated with neonicotinoids to be labeled as such, and to include on the label a description of the risks to pollinators.

This bill would give us the common sense tools we need to protect our pollinators, the Commonwealth's rich agricultural heritage, and ultimately, our ecosystem.

Thank you for the opportunity to testify today, and we urge you to report this bill favorably out of Committee.

---

<sup>12</sup> USGS, *Insecticides Similar to Nicotine Found in about Half of Sampled Streams across the United States* (August, 18, 2015, 11:00 AM), available at <http://www.usgs.gov/newsroom/article.asp?ID=4300#.VjpFNmSrRvF>.

<sup>13</sup> Rosemary Mason, *et al.*, *Immune Suppression by Neonicotinoid Insecticides at the Root of Global Wildlife Declines*, *Journal of Environmental Immunology and Toxicology* 1:1, 3-12 (January/February/March 2014).

<sup>14</sup> Dr. Pierre Mineau, Cynthia Palmer, *The Impact of the Nation's Most Widely Used Insecticides on Birds*, American Bird Conservancy (Mar. 2013).

<sup>15</sup> Letter from NY Dept. of Environmental Conservation to Arysta Life Science North America Corp. (July 17, 2007), [http://pmep.cce.cornell.edu/profiles/insect-mite/cadusafos-cyromazine/clothianidin/clothianidin\\_den\\_0707.pdf](http://pmep.cce.cornell.edu/profiles/insect-mite/cadusafos-cyromazine/clothianidin/clothianidin_den_0707.pdf).

<sup>16</sup> Tiffany Stecker, *EPA Cancels Registration of Bee-Killing Chemical*, *Greenwire* (Nov. 16, 2015), available at <http://www.eenews.net/greenwire/2015/11/16/stories/1060028045>.

<sup>17</sup> Fred Pearce, *Bees Win as US Court Rules Against Neonicotinoid Pesticide*, *New Scientist* (14 September 2015), available at <https://www.newscientist.com/article/dn28167-bees-win-as-us-court-rules-against-neonicotinoid-pesticide/>.