



Coevolution Institute  
423 Washington Street, 5th Floor  
San Francisco, CA 94111-2339  
(415) 362-1137  
Fax: 415-362-3070  
email: info@coevolution.org

May 1, 2007

**BOARD OF DIRECTORS**

Paul J. Growald  
Chairman  
Laurie Davies Adams  
Kathy M. Christie  
William T. Hutton  
Robert J. Lamb  
Herbert E. Lembcke  
Martin J. Rosen  
Bradley A. Stirn  
Carolyn T. Zwicker

**SCIENCE ADVISORS**

Paul Ehrlich, Ph.D.  
Thomas Eisner, Ph.D.  
Adrian Forsyth, Ph.D.  
Daniel Janzen, Ph.D.  
Donald Kennedy, Ph.D.  
Peter Raven, Ph.D.  
E. O. Wilson, Ph.D.

**NATIONAL ADVISORS**

Peter Carpenter  
Yvon Chouinard  
Joan Ganz Cooney  
William Conway  
Anne Ehrlich  
Richard Goldman  
Warren Hellman  
Ira Michael Heyman  
Scott McVay  
Will Rogers  
Peter Seligmann  
Martha Stewart  
Jerry Tone  
Chuck Williams

**Submitted to the Agriculture, Nutrition and Forestry Committee, U.S. Senate**

Mr. Chairman and Members of the Committee, my name is Laurie Davies Adams; and I am Executive Director of the Coevolution Institute (CoE). CoE commends the Committee on Agriculture, Nutrition and Forestry for holding this timely hearing on the conservation policy recommendations for the Farm Bill. CoE is pleased to submit these comments for the hearing record. In brief, the Coevolution Institute (CoE) recommends that existing Farm Bill conservation, forest management, research and other programs designed to work with and assist farm, ranch and forest land managers be strengthened to better address managed and native pollinator needs by adding targeted authorizing language and supporting report language to current program authorities in the next Farm Bill. Similar opportunities exist in other Farm Bill programs, such as research and extension and forestry.

**INTEREST OF COEVOLUTION INSTITUTE**

The mission of CoE is to catalyze stewardship of biodiversity. CoE 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 CoE may be accessed at [www.coevolution.org](http://www.coevolution.org).

CoE is a strong advocate of a collaborative, science-based approach. CoE 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 nearly 140 entities are working together to:

- ◆ 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 [www.napppc.org](http://www.napppc.org). Information for those interested in pollinators can also be found at another CoE/NAPPC website [www.pollinator.com](http://www.pollinator.com) dedicated to the Pollinator Partnership, a cooperative conservation outreach program.

## **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 \$14.6 billion worth of crops in the U.S. each year, produced on more than 2,000,000 acres. It is thus in the strong economic interest of both agriculture and the American consumer to help ensure a healthy, sustainable pollinator population.

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 400,000 acres of just one major cash crop, almonds, grown in California. As one indication of the seriousness of this problem, the American Farm Bureau Federation re-activated its honey bee and apiary committee last year.

The National Academy of Sciences released a major report last October 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 CoE/NAPPC and hosted by USDA. In essence, the report recommends that we must improve our scientific understanding, increase awareness about the amazing world of pollinators and their importance to our food supply and healthy ecosystems, and take action to protect pollinators and their habitat.

## **CONSERVATION & OTHER FARM BILL PROGRAMS CAN BE “POLLINATED” TO BETTER ADDRESS POLLINATOR NEEDS**

CoE recommends that existing Farm Bill conservation, forest management, research and other programs designed to work with and assist farm, ranch and forest land managers be strengthened to better address managed and native pollinator needs by adding targeted authorizing language and supporting report language to current program authorities in the next Farm Bill. This is NOT a request for *new* programs, but rather *enhancements* to existing programs as a pragmatic approach that can yield meaningful results with limited resources.

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 agencies to build on current pollinator-related efforts by 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.

This can be accomplished by inserting modest language changes as appropriate to ensure agencies have the direction and authority in implementing programs to (1) improve awareness about the importance of

pollinators to agricultural producers and ecosystem health, and (2) work with farmers, ranchers and foresters in facilitating pollinator stewardship, protection and habitat conservation.

### **Conservation Title Programs Can Be “Pollinated”**

Candidate programs include the Environmental Quality Incentives Program (EQIP), the Conservation Reserve Program (CRP), the Conservation Security Program (CSP), the Wildlife Habitat Incentives Program (WHIP), the Farm and Ranchlands Protection Program, the Grasslands Reserve Program (GRP), the Wetlands Reserve Program (WRP) and the Watershed Rehabilitation Program, all capably operated by NRCS. Below are two examples of the kind of insertions each program should include:

**EQIP Example:** In authorizing language for EQIP [P.L. 107-171, Subtitle D], additional direction and clarification of authority regarding pollinators could be provided through insertion of “or pollinators” at the end of Section 1240(b), (e)(2), so that it would read:

“In determining the amount and rate of incentive payments, the Secretary may accord great significance to a practice that promotes residue, nutrient, pest invasive species, or air quality management, **or pollinator habitat and protection.**”

It would then be clear that the statutory authority and direction exists to provide EQIP incentive payments to help producers meet part of the costs of pollinator-friendly practices.

Pollinator protection could be added as a credit in scoring applications for cost-share assistance.

Report language could be included to encourage and direct conservation assistance and technical service providers to make producers aware of pollinator needs and pollinator-friendly practices when appropriate.

**CSP Example:** Authorizing and report language can make it clear that incorporating pollinator-friendly practices is an important component of criteria to be used in determining CSP payments.

*Priority Resource Concern*—CoE recommends that pollinator protection be designated as a Priority Resource Concern. For example, Congress could direct NRCS to include pollinator protection as a national priority resource concern for its conservation implementation programs—preferably at the national level, but at least as appropriate at the regional, state or local level.

*Seed & Nursery Stock for Pollinator-Friendly Native Plants*— CoE recommends adding report language to strengthen the availability of seed and nursery stock for native plants. NRCS has some excellent outreach efforts being developed to make producers and other land managers aware of pollinator-friendly native plants. One reported obstacle is a chronic shortage of seed and nursery stock for native plants.

### **Other USDA Programs**

While the most obvious opportunities to improve pollinator stewardship are through USDA’s conservation programs, CoE urges the Subcommittee and Committee to consider similar targeted opportunities in the research, forestry, commodity and other programs. Authorities for existing research, extension and education programs assuredly offer opportunities. Through a further exchange of ideas facilitated by the Committee and involving USDA officials and interested stake holders, other opportunities to productively “pollinate” programs could well be identified.

*Forestry Example*—Conservation assistance programs and natural resource programs operated by the U.S. Forest Service (USFS) could be similarly augmented. For example, the current Memorandum of Understanding (MOU) between CoE and USFS identifies common ground in programs dealing with healthy forests, invasive species, and resource valuation and use.

*Research and Extension Example*—Direction could be given under the Research Title to strengthen the Agricultural Research Service (ARS) and Cooperative State, Research, Extension and Education Service (CSREES) focus on pollinators, consistent with recommendations of the National Academy of Sciences report on the Status and Health of Pollinators in North America. ARS was a major funder of the NAS study and should act on the report’s recommendations.

*Extension & Gardeners Example*—Recognizing that cooperative extension and conservation district offices increasingly provide information and technical assistance to urban and suburban homeowners and gardeners, legislative and report language in the Farm Bill could be strengthened to ensure that such assistance increases awareness about pollinators and integrates the critical needs of pollinators and their habitat. This could include pollinator-beneficial information on habitat—such as appropriate native planting successions, nesting sites, water sources and shelter—and integrated pest management practices that minimize harm to pollinators.

*Ag in the Classroom*—CoE recommends that language be included to direct or encourage USDA to add a pollinator component to this excellent education program, helping to make students aware of the vital role of pollinators in their food supply and healthy ecosystems. The American Farm Bureau Federation has expressed interest in such an effort. The North American Pollinator Protection Campaign (NAPPC), a tri-national collaboration facilitated by NAPPC, recently released “*Nature’s Partners: A Comprehensive Pollinator Curriculum for Grades 3-6.*” This could be integrated into Ag in the Classroom, perhaps through a collaborative effort.

*Backyard Conservation*—CoE recommends that language be included to encourage NRCS to review and strengthen pollinator-related aspects of its “*Backyard Conservation,*” “*Conservation Where You Live,*” “*Hands on the Land,*” “*Tidbits for Teachers and Students*” and other education and outreach initiatives.

### **Integration & Coordination**

CoE urges the Committee to provide additional guidance and encouragement through appropriate report language to advance collaboration and gain efficiencies, leveraging available resources to maximum effect.

*Integrated Approach to Resource Management*—Appropriate legislative and/or report language could be added to help accelerate the goal of moving away from a ‘stovepipe,’ single resource focus in conservation practices to a more integrated approach of achieving multiple resource goals. NRCS has made significant strides in this direction, but much work remains to be done. 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. For example, a best management practice designed to reduce soil erosion properly designed can also help address other resource concerns such as pollinator habitat, wildlife and carbon sequestration. This is more efficient and effective for farmers and ranchers, resource protection and federal government programs.

*Inter- and Intra-Agency Coordination*—Report language could be included to encourage and require agencies to focus and better coordinate existing programs, both within USDA and with other agencies, to address pollinator needs.

*Public-Private Collaboration*—Report language could be included to encourage leveraging of limited resources through public-private partnerships involving stakeholders sharing similar objectives, such as via a Memorandum of Understanding with the Coevolution Institute.

## **CCD IS A SIGNIFICANT WAKEUP CALL ON IMPORTANCE OF CONSERVATION ACTION BENEFITING THE WIDER WORLD OF POLLINATORS**

Even as efforts are appropriately focused on how to address Colony Collapse Disorder (CCD) and meet farmers' vital pollinator needs, CCD should also alert us to the simple but significant fact that we can no longer take honey bees and other insect and animal pollinators for granted.

We don't know enough yet about the massive loss of honey bee colonies from CCD to be able to conclude responsibly about its extent, cause(s) or remedy. We also don't know what the impact is on agriculture and, if any, on native pollinators. We do know that forces like habitat destruction, improper use of pesticides, invasive species and global warming are placing our pollinator world at risk. We do know that Farm Bill conservation programs are key to helping farmers and ranchers take action. Here are some actions that can be taken now, even as efforts move forward to address CCD and its impacts on honey bee colonies:

- ◆ Farmers can incorporate practical pollinator-beneficial practices now in their conservation efforts.
- ◆ Congress can help now by strengthening the Conservation, Research and other titles of the 2007 Farm Bill in targeted ways to provide farmers and ranchers with improved pollinator assistance.
- ◆ Federal agencies and other stakeholders can help now by increasing and focusing the pollinator component of research and conservation programs, coordinating their efforts and collaborating closely with the ag community and other managers of our natural resources.
- ◆ CoE/NAPPC pledges to help now by continuing to facilitate collaborative efforts for the benefit of pollinators and pollinator habitats and the agriculture systems and ecosystems that depend upon them.
- ◆ All Americans can help now with pollinator-friendly practices in their own back yards.

If CCD proves to be a serious problem this year, CoE cautions against scrambling to fill the void by importing other managed 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 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 conservation measures and actions facilitated by the Farm Bill.

This problem and the demonstrated risks involved are so great that NAPPC collaborators teamed up last year 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 full report is available at [http://www.pollinator.org/Resources/BEEIMPORTATION\\_AUG2006.pdf](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 24-30, 2007**

June 24-30, 2007 was designated as National Pollinator Week through action last fall by the U.S. Senate (S. Res. 580) authored by then-Agriculture Committee Chairman Saxby Chambliss and a proclamation by Secretary of Agriculture Mike Johanns. CoE/NAPPC is planning and facilitating a number of events in our Nation's capitol and at the local level throughout the country 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 Monday, June 25, Dr. May Berenbaum, an internationally recognized entomologist and key witness at today's hearing, will be the featured speaker for the National Coalition for Food and Agricultural Research at a hill seminar in this hearing room, Dr. Berenbaum will be discussing research on the pollinator-agriculture connection.
- ◆ On Wednesday, June 27, a reception at USDA will honor famed entomologist E. O. Wilson.
- ◆ On Friday, June 29, Secretary of Agriculture Johanns and Postmaster General John E. Potter will preside over the first issue of a new pollination stamp series during a ceremony at USDA. The role of pollinators will be featured at the USDA farmer's market.

National Pollinator Week represents an excellent opportunity to highlight conservation programs under the Farm Bill and pollinator-friendly actions taken by American agriculture. CoE would be pleased to facilitate efforts by this Committee and the Congress to schedule other appropriate activities and events during National Pollinator Week and beyond.

CoE stands ready to work with this Committee and interested stakeholders to “pollinate” Conservation Title and other Farm Bill programs to help farmers and ranchers do their part in taking conservation actions to sustain and enhance habitats for managed and wild pollinators are sustained, for the benefit of agriculture, consumers and healthy ecosystems.

Respectfully Submitted,



Laurie Davies Adams  
Executive Director