

**Testimony Presented Before the Subcommittee on Fisheries, Wildlife and Oceans
Committee on Natural Resources
U.S. House of Representatives
“The Birds and the Bees: How Pollinators Help Maintain Healthy Ecosystems”
June 26, 2007**

Good afternoon, Chairwoman Bordallo and members of the Subcommittee. I am Dr. Thomas Lovejoy, and I am President of the H. John Heinz III Center for Science, Economics and the Environment.

Thank you for your leadership in holding this pollinator oversight hearing during National Pollinator Week. This Subcommittee and the full Natural Resources Committee have jurisdiction over agencies that manage federal public lands involving over 600 million acres—one-fourth of the total acreage in the United States.

I have spent a career in the scientific and policy arena on a global scale concerning the importance of biodiversity and healthy ecosystems. I am honored to have the opportunity to testify before this Subcommittee on the vital role of insects and other animal pollinators in healthy ecosystems, and their critical connections to wildlife systems on public lands.

The Coevolution Institute (CoE) has submitted a statement for this hearing record, and I commend it to the Subcommittee’s attention. CoE facilitates 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. A NAPPC task force worked tirelessly for four years in support of a survey of pollinators’ status in North America by the National Academy of Sciences, National Research Council. That report was released at a day-long CoE/NAPPC Pollinator Symposium hosted by USDA last October. At that symposium, USDA also announced a proclamation by the Secretary of agriculture designating this week as National Pollinator Week. I understand that CoE has worked diligently to assist this Subcommittee in preparing for today’s important hearing.

There are three fundamental questions at the heart of today’s hearing:

1. Are pollinators important to healthy wildlife ecosystems on public lands?
2. Is there a problem?
3. If so, what actions can or should be taken, specifically regarding management of public lands?

First, are pollinators important to healthy wildlife ecosystems on public lands? Yes, pollinators are more than important to healthy wildlife ecosystems—they are essential lynchpins. The Subcommittee has tasked witnesses to explain why pollinators are important to wildlife. As part of the CoE statement, the Subcommittee has been provided with an excellent selection of pollinator-wildlife fact sheets put together as part of the NAPPC collaboration, ranging from sage grouse, to songbirds, to bears, to invasive species. Each one also includes practical steps that can be taken to help both pollinators and their dependent wildlife species.

These examples help put a real face on why pollinators are important to the “larger” species we typically think of as wildlife. The CoE statement also describes in detail the multiple ways pollinators play an integral and essential role in supporting other wildlife species.

We often think of pollinating bees and other insects only as crop pollinators, but pollinators are equally important as “keystone mutualists” in natural habitats within in the United States and around the world. It is essential that we consider the lives and welfare of pollinators and their co-adapted flowering plants, as essential ecosystem components of our own food production systems and for the continued health of our wildlands; forests, wetlands, deserts, prairies, mountains and meadows.

Flowering plants and the myriad animals dependent upon them for food, nesting materials and shelter could not survive or reproduce without pollinators. Roughly 200,000 species of animals around the world visit 75 percent of the known quarter million angiosperm species, or flowering plants. Pollination (the transfer of pollen grains from flower to flower on the same or different plants) results in fruit and seed formation. Without pollination the world would be a vastly different place for all life.

Pollination is one of a number of essential “ecosystem services” insects provide, including animal and plant decomposition, soil formation, bioturbation and nutrient cycling. Pollinators themselves are also food for other animals. Some vertebrate animals are pollinators. At least 1,035 vertebrates are effective pollinators; at least 219 mammals including 168 bat species, 659 bird, and 2 lizard species visit flowers and dependably pollinate them.

Second, do we have a problem? I do believe we have a problem. At least we now know enough that we should be prompted to take practical steps to sustain and enhance pollinators and their habitat, even as we endeavor to learn more. Let me start by quoting a statement put forth a decade ago by eminent biologist E.O. Wilson—a view which I share: “The evidence is overwhelming that wild pollinators are declining around the world. Most have already experienced a shrinking of range. Some have already suffered or face the imminent risk of total extinction. Their ranks are being thinned not just by habitat reduction and other familiar agents of their impoverishment, but also by the disruption of the delicate ‘biofabric’ of interactions that bind ecosystems together. Humanity, for its own sake, must attend to the forgotten pollinators and their countless dependent plant species.”

As my fellow witness, the distinguished NAS panel Chair, Dr. Berenbaum will confirm, there is a great deal we do not yet know. However, what we do know is cause for serious concern. I will defer to Dr. Berenbaum and the NAS report for specifics.

In general we do know that a range of human activities and landscape transformations are adversely impacting pollinators and species that depend upon them—including wildlife and we ourselves as humans. We do know that massive habitat loss, fragmentation and degradation, invasive species, misuse of pesticides, and now perhaps, global climate change, are among the causal factors that are arguably placing a growing number of pollinators and wildlife ecosystems at risk. We do know that researchers are identifying a growing list of pollinators that are threatened or critically imperiled. We do, or at least should, know that humans are adversely

affected by pollinator losses—in terms of both the food we eat and the ecosystems of which we are a part.

We are finding in many cases when we look more closely at efforts to sustain and restore wildlife and natural ecosystems that the presence or absence of either native plants or their pollinating partners may hold the key to success or failure. For example, field researchers are finding that efforts to restore native grassland ecosystems can fail if pollinating partners for native flowering plants and forbs are missing.

Third, what actions can or should be taken, specifically regarding management of public lands? There are a number of practical steps that can and should be undertaken in the management of public lands to benefit pollinators and pollinator habitat. Federal agencies under the jurisdiction of this Subcommittee and the full Natural Resources Committee have responsibility for oversight and management of about 640 million acres in the U.S.

In the past, little or no consideration has been given to pollinators or pollinator habitat in the management of our nation’s federally or privately managed public lands. In my opinion, while significant additional action is needed, we do not need new programs to benefit pollinators and improve pollinator habitat and the wildlife ecosystems of which they are a part. That is indeed fortunate given the realities of scarce resources and tight budgets. Existing federal land management programs can be efficiently and cost-effectively “pollinated” to increase awareness about pollinators and integrate pollinator-beneficial practices into natural resource management.

We can start by improving the research and scientific understanding about pollinators and their role in our wildlife ecosystems. Importantly, we need not, and should not, wait to take practical management steps that will benefit pollinators and pollinator habitat. One basic step involves educating the public and indeed agencies’ own natural resource managers, from headquarters to the field, about pollinators and pollinator-beneficial plant regimes. Then the important next step is to integrate native plantings and other pollinator-beneficial practices into our natural resource management efforts. Success happens one landscape, one ecosystem, at a time.

The CoE statement lists some examples of pollinator-friendly practices for public land management. In brief—

- ◆ Promote and maintain diverse communities of native plants that bloom from spring to fall, whenever possible.
- ◆ Provide nesting areas for native bees and other pollinators.
- ◆ Whenever possible, leave standing dead trees or dead limbs in place as nesting sites for leafcutter and mason bees, and vital habitat for other wildlife.
- ◆ Avoid large-scale aerial insecticide spraying. Use integrated pest management. If sprays are necessary, apply materials at night when pollinators are inactive. If prescribed burns are needed, try to burn when resting stages (pupae) of larvae of butterflies, moths, flies and beetles are not present.
- ◆ Manage invasive plants which may choke out native plants and lessen or eliminate natural floral resources (pollen and nectar) for native bees and other pollinators.

- ◆ Avoid conditions that may favor non-native introduced bees to become established and increase their populations.
- ◆ Create topographic and biotic diversity in habitats.

I am encouraged that federal agencies are increasingly recognizing the need to include pollinators and pollinator habitat in their natural resource management missions and are taking action. Under the Natural “Resources Committee’s jurisdiction, representatives of the Department of Interior’s U.S. Fish and Wildlife Service, National Park Service, U.S. Geological Survey and Bureau of Land Management have been actively involved in NAPPC from the beginning. The same is true for the U.S. Forest Service in the Department of Agriculture.

These collaborative relationships have grown to the point at which the Fish and Wildlife Service, National Park Service and Forest Service have all signed Memoranda of Understanding with MOU’s with CoE. The U.S. Geological Survey, which cosponsored the NAS study on pollinators, is working toward a Memorandum of Understanding with CoE. This week, during National Pollinator Week, the Bureau of Land Management and CoE will sign a Memorandum of Understanding. Each of these agreements and partnerships represents a commitment to working together for the benefit of pollinators.

Despite limited resources, a number of modest but important actions are underway, led by efforts to educate the public about the importance of pollinators and actions individuals can take to benefit pollinators.

While this evidence of progress should be recognized and celebrated, especially during National Pollinator Week, the sobering reality is that I believe we have barely scratched the surface in terms of what can and arguably must be done in the coming years. Resources committed to date have been at best been minimal. Much of the progress to date has been a function of individual agency employees who have recognized the importance of pollinators and go above and beyond their job responsibilities in trying to creatively make a difference. They are certainly to be applauded.

Finally, this Subcommittee and the Congress can play an important and historic role in improving the management of our nation’s public lands for the benefit of pollinators and wildlife ecosystems. The oversight hearing today is a strong beginning. I would urge the Subcommittee to complete the public record and lay the groundwork for future action by asking a number of questions, particularly of the federal agencies under your jurisdiction

- ◆ What other threats do our pollinating partners in wildlife ecosystems face that we need to be paying attention to?
- ◆ Do the natural resource agencies specifically include and appropriately recognize pollinators and pollinator habitat in their mission statements and implementation plans? If not, are there plans to do so?
- ◆ What are agency researchers, or researchers funded by the agencies, doing to increase the scientific understanding about the role of native pollinators in wildlife ecosystems, and best management practices that protect and benefit pollinators and their habitat?
- ◆ What are the role and impact of European honeybees, both positive and negative on wildlife ecosystems; and what are appropriate policies and management measures?

- ◆ Are the agencies undertaking or planning any additional research as a result of the NAS report?
- ◆ Are the natural resource agencies coordinating their pollinator-related programs and activities? Can they do a better job of coordinating, for the net benefit of pollinators, wildlife and their respective agency missions?
- ◆ What statutory authorities guide the natural resource agencies in their pollinator-related efforts?
- ◆ What are natural resource managers doing to better manage their pesticide use to minimize impacts on pollinators?
- ◆ Are natural resource managers implementing any pollinator conservation measures?
- ◆ Shortages of native plant seeds and nursery stock reportedly limit efforts to establish native pollinator habitat. How would the natural resource agencies address this shortage?
- ◆ Do the natural resource agencies need any additional authority from the Congress?
- ◆ If additional funding were to be made available, how would the natural resource agencies proposed putting additional resources to best use to protect and restore pollinators and pollinator habitat in wildlife ecosystems?
- ◆ What plans do the natural resource agencies that have signed MOU's with CoE to implement meaningful partnership efforts?
- ◆ Can natural resource agencies leverage scarce resources to maximum benefit by investing some funds in projects through partner groups like the Coevolution Institute and the North American Pollinator Protection Campaign?

Armed with additional information, this Subcommittee and the Congress could evaluate whether authorizing legislation is needed to strengthen existing authorities to adequately address pollinator needs, as well as whether additional funding is required, and for what purposes.

Thank you again for the opportunity to testify on this important and timely subject. I would like to request that my full prepared statement be included in the record, and I would be pleased to respond to any questions.