

White House Plan Too Little to take the sting out of pollinator decline

On May 19, 2015, the White House released its much awaited plan for protecting American pollinators, which identified key threats, but fell short of recommendations submitted by Beyond Pesticides, beekeepers, and others who stress that pollinator protection begins with strong regulatory action and the suspension of bee-toxic pesticides. The Pollinator Health Task Force, established by President Obama in June 2014, brought together most federal agencies to “reverse pollinator losses and help restore populations to healthy levels,” and involved the development of a National Pollinator Health Strategy and a Pollinator Research Action Plan. The Strategy outlines several components, such as a focus on increased pollinator habitat, public education and outreach, and further research into a range of environmental stressors, including systemic neonicotinoid (neonic) pesticides. While recognizing the seriousness of pollinator decline, the Strategy contains no meaningful recommendations on the impact of pesticides on pollinators.

“Waiting for additional research before taking action on neonicotinoid pesticides, which current science shows are highly toxic to bees, will not effectively stem pollinator declines, and is unlikely to achieve the National Pollinator Health Strategy’s goal of reducing honey bee losses to no more than 15% within 10 years,” said Jay Feldman, executive director of Beyond Pesticides.

Focus on Pollinator Habitat Creation

Pollinators have lost habitat to urban and agricultural expansion. This is especially pronounced among Monarch butterfly populations, which have seen losses of their critical food source, milkweed, from herbicide applications in agricultural areas. As a result, a major component of the federal plan is the creation and stewardship of habitat and forage for pollinators. States are also being encouraged to create their own pollinator protection plans, which will rely heavily on habitat creation, public education, and best management practices. However, without restrictions on the use of neonicotinoids and other systemic pesticides, newly created habitat areas are at risk of exacerbating pesticide contamination and will provide no real safe haven for bees and other pollinators.

EPA Actions Still Fail Pollinators

Thus far, the Environmental Protection Agency (EPA) has undertaken several actions that the agency believes will help protect pollinators. These include a moratorium on new neonic products, amended neonicotinoid product labels, and a new proposal to restrict foliar applications of bee-toxic pesticides in agriculture, when managed bees are on-site and under contract. The federal government’s emphasis on creating “physical and temporal space” between the use

of pesticides and the presence of pollinators does little to address the chronic, sublethal threat of systemic, neonicotinoid pesticides, which have prolonged residual toxicity on plant and soil surfaces. Because of their persistence, they can remain hazardous for pollinators months and even years after initial application.

“Though mitigating the effects of pesticides on bees is identified as a priority, the actions listed in the Strategy fail to address the immediate threats native and managed pollinators are experiencing from systemic chemicals that persist in soil, water, and the pollen and nectar, which these critical insects feed upon,” said Mr. Feldman.

Beyond Pesticides and its allies have called for the suspension of neonicotinoid pesticides, particularly the most widely used and toxic –imidacloprid, clothianidin and thiamethoxam. These pesticides are used in a variety of home and garden products, and most commonly in corn and soybean seed treatment, where they remain in plant tissues, including pollen and nectar, for long periods of time. Along with suspensions of registrations, groups have urged EPA to conduct broader reviews on the impact of these systemic pesticides on other beneficial non-target organisms, including endangered species, and impacts to ecosystem biodiversity.

There are several factors that contribute to pollinator decline. However, it is the neonicotinoid class of pesticides that is receiving the most scrutiny from scientists and beekeepers. A growing number of studies find that even at low levels neonicotinoids impair foraging ability, navigation, learning behavior, and suppress the immune system, making bees more susceptible to pathogens and disease. One 2015 study, performed by the Food and Environment Research Agency (FERA) in the United Kingdom (UK) tracked neonics used as seed treatment for canola across nine different regions in Wales and England and found that mortality rates are 10 percent higher for bee colonies that have high levels of exposure to imidacloprid than for those with low field exposure. This study confirms a direct link between neonicotinoids and honey bee colony losses at a nationwide level. Additionally, EPA reported in 2014 that neonicotinoid-treated soybean seeds are not efficacious and provide no significant yield benefit.

The White House announcement certainly elevates the importance of pollinators and the impact their dwindling numbers will have on U.S. agriculture. One in three bites of food is reliant on pollination, which translates into \$20-30 billion to the agricultural economy. But while the action taken is well-meaning, widespread, pervasive, systemic, and persistent pesticide contamination will continue to place bees, both wild and managed, and other pollinator species at risk.

Relying on Voluntary State Plans Not Enough for Pollinator Protection

EPA has noted that state pollinator plans, known as Managed Pollinator Protection Plans (MP3s) are a means to enhance communication and risk mitigation, so that local expertise can be used to identify customized solutions to mitigate pesticide risks to bees. To this end, states are being encouraged by EPA to develop MP3s, bringing together various stakeholders at the state level.

Several critical elements for a successful MP3 have been recommended by various stakeholders, including grower/applicator communication, public outreach, best management practices (BMPs), and periodic review and modification of plans. While state input is valuable and necessary, improved communication and BMPs as recommended for these MP3s are only voluntary and not enforceable. In fact, state mitigation measures will not be tied to proposed or existing federal product labeling. Thus, relying upon individual states to respond to pollinator risks is inadequate.

Additionally, MP3s are limited to managed pollinators not under contracted pollination services at the site of application. This means that the recommended BMPs and increased grower/applicator communication, as outlined in state MP3s will only pertain to managed hives not under contract, leaving wild and native bees with minimal protection under these plans. As of now, no federal or state mitigation strategy or policy has specifically addressed risks wild/native pollinators, given that these species continue to forage in treated fields, even when managed bees are not there. Furthermore, data suggests that certain native bee species are more sensitive to pesticides than honey bees.¹

Beyond Pesticides' Recommendation for State Plans

- 1. Restrict the sale and use of neonicotinoids and neonicotinoid-coated seeds**
These pesticides have prolonged residual toxicity and can contaminate pollen, nectar, honey,² as well as persist in soil and surface waters, affecting other beneficial terrestrial and aquatic organisms. To truly protect pollinators and other organisms from these hazards, states should move to limit the sale and use of neonicotinoid products, including the sale of treated seeds and seedlings.
- 2. Create pollinator habitat that is also free of pesticide contamination**
States should implement statewide planting of pollinator-attractive native vegetation, including milkweed, along highway corridors, rights-of way, parks and natural areas, and facilitate collaboration with USDA's Natural Resources Conservation Service and the Farm Service Agency to increase state support for pollinator habitat creation.
- 3. Protect and monitor native and wild bees/pollinators**
To get a better understanding of native bee populations and the risks they face, the state should create a monitoring program, in collaboration with universities, extension services, and other private or non-governmental agencies, to track and monitor the health of native populations, adverse incidents, and the environmental factors that threaten their long-term survivability.
- 4. Improve enforcement and compliance across the state**
States should review and approve pollinator specific label statements for pesticide products that they register and determines the enforceability of the label statement to a standard that results in total compliance. These statements can and should include statements permanently restricting products or applications that pose risks to pollinators.
- 5. Improve best management practices (BMPs) that reduce pesticide risks**
BMPs need to be strong and user-friendly, while encouraging growers to utilize organic practices; avoid the use of any and all pesticides that are acutely toxic to bees; institute mandatory buffer zones in fields to eliminate pesticide drift; and create habitat areas or hedgerows that DO NOT come into contact with pesticides to provide on-site pollinator forage.

1. Rundolf, M, Anderson R, Bommarco, I, et al. 2015. Seed coating with neonicotinoid insecticide negatively affects wild bees. *Nature* 521:77-80.

2. Lu, C, Chang, C, Tao, L and Chen M. 2015. Distributions of neonicotinoid insecticides in the Commonwealth of Massachusetts: a temporal and spatial variation analysis for pollen and honey samples. *Environ Chem*. <http://dx.doi.org/10.1071/EN15064>