



<http://www.pollinator.org>

**Statement of
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**Before the
Subcommittee on Horticulture and Organic Agriculture
Committee on Agriculture
U.S. House of Representatives**

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Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to testify about the status of research and other activities related to the health of honeybees and other pollinators. My name is Laurie Davies Adams, and I am Executive Director of the Pollinator Partnership.

INTEREST OF THE POLLINATOR PARTNERSHIP:

The Pollinator Partnership (P2)¹ is a nonprofit organization headquartered in San Francisco, California. P2's mission is to catalyze stewardship of biodiversity. P2 places a high priority on efforts to protect and enhance animal pollinators (*invertebrates, birds and mammals*) and their habitats in both working and wild lands. More information about P2 may be accessed at <http://www.pollinator.org>.

P2 is a strong advocate of a collaborative, science-based approach. P2 is honored to have a number of beneficial pollinator partnership efforts ongoing through management of the North American Pollinator Protection Campaign (NAPPC), a tri-national, public-private collaboration of scientific researchers, managers and other employees of state and federal agencies, private industry and conservation and environmental groups dedicated to ensuring sustainable populations of pollinating invertebrates, birds and mammals throughout the United States, Canada and Mexico. NAPPC's voluntary participants from over 125 entities are working together to proactively:

- ◆ Promote awareness and scientific understanding of pollinators;
- ◆ Gather, organize and disseminate information about pollinators;
- ◆ Provide a forum to identify and discuss pollinator issues; and
- ◆ Promote projects, initiatives and activities that enhance pollinators.

Since its founding in 1999, NAPPC has been an instrumental cooperative conservation force in focusing attention on the importance of pollinators and the need to protect them throughout North America. More information about NAPPC and its collaborative efforts can be found at <http://www.nappc.org>.

¹ Founded as the Coevolution Institute, now does business as the Pollinator Partnership.

POLLINATORS PLAY CRITICAL ROLE IN AGRICULTURE AND ARE AT RISK:

Insect and other animal pollinators play a pivotal part in the production of food that humans eat—with estimates as high as one out of every three bites—and in the reproduction of at least 80 percent of flowering plants. The commodities produced with the help of animal pollinators generate significant income for agricultural producers. For example, domestic honeybees pollinate an estimated \$15 billion worth of crops in the U.S. each year, produced on more than 2 million acres. It is increasingly recognized that native bees also contribute significantly, providing “free” ag pollination services. Recent estimates credit native pollinators for providing about \$3 billion annually in crop pollination services.

The cost for pollination services as a purchased agricultural input has *actually increased at a higher rate than energy prices* over the past several years. The availability and reliability of these pollination services are no longer certain. It is thus in the economic interest of both agriculture and American consumers to help ensure a healthy, sustainable population of honeybees and native pollinators.

Today, possible declines in the health and population of pollinators in North America and globally pose what could be a significant threat to the integrity of biodiversity, to global food webs, and to human health. A number of pollinator species are at risk. Due to several reported factors, the number of commercially managed honeybee colonies in the U.S. has declined from 5.9 million in the 1940’s to 4.3 million in 1985 and 2.5 million in 1998. All indications are the problem has worsened in recent years.

About 900,000 rented colonies are employed to pollinate 500,000 acres of just one major cash crop, almonds, grown in California—and that acreage is increasing. Producers of other specialty crops are increasingly concerned about the reliability and cost of pollination services. Availability and reliability of pollination services are the top priority to producers—simply stated, *no pollination, no crop!*

CCD WAKEUP CALL FOR POLLINATOR CONSERVATION ACTION:

Even as efforts are appropriately focused on research to find out how to address Colony Collapse Disorder (CCD) and other issues related to pollinator health, there are scientifically based actions we can take. We have the scientific understanding to know that improving habitat for both honeybees and native pollinators is an important tool to improve pollinator health. Here are some conservation actions that can be taken now:

- ◆ Farmers can incorporate pollinator-beneficial practices now in their conservation efforts.
- ◆ Congress can help now by funding research and conservation provisions under the new Farm Bill to realize their potential to provide farmers and ranchers with pollinator assistance.
- ◆ USDA can help now by implementing pollinator provisions in the new Farm Bill, coordinating efforts and collaborating with the ag community and other natural resource managers.
- ◆ P2 pledges to help now by continuing to facilitate collaborative efforts on pollinator research, conservation and public awareness.
- ◆ All Americans can help now with pollinator-friendly practices in their own back yards.

NEW ECOREGIONAL GUIDES TOOL FOR NATIVE HABITAT FOR POLLINATORS:

To empower stakeholders with the information needed to move forward with pollinator habitat conservation efforts on the ground, P2 is pleased to announce the National Pollinator Week launch of the first six in a new series of practical Ecoregional Guides, “**Selecting Plants for Pollinators.**” There are 35 ecoregions in the United States, and within two years there will be a guide released for each ecoregion. Two new guides each will be released in July, August and September.

These guides are intended to be practical tools for farmers, ranchers and gardeners who want to establish habitat for honeybees and native pollinators through native plants that are specific to their own region. The guides are available in downloadable form for free at <http://www.pollinator.org> along with information about how to use them. **Exhibit 1** is a short Q&A on the guides. **Exhibit 2** is a 1-page flier on the new guides that is being widely distributed.

What is an ecoregion? Why aren't we developing guides by state or county or other familiar geographic delineation? Scientists in USDA and elsewhere told us that plants and pollinators don't “think” along state or county lines. Scientists recommended that we use an established system of ecoregions that could be used to match native plants and pollinators. Ecoregions (ecological regions, or bioregions) denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources. The biodiversity of flora, fauna (including pollinators) and ecosystems that characterize an ecoregion tend to be distinct from that of other ecoregions. These general purpose regions are critical for structuring and implementing ecosystem management strategies across federal agencies, state agencies, and nongovernment organizations that are responsible for different types of resources within the same geographical areas.

You have no idea what your ecoregion address is? P2 was struggling with a way to connect this tool to potential users. Our partners at the National Biological Information Infrastructure (NBII) pointed us to an existing online system. NBII is a broad, collaborative program to provide increased access to data and information on the nation's biological resources.

All you need is your zip code, and our online **Zip Code Habitat Locator** will connect you to your ecosystem map and guide. If the guide for your ecoregion is not yet available, you can enter your e-mail address and receive an alert when it becomes available.

For illustrative purposes, **Exhibit 3** is the full ecoregional guide for the Central Appalachian Broadleaf Forest. As indicated on the map on page 7 of the guide, this ecoregion includes the District of Columbia and parts of Virginia and Maryland, with the region portions of states from Pennsylvania to South Carolina. The first part of each guide covers standard information, including:

- ◆ Why pollinators are important, and Getting started
- ◆ Understanding the ecoregion covered by the guide
- ◆ Meet the pollinators, and Which flowers the pollinators prefer
- ◆ Developing landscape plantings that provide pollinator habitat
- ◆ Tips for—Farmers, Public land managers, and Home landscapes

Each guide provides plant-pollinator information *specific to that ecoregion*, including (1) Bloom periods; (2) Native plants that attract pollinators; and (3) Habitat hints. Finally, each guide provides additional resources and tips, including (1) Habitat and nesting requirements different pollinators; (2) Basic checklist; and (3) Where to access additional information.

It is important to emphasize that the guides are *science-based* and that great care has been taken to *avoid including any invasive species* in selecting the recommended lists of native plants specific to each ecoregion.

The guides are being funded by the National Fish and Wildlife Foundation, the C.S. Fund, the Plant Conservation Alliance, the U.S. Forest Service, and the Bureau of Land Management. P2 is providing oversight. NAPPC volunteers have provided expertise in the development of the guides. The concept was also reviewed by a number of agencies and trade associations like the American Farm Bureau Federation and the National Garden Association. The guides will undergo continuing review and can be readily updated since they are maintained online.

The ecoregional guides were inspired by “Montana Native Plants for Pollinator-Friendly Plantings,” a pamphlet published in 2005 by the Natural Resources Conservation Service (NRCS) in Montana under the leadership of David White, State Conservationist. The pamphlet was offered to farmers and ranchers and nurseries. On a trial basis, the State NRCS offered bonus eligibility points in selected cost-share programs like the Environmental Quality Incentives Program (EQIP) and the Wildlife Habitat Incentives Program (WHIP) to farmers and ranchers who opted to include pollinator habitat in their conservation efforts. P2 is conducting a follow up study under a Conservation Innovation Grant from the Montana NRCS—including a survey, field visits and a demonstration site to determine how well the program worked and how it could be made better in the future. One thing we have learned from this initiative is that native plantings differ in different parts of Montana. This helped prompt our effort to look for better approaches, which ultimately led to the ecoregional planting guides.

P2 hopes to collaborate with NRCS, using the Montana pamphlet and the improved information in the ecoregional guides to develop similar user-friendly pamphlets for other states.

NATIONAL ACADEMY REPORT BLUEPRINT FOR SCIENCE-BASED ACTIONS:

The National Academy of Sciences (NAS) released a major report in late 2006—before CCD became an issue of concern—on the status and health of pollinators in North America that included a number of recommendations on research and conservation action. That report was released at a day-long Pollinator Symposium put together by P2/NAPPC and hosted by USDA. The NAS study came about as a result of a 4-year campaign by NAPPC partners and was supported by 52 national organizations including major farm, commodity and agribusiness groups. Diverse stakeholders found common ground in the principle that sound science is essential to guiding policies and actions related to the future of pollinators. In essence, the report from a cadre of top researchers in North America recommends that we must (1) improve our scientific understanding, (2) increase awareness about the amazing world of pollinators and their importance to our food supply and healthy ecosystems, and (3) take action to protect pollinators and their habitat. These recommendations are now serving as a science-based blueprint as we move forward on research, conservation and other initiatives.

P2/NAPPC HONEYBEE HEALTH TASK FORCE RESEARCH EFFORTS:

To help address multiple concerns about the health of our nation's honeybees, last fall P2 facilitated the establishment of a Honeybee Health Improvement Task Force through NAPPC. Top scientists from universities and federal agencies were recruited and teamed up with leading representatives of the beekeeping community.

Burt's Bees stepped up and donated vital funding to support the Task Force at NAPPC's International Pollinator Summit, hosted by the Department of Interior last October. P2 applauds the leadership provided by Burt's Bees and major contributions for research on honeybee health and sustainable pollination to the University of California-Davis and Penn State by Haagen Dazs. Haagen Dazs has joined the growing P2 team this year as a partner and sponsor. An exciting but less well known story is that individuals from all walks of life are also making contributions to help support pollinator health efforts, from school children to private individuals and foundations.

The Task Force has worked to identify specific research needs that would complement research being funded by USDA. In response to a request for proposals, nineteen eligible proposals were received from applicants all around North America, totaling more than \$200,000 in funding requests. The caliber and diversity of the proposals received speak to the importance of and need for honeybee health research. The five one-year grants awarded cover a broad range of honey bee related topics such as the effects of climate or environmental variables, the effects of nutrition on honey bee physiology and/or colony health, the effects of sublethal doses of pesticides (including miticides) on honey bee physiology and/or colony health, and genetic stock improvement. A list of proposals that have been awarded follows:

- ◆ **“Assessment of sublethal effects of imidacloprid on honey bee and colony health”** (University of Maryland Foundation; Dively and Embrey)
- ◆ **“Diagnostic gene panel for honey bee breeding and disease management”** (USDA-ARS Bee Research Lab; Evans and Chen)
- ◆ **“Effects of miticide and Fumagilin-B on honey bee survivorship and immune responses”** (Acadia University; Little, Shutler, and others)
- ◆ **“Changes in hormonal and protein levels in honey bees that are experiencing migratory transportation”** (Michigan State University; Huang)
- ◆ **“Nutritional effects on intestinal health and longevity of honey bee workers”** (University of North Carolina at Greensboro; Rueppell)

A more complete description of the Honeybee Health Task Force and research projects is provided in **Exhibit 4** and at http://www.pollinator.org/honeybee_health.htm.

We appreciate the increasing efforts by the U.S. Department of Agriculture (USDA) to conduct and coordinate research on CCD and other challenges impacting honeybees and other pollinators, such as USDA's CCD research action plan launched last summer. We also applaud this Subcommittee, the Agriculture Committee and the Congress for enacting a new farm bill that for the first time includes pollinator-specific research and conservation provisions that lay the groundwork for additional action. The Pollinator Partnership is urging the Congress to provide additional funding for pollinator research and conservation in the Fiscal Year 2009 appropriations. We also urge the research and conservation agencies at USDA to take maximum advantage of the new pollinator provisions in the farm bill in implementing their programs.

NEW FARM BILL PROVIDES NEW POLLINATOR PROTECTION PROVISIONS:

P2 commends this Subcommittee and the Congress for including pollinator-beneficial provisions in the research, conservation and specialty crops titles of the new Farm Bill. A summary is available at http://www.pollinator.org/Resources/PollinatingtheFarmBill_ConferenceReportSummary.pdf.

Conservation programs can be highly effective in addressing factors which can contribute to pollinator declines including: habitat fragmentation, loss, and degradation causing a reduction of food sources and sites for mating, nesting, roosting, and migration; improper use of pesticides and herbicides; aggressive competition from non-native species; disease, predators, and parasites; climate change; and lack of floral diversity. Effective pollinator protection practices often overlap and complement other conservation practices, particularly those designed to improve wildlife habitat, and vice versa. In other instances, a practice designed to achieve wildlife or other conservation practices could generate significant pollinator benefits by integrating modest enhancements.

The focused objective of targeted modifications to authorizing language is to better equip and direct USDA research and conservation agencies to build on current pollinator-related efforts by the Agricultural Research Service (ARS), the Cooperative State, Research, Education and Extension Service (CSREES), the Natural Resources Conservation Service (NRCS) and other agencies and to help farmers, ranchers, foresters and other private natural resources incorporate pollinator needs in their conservation efforts. Pollinators, agriculture and healthy ecosystems deserve no less.

POLLINATOR IMPORTATION CAN DO MORE HARM THAN GOOD:

If CCD and other pollinator health issues continue to threaten ag pollination services, P2 cautions against scrambling to fill the void by importing non-native pollinator species from other countries or other eco-regions. If CCD proves to be a persistent problem, the pressure to allow such remedies could grow. We need to avoid compounding one problem by unintentionally creating others that could make the situation far worse. Imported species intended for a good use can quickly become out-of-control *invasive* species (including pests and diseases the imported species may carry and introduce). The unintended consequences could overwhelm the beneficial effects of research and conservation measures and actions facilitated by the Farm Bill.

This problem and the demonstrated risks involved are so great that NAPPC collaborators teamed up in 2006 and produced a “Bee Importation White Paper” focused on the risks and consequences of importing non-native bumble bees. The following excerpt captures what is at stake:

“Non-native species introductions may have dramatic negative consequences. In the last century, invasive species of all types have cost the U.S. an estimated \$137 billion in damages (Pimentel et al. 2000). Yet introductions of exotic plants and animals persist, partly because those who introduce exotic plants and animals may not fully understand or bear the consequences of their behavior (Perrings et al. 2002), which can be devastating on both economic and ecological scales.” [p. 23]

The report is available at http://www.pollinator.org/Resources/BEEIMPORTATION_AUG2006.pdf and includes a number of key recommendations. If trans-boundary shipments of pollinating species are considered, the greatest care must be undertaken in developing effective protocols to prevent such unintended consequences.

NATIONAL POLLINATOR WEEK JUNE 22-28, 2008:

June 22-28, 2008 was designated as National Pollinator Week through a proclamation by Secretary of Agriculture Ed Schafer. A number of events across the nation to celebrate and *raise public awareness about our pollinating partners and the need to take actions that protect pollinators and their habitat*. For example—

- ◆ On June 25, P2 hosted a briefing on the status and plight of bees and other pollinators.
- ◆ Governors in 26 States have signed proclamations Pollinator Week at the State level.
- ◆ Pollinator Week activities and events are occurring in at least 38 States and Canada.
- ◆ P2 has launched the first six Ecoregional Guides, “Selecting Plants for Pollinators.”
- ◆ P2 is signing a Memorandum of Understanding with the National Association of Conservation Districts (NACD), with the first action focused on the Ecoregional Guides.
- ◆ Pollinator Podcasts produced in partnership with the Department of Interior <http://www.pollinator.org/podcast.htm>.
- ◆ Free items, including “Bounty of Bees” Poster and Pollinator Wheels.

The goal is to encourage actions in support of pollinators through the year. More information is available at (http://www.pollinator.org/pollinator_week_2008.htm).

CoE stands ready to work with this Subcommittee and interested stakeholders to help ensure that honeybees and native pollinators are sustained for the benefit of agriculture, consumers and healthy ecosystems.

Respectfully Submitted,



Laurie Davies Adams
Executive Director

Exhibits (4)