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Re: Recommendations to the White House Pollinator Health Task Force in Response to the Pollinator Partnership Action Plan

Dear Directors Rodan, Handelsman, Keigwin, and Kunickis,

The undersigned 20 organizations would like to take the opportunity to submit these recommendations to strengthen the Pollinator Partnership Action Plan (PPAP). Since the release of the Presidential Memorandum *Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators,* the White House Pollinator Health Task Force (the Task Force) has undertaken numerous actions to help protect pollinators. Yet still, the risks of pesticide use are consistently under-addressed.

The most recent publication from the Task Force, the PPAP, highlights various public and private stakeholder activities to better protect pollinators. The Task Force needs to further engage stakeholders

in addressing threats caused by bee-toxic pesticides. Building new partnerships to accelerate progress for pollinator protection is a valuable addition to the White House Pollinator Health Task Force's efforts. The additional partnerships recommended below will further allow the Task Force to more adequately address pesticide use.

If the Task Force fails to fully recognize and address the impacts that pesticides have on pollinators and their habitats, we worry that population declines and poor pollinator health will continue, despite efforts to expand habitat acreage throughout the United States. For this reason, we encourage the Task Force to consider the following recommendations in response to the recent PPAP announcement.

Policy recommendations for the White House PPAP:

1. **Protect conservation lands and other pollinator habitat from pesticide contamination**

The PPAP details several ongoing partnerships working to create pollinator habitat. The preservation and creation of habitat is essential to support pollinator populations. Still, action is needed to ensure that habitat areas, both conservation lands and pollinator strips, are not contaminated with neonicotinoids or other harmful pesticides.

A recently published study demonstrates that conservation areas set aside for pollinator habitat in agricultural regions may not provide honey bees with spatial or temporal relief from harmful bee-toxic pesticides.[1] Other research indicates that natural forage areas can be contaminated with numerous pesticides.[2,3] One study in particular concluded that planting seeds coated with clothianidin could lead to contamination levels on adjacent milkweed that contributes to monarch butterfly population declines.[4]

The Task Force's PPAP encourages best management practices to "minimize harm to pollinators from pesticide use." However, thus far there are no overarching federal strategies outlining measures for preventing pesticides from contaminating future pollinator habitat on public or private lands.

Similar to the action taken by the U.S. Fish and Wildlife Service that halted the use of neonicotinoid use on refuge lands, the use of high risk pesticides should be eliminated on lands designated for conservation. Furthermore, federal efforts to protect and expand pollinator habitat in other areas should include actions to reduce contamination and protect pollinators from pesticide harm. For instance, monitoring for residues of neonicotinoids and other systemic insecticides in pollinator habitat would allow regulators and stakeholders to develop better strategies for reducing or eliminating contamination in these areas. Creating partnerships with conservation organizations, land managers, growers, beekeepers, and others who could help design and implement strategies will strengthen these efforts.

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[1] Mogren, C and Lundgren J. 2016. Neonicotinoid-contaminated pollinator strips adjacent to cropland reduce honey bee nutritional status. *Scientific Reports* 6, Article number: 29608.

[2] Botías, C., A. David, E.M. Hill, and D. Goulson. 2016. "Contamination of Wild Plants near Neonicotinoid Seed-Treated Crops, and Implications for Non-Target Insects." *The Science of the Total Environment* 566-567 (May): 269–78.

[3] Long, E.Y., C.H. Krupke. 2016. Non-cultivated plants present a season-long route of pesticide exposure for honey bees. *Nature communications*. doi:10.1038/ncomms11629

[4] Pecenka, J.R., and J.G. Lundgren. 2015. Non-target effects of clothianidin on monarch butterflies. *The Science of Nature*. 102:19. Doi.10.1007/s00114-015-1270-y.

2. **Build upon existing best management practices to reduce pollinator exposure to pesticides and regulate neonicotinoid-seed coatings**

The PPAP lays out efforts from EPA, USDA, and States to adopt "best management practices for minimizing impacts of human activities, such as agriculture, on pollinator health while maintaining economic growth." However, in order to effectively evaluate and understand the impact of certain agricultural practices, like pesticide seed coatings, there needs to be greater oversight. If EPA hopes to establish strong and effective BMPs to mitigate the harmful effects that neonicotinoid-coated seeds have on bees, birds, and other pollinators, the agency must regulate seed coatings as a pesticide application.

Currently, EPA allows annual planting of millions of pounds of pesticide coated seeds on approximately 200 million acres nationwide. Almost all of U.S. corn seed and approximately half of soybean seed are coated with neonicotinoids.[5] Yet, despite their widespread and growing use, the planting of pesticide-coated seeds is not considered a pesticide application by EPA, even though the applied pesticides are transported throughout the plant as it grows, and spread throughout the surrounding environment.[6] Since the EPA does *not* consider use of these seeds a pesticide application, there is little to no regulatory enforcement or mechanism to protect against the potential misuse of or unintended harm from these seeds.

It is within EPA's authority to regulate pesticide-coated seeds as a pesticide application, and we urge the agency to modify their current interpretation to remain consistent with federal regulation of pesticides. Industry must also work with EPA to immediately transition to regulating seed coatings and ensure that labels (in English and Spanish) on all bags of coated seed are clear (especially in identifying risks to pollinators) and enforceable.

3. **Identify chemical mixtures requiring greater study**

Real-world residue data indicates that bees are exposed to a multitude of pesticides in the field. These exposures could have a layering or additive effect on bees. Furthermore, studies note that some pesticide combinations (for example demethylation inhibitor fungicides combined with either pyrethroid or neonicotinoid insecticides) can increase toxicity synergistically.[7,8,9] Already, the toxicity of the individual insecticides are high and the combination of pesticides, either applied as tank mixes or

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[5] Douglas, M.R., and J.F. Tooker. 2015. Large-Scale Deployment of Seed Treatments Has Driven Rapid Increase in Use of Neonicotinoid Insecticides and Preemptive Pest Management in U.S. Field Crops. *Environmental Science and Technology*. doi.10.1021/es5061g.

[6] Hladik, M. L., D. W. Kolpin,and K. M. Kuivila. 2014. Widespread occurrence of neonicotinoid insecticides in streams in a high corn and soybean producing region, USA. *Environmental Pollution* 193:189–196.

[7] Wachendoorff-Neumann, U. et al. 2012. Synergistic mixture of trifloxystrobin and imidacloprid. Google patents United States Bayer CropScience AG.

[8] Andersch, W. et al. 2010. Synergistic insecticide mixtures. US Patent US 7,745,375 B2. Bayer CropScience AG

[9] Johnson R.M., Dahlgren L., Siegfried B.D., Ellis M.D. 2013. Acaricide, Fungicide and Drug Interactions in Honey Bees (Apis mellifera). PLoS ONE 8:e54092; doi:10.1371/journal.pone.0054092.

[9] USEPA. 2015. EPA's Proposal to Mitigate Exposure to Bees from Acutely Toxic Pesticide Products. Office of Pesticide Programs. Washington DC

combined in the environment, can greatly increase toxicity.[10] Current methodology at EPA fails to respond to the risks of additive and synergistic effects to bees, birds, and other pollinators – an oversight that can no longer be ignored in federal pesticide risk assessments.

The recent Government Accountability Office (GAO) report, *USDA and EPA Should Take Additional Actions to Address Threats to Bee Populations*, notes that EPA can source data on commonly used mixtures from farmers, pesticide manufacturers, and others.[11] The White House Task Force's PPAP is the perfect opportunity for cultivating formal partnerships with growers, beekeepers, pesticide manufacturers, independent researchers, and others to identify and evaluate real-world chemical mixtures. This peer-reviewed data can then be used to strengthen federal risk assessments.

4. **Work with pesticide manufacturers, distributors, conservation organizations, farmers, and beekeepers to ensure pesticide labels are clear and enforceable**

Thus far, federal action for protecting pollinators has involved amending pollinator warning statements on pesticide product labels. However, regulatory action must support label language and sufficient enforcement of use restrictions for pesticides that present risk of harm or injury to pollinators and other non-target organisms. Current amended product labels, that limit only some bloom-time applications, fall short of offering meaningful protections for pollinators. The labels only consider acute impacts from pesticides and not long-term systemic exposures or the ecological risks that are inherent in the use of systemic pesticides.

As other pesticides are identified as posing risks to pollinators too, it is critical that pesticide product labels be clear and harmonized across pesticide classes and products. Furthermore, any risk assessment that drives the mitigation strategies listed on labels should be determined at the scale of use, not through isolated assessments by crop or use. Additionally, label statements must be relevant to on-the-ground conditions and enforceable. Partnerships with stakeholders can help inform label language and strategies to ensure that label restrictions are followed.

5. **Work with experts in the scientific and non-governmental community to increase protections for wild, native bees, birds, and other pollinators**

In general, wild bee populations are in decline across many landscapes.[12] Research indicates that wild bees are at particular risk from insecticide applications at different times than managed pollinators.[13] Wild pollinators are most affected by pesticides after plant bloom periods, as they continue to forage in and around pesticide-treated areas after managed colonies have moved on. Other data suggests that

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[10] Sanchez-Bayo, F and Goka, G. 2014. Pesticide Residues and Bees – A Risk Assessment. PLoS One. 9(4): e94482.; Iwasa, T., Motoyama, N., Ambrose, J.T., Roe, R.M., 2004. Mechanism for the differential toxicity of neonicotinoid insecticides in the honey bee, Apis mellifera. Crop. Prot. 23, 371–378; Pilling, E.D., Bromleychallenor, K.A.C., Walker, C.H., Jepson, P.C., 1995. Mechanism of Synergism between the Pyrethroid Insecticide λ-Cyhalothrin and the Imidazole Fungicide Prochloraz, in the Honeybee (Apis mellifera L.). Pesticide Biochemistry and Physiology. 51(1):1-11.

[11] GAO. USDA and EPA Should Take Additional Actions to Address Threats to Bee Populations. Report to Congressional Requesters. Bee Health. February 2016 http://www.gao.gov/assets/680/675109.pdf

[12] Koh, I, Lonsdorf, E, Williams, N et al. 2015. Modeling the status, trends, and impacts of wild bee abundance in the United States. *PNAS*. doi 10.1073/pnas.1517685113

[13] Park, Mia, et al. 2015. Negative effects of pesticides on wild bee communities can be buffered by landscape context. *Proceedings of the Royal Society B.* 282: 1809. http://rspb.royalsocietypublishing.org/content/282/1809/20150299

certain bee species are more sensitive to pesticides than honey bees.[14] Rundlof et al. (2015) reports that pesticide coated seed plantings reduce wild bee density, solitary bee nesting, and bumblebee colony growth and reproduction under field conditions.[15] The authors here conclude that "pesticide effects on honeybees cannot always be extrapolated to wild bees."

There are about 4,000 species of native bees in North America,[16] and differences in behavior and biology across species give rise to unique exposure risks. For instance, 70 percent of native bee species in the United States have ground/soil nests[17] where they can easily come into contact with pesticide residues, especially in agricultural regions. Wild bees contribute more than $3 billion to the U.S. agricultural economy,[18] providing pollination services in the presence and absence of managed honey bees. In fact, diverse pollinator communities, comprising honey bees, wild bees, and other insect pollinators, synergistically increase pollination services through species interactions and pollination effectiveness.[19]

By harming pollinators like bees and butterflies, and natural pest control agents like birds and beneficial insects, neonicotinoids are sabotaging the very organisms on which farmers depend. Hundreds of recent studies detail the effects on birds, butterflies, earthworms, and a wide range of terrestrial and aquatic invertebrates—effects that occur when the chemicals are applied as directed. As little as a single corn kernel coated with a neonicotinoid insecticide can be deadly to a songbird. And consumption of just 1/10th of a coated seed per day during the egg-laying season is enough to impair reproduction.[20]

Much of the harm is indirect. Elevated levels of these chemicals in many surface and ground waters are already high enough to kill the aquatic invertebrate life on which many birds, bats, and other pollinators rely.[21,22] Beneficial terrestrial invertebrates such as earthworms are also killed by the neonicotinoids at extremely low doses.[23,24]

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

[15] Rundlöf M, Andersson GK, Bommarco R, Fries I, et al. 2015. Seed coating with a neonicotinoid insecticide negatively affects wild bees. *Nature.* 521(7550):77-80.

[16] Vaugh, M, Hopwood, J, Mader, EL, et al.. 2015. Farming for Bees: Guidelines for Providing Native Bee Habitat on Farms. The Xerces Society. Available at http://www.xerces.org/wp-content/uploads/2008/11/farming_for_bees_guidelines_xerces_society.pdf

[17] Ibid

[18] Losey, J.E. and M. Vaughan. 2006. The economic value of ecological services provided by insects. *Bioscience,* 56(4): 311–323.

[19] Brittain, C, Williams, N et al. 2013. Synergistic effects of non-*Apis* bees and honey bees for pollination services. Proc R Soc B: 280: 20122767.

[20] Mineau, P and C Palmer. 2013. The Impact of the Nation's Most Widely Used Insecticides on Birds. Report by American Bird Conservancy. Online at: www.abcbirds.org/abcprograms/policy/toxins/Neonic_FINAL.pdf

[21] See, e.g., Hladik, M et al. 2014. Widespread occurrence of neonicotinoid insecticides in streams in a high corn and soybean producing region, USA. Environmental Pollution 193 (2014) 189-196. Online at: http://ca.water.usgs.gov/pubs/2014/HladikKolpinKuivila2014.pdf.

[22] Hallmann CA, et al. 2014. Declines in insectivorous birds are associated with high neonicotinoid concentrations. Nature doi:10.1038/nature13531.

[23] Van der Sluijs JP, et al. 2014. Conclusions of the Worldwide Integrated Assessment on the risks of neonicotinoids and fipronil to biodiversity and ecosystem functioning. Environ Sci Pollut Res. doi:10.1007/s11356-014-3229-5.

[24] Hopwood, J, SH Black, M Vaughn, and E Lee-Mader. 2013. Beyond the Birds and the Bees: Effects of Neonicotinoid Insecticides on Agriculturally Important Beneficial Invertebrates. Report by the Xerces Society. Online at: http://www.xerces.org/wp-content/uploads/2013/09/XercesSociety_CBCneonics_sep2013.pdf .

The GAO recommends that federal agencies coordinate to monitor wild, native bees and evaluate shortcomings in conservation practices.[25] EPA in collaboration with USDA must gather ecological data on the fitness, development, and survival of wild bees, as these species are as important as honey bees to agriculture and broader ecosystem services. Both federal agencies have a responsibility to thoroughly evaluate their risks from pesticide exposures, and protect them from further harm. Creating and strengthening partnerships with universities, non-profit conservation organizations, and others can help further this effort to gain much needed baseline data on native bees.

Conclusions

The Presidential Memorandum *Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators* prompted significant momentum towards attaining its stated goal to "reverse pollinator losses and help restore populations to healthy levels." The newly release PPAP continues the progress started by the memorandum and previous efforts to stop the concerning trend in pollinator declines. Unfortunately, one critical component of improving pollinator health, pesticide use, is sorely under-represented in this and other pollinator protection efforts initiated by the Task Force. The risks that pesticides pose to pollinators warrant greater attention. Creating and strengthening stakeholder partnerships provides an opportunity to address the impacts of pesticides on pollinators. Therefore, we urge that the Task Force expand the PPAP by adding the following priorities:

- Protect conservation lands and other pollinator habitat from pesticide contamination
- Build upon existing efforts to reduce bee exposure to pesticides and regulate neonicotinoid-seed coatings
- Identify chemical mixtures requiring greater study
- Work with pesticide manufacturers, distributors, conservation organizations and farmers, and beekeepers to ensure pesticide labels are clear and enforceable
- Work with experts in the scientific and NGO community to increase protections for wild, native bees, birds, and other pollinators

We would welcome the opportunity for continued dialogue with the Task Force to discuss how best to implement these above recommendations.

Thank you for your thoughtful consideration of this important matter.

Sincerely,

Beyond Pesticides
Center for Food Safety
The Xerces Society for Invertebrate Conservation
American Bird Conservancy
Beyond Toxics
Central Maryland Beekeepers Association
Environment America
Farmworker Association of Florida

[25] GAO. USDA and EPA Should Take Additional Actions to Address Threats to Bee Populations. Report to Congressional Requesters. Bee Health. February 2016 http://www.gao.gov/assets/680/675109.pdf

Food and Water Watch
Friends of the Earth
Maryland Pesticide Education Network
Natural Resources Defense Council
Northwest Center for Alternatives to Pesticides
Organic Consumers Association
People and Pollinators Action Network
Pesticide Action Network
Pollinate Minnesota
The Center for Biological Diversity
Toxic Free North Carolina
Worcester County Beekeepers Association