



Pollinator Stewardship Council

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Nov. 9, 2015

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Cumulative Effects of Research Suppression at USDA

The Pollinator Stewardship Council is appalled that political influence and pressure are being placed upon scientists, land managers, and land advisors at the U.S. Dept. of Agriculture. Recent independent reports concerning the suppression of research, the censorship of scientists, and now an educational program about pesticides and government sponsored research being cancelled, defining it as an inappropriate topic, is unacceptable. We demand the USDA be investigated by the Inspector General, in order for professional, responsible, ethical, scientific practice and integrity be restored to the U.S. Department of Agriculture.

Last March ten USDA scientists filed a petition¹ seeking protections to simply be able to do their job: research. (http://www.peer.org/assets/docs/usda/3_26_15_USDA_%20Rule-Making_Petition.pdf) Less than two weeks ago, USDA scientist, Dr. Jonathan Lundgren, filed The Whistleblower Retaliation Narrative (<http://www.peer.org/news/news-releases/usda-scientist-punished-for-pollinator-research.html>) documenting clear actions that violated scientific integrity. Nov. 5th a report surfaced of a USDA administrator suppressing a webinar about research concerning neonicotinoid pesticides in aquatic ecosystems. The webinar (<http://www.peer.org/news/news-releases/usda-censors-webinars-on-neonic-insecticide-risks.html>) was scheduled to present the research addressing the “*Widespread Use and Frequent*

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Detection of Neonicotinoid Insecticides in Wetlands of Canada's Prairie Pothole Region." This study found "neonicotinoid use is increasing and becoming more widespread with concerns for environmental loading, while frequently detected neonicotinoid concentrations in Prairie wetlands suggest high persistence and transport into wetlands."² This research was funded by another government agency, the U.S. Geological Survey, and examined the impact of pesticides within water: an element vital to all living things, including honey bees. Research such as this is vital to USDA programs, especially when the USDA just announced \$1.5 billion for Ogallala Aquifer Initiative to "address water scarcity and water quality issues" by providing financial and technical assistance to help with, among other land use concerns, "nutrient and pesticide management."³

The U.S. Department of Agriculture has a responsibility to protect the health and safety of the American public, and ensure long-term viability and sustainability of the environment and our natural resources. USDA research could result in the improvement of our waters which could indirectly financially benefit the agricultural community overall by requiring less regulation.

Pollinator health is experiencing the cumulative effects of pests, pathogens, pesticides, and poor forage. Pesticides impact honey bees directly through acute kills, but also through the accumulation of pesticides in pollen and nectar collected by pollinators. "*Exposure of native bees foraging in an agricultural landscape to current-use pesticides,*" clearly found native pollinators were exposed to 19 current use pesticides, including neonicotinoids, pyrethroids, organophosphates, fungicides, and herbicides. Thirty-nine of fifty-four samples of native bees tested positive for pesticides.⁴ Research has shown pesticides can affect the reproductive ability of the Queen bee, foraging behavior, bee navigation, and over-all bee health, often pre-disposing the bee to opportunistic pathogens transmitted by the Varroa mite.

Scientific evidence has implicated insecticides as a leading driver of bee declines, and herbicides as a leading driver of the destruction of pollinator habitat. Beekeepers, honey producers, and the crops pollinated by managed and native pollinators rely on USDA scientists to protect the health of our food supply. Honey bees and native bees pollinate one third of the

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human diet. Managed honey bees provide \$15B in value to U.S. agriculture providing pollination services, and increasing crop yields.

The “number of managed honey bee colonies has been relatively consistent since 1996, the level of effort by the beekeeping industry to maintain these numbers has increased. Annual surveys of beekeepers since 2006 indicate overwintering losses alone averaging around 31%, which far exceeds the 15-17% overwintering loss rate that commercial beekeepers have indicated is an economically sustainable average (Steinhauer et al. 2014). When overwintering losses are coupled with colony losses occurring during other times of the year, annual losses can be considerably higher (Steinhauer et al. 2014). This is particularly notable in the 2014-15 preliminary report of 27.4% total summer colony losses in the Bee Informed Partnership survey of a subset of national beekeepers, for total annual losses of 42.1% of colonies (Steinhauer et al. 2015). With annual losses nationally of 50% of honey bees, the beekeeping industry must breed double the amount of honey bees simply to maintain the status quo of 2.5 million colonies.”⁴

USDA researchers are needed to provide the necessary study, and analysis of the real-world exposure of the nation’s honey bees to insecticides, fungicides, and herbicides. USDA researchers, and Natural Resources Conservation Services (NRCS), a division of the USDA, need information about pesticides in the ecosystem in order to advise private and public land owners and managers how to maintain healthy and sustainable wetlands, fish and wildlife habitat, and pesticide management. *Applied research funding needs to support USDA researchers as they examine:*

- Off-site drift of acutely toxic products to blooming crops and weeds.
- Acutely toxic products being applied when honey bees are actively foraging.
- Application of extended residual toxicity products too close to bloom.
- Tank mixes of pesticide products with unknown synergisms.
- Exposure to pesticide products that cause chronic effects.
- Effects of fungicides and Insect Growth Regulators (IGRs) to honey bees.

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Suppressing research gives a false sense of the health and status of honey bees. USDA scientists need to be able to conduct research that will promote the health of honey bees. USDA scientists need to be adequately funded, be free of political influence, and be permitted to submit uncensored research for peer-review and publication. Pollinator protection is a national priority, realized at the federal, state and local levels, and advocated in the *National Strategy to Promote the Health of Honey Bees and Other Pollinators*. As defined in the *Strategy*, research needs fall into five main areas that overlap and interact to determine pollinator health:

- Population trends and basic biology
- Environmental stressors
- Land management
- Habitat restoration
- Knowledge curation

This overlapping research can only be accomplished by unfettered, uncensored USDA/EPA research activities.

All of the research the USDA conducts must maintain scientific integrity and transparency to ensure it is guiding science-based policy decisions. No U.S. Department of Agriculture scientist should be harassed, have their work censored or suppressed; or valid, peer-reviewed research from other government entities denied presentation to USDA scientists, land managers, and land advisors. We urge the USDA Inspector General's office to conduct a thorough investigation into the restrictions, constraints, and censorship of the nation's research arm concerned with protecting and sustaining the food supply. The USDA must maintain scientific integrity by not interfering with the valuable work of its scientists.

Maintaining a viable commercial beekeeping industry is critical to a sustainable and affordable food supply. Funding for applied research for this food-supply-keystone-species, honey bees, is integral to the health of honey bees, and a sustainable agricultural industry. We strongly disagree with suppressing research, especially research funded by tax-payer dollars. We are gravely concerned the recent revelations at the USDA concerning researchers, their work,

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and the education of USDA staff is putting honey bees at risk. The Pollinator Stewardship Council will continue to support scientists who are working to provide quality, unbiased science which will benefit honey bees and native pollinators, and the health and safety of all agricultural stakeholders. We call on the Inspector General to review the policies and practices at the USDA that are suppressing knowledge, research, and best management practices for land use, land management, and a sustainable food supply.

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¹ Ruch, Jeff. Petition for Rulemaking United States Department of Agriculture. 26 March 2015.
http://www.peer.org/assets/docs/usda/3_26_15_USDA_%20Rule-Making_Petition.pdf

² **Widespread Use and Frequent Detection of Neonicotinoid Insecticides in Wetlands of Canada's Prairie Pothole Region**, Anson R. Main, John V. Headley, Kerry M. Peru, Nicole L. Michel, Allan J. Cessna, Christy A. Morrissey Published: March 26, 2014, DOI: 10.1371/journal.pone.0092821
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0092821>

³ USDA, Release No. 0310.15, **USDA Expands Investment in Water Conservation and Improvement in Nation's Largest Aquifer**, Nov. 9, 2015, <http://content.govdelivery.com/accounts/USDAO/bulletins/12419cb>

⁴ **Exposure of native bees foraging in an agricultural landscape to current-use pesticides**, Michelle L. Hladik, Mark Vandever, Kelly L. Smalling, *Science of the Total Environment*, 542 (2016) 469-477, Oct. 15, 2015
<http://www.sciencedirect.com/science/article/pii/S0048969715308937>

⁵ **National Strategy to Promote the Health of Honey Bees and Other Pollinators**, page 3,
<https://www.whitehouse.gov/sites/default/files/microsites/ostp/Pollinator%20Health%20Strategy%202015.pdf>

Additional sources:

Santa Barbara Creeks Division discussing the detection of imidacloprid in local water sources
http://santabarbara.granicus.com/MediaPlayer.php?view_id=26&clip_id=6652

AP NewsBreak: Feds tell farmers to buzz off on pesticides when bees are busy on croplands, Seth Borenstein, May 28, 2015, <http://www.usnews.com/news/business/articles/2015/05/28/epa-plans-temporary-pesticide-restrictions-while-bees-feed>

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‘Neonic’ Poison Found Throughout City Creeks Division Testing After Rains Discovers Insecticide Fatal to Bees

<http://www.independent.com/news/2015/feb/09/neonic-poison-found-throughout-city/>

A Survey of Imidacloprid Levels in Water Sources Potentially Frequented by Honeybees (*Apis mellifera*) in the Eastern USA

<http://rd.springer.com/article/10.1007/s11270-014-2127-2/fulltext.html>

High Levels of Miticides and Agrochemicals in North American Apiaries: Implications for Honey Bee Health

Christopher A. Mullin , Maryann Frazier, James L. Frazier, Sara Ashcraft, Roger Simonds, Dennis vanEngelsdorp, Jeffery S. Pettis , Published: March 19, 2010. DOI: 10.1371/journal.pone.000975, <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0009754>

Overwintered brood comb honey: colony exposure to pesticide residues, Dr. Nancy Ostiguy and Dr. Brian Eitzer, Journal of Apicultural Research, vol. 53(3) pp. 413-421, July 4, 2014 <http://www.ibra.org.uk/articles/Pesticides-in-brood-comb-honey>

Sub-Lethal Effects of Pesticide Residues in Brood Comb on Worker Honey Bee (*Apis mellifera*) Development and Longevity, Judy Y. Wu, Carol M. Anelli, Walter S. Sheppard mail, Published: February 23, 2011, DOI:

10.1371/journal.pone.0014720 <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0014720>

Four Common Pesticides, Their Mixtures and a Formulation Solvent in the Hive Environment Have High Oral Toxicity to Honey Bee Larvae, Zhu W., Schmehl DR, Millin CA, Frazier JL 2014. PLoS ONE 9:e77547;

doi: 10.1371/journal.pone.0077547

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0077547>

EPA’s Proposal to Mitigate Exposure to Bees from Acutely Toxic Pesticide Products, pg. 11

<http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2014-0818-0002>

Contribution of insect pollinators to crop yield and quality varies with agricultural intensification

<https://peerj.com/preprints/184v1.pdf>