

**TESTIMONY OF DR. MAMIE PARKER, ASSISTANT DIRECTOR FOR FISHERIES AND HABITAT CONSERVATION, UNITED STATES FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR, BEFORE THE HOUSE NATURAL RESOURCES SUBCOMMITTEE ON FISHERIES, WILDLIFE, AND OCEANS, REGARDING POLLINATORS**

June 26, 2007

Madam Chairwoman and Members of the Subcommittee, thank you for the opportunity to provide the testimony of the Department of the Interior on the importance of pollinators to fish and wildlife resources. I am Dr. Mamie Parker, Assistant Director for Fisheries and Habitat Conservation of the U.S. Fish and Wildlife Service, Department of the Interior. I appreciate the opportunity to appear today before the Subcommittee to discuss what the U.S. Fish and Wildlife Service (Service) and the Department of the Interior are doing to conserve and protect pollinators.

Let me begin by noting that I am joined by Dr. Kevin Hackett, the National Program Leader for Bees and Pollination, Agricultural Research Service, United States Department of Agriculture. I understand that Dr. Hackett's testimony will focus largely on non-native or domesticated bee populations and the phenomenon known as Colony Collapse Disorder (CCD). While public attention to date has focused on the decline of these domesticated bee colonies, there is also significant decline in the populations of wild pollinators, including familiar insects such as bumblebees and butterflies, but which also may include birds and mammals. As Dr. Hackett states in his testimony, wild, native bee populations have not been monitored to any significant extent, thus we do not know if there is any similar syndrome in native pollinators.

My testimony today will address the importance of wild native pollinators, the threats they face, current federal activities to conserve and protect them, and how pollinators hold an important connection with people. Due to the broad threats and impacts to wild pollinators, Service conservation efforts range from enhancing habitat on the National Wildlife Refuge System, to extending these efforts in cooperation with other land management agencies and private landowners, to international efforts along migratory pathways. Protection efforts include working with a broad coalition of partners, and working with other agencies to determine impacts to pollinators from agency activities.

**Importance of Pollinators**

Behind the peaceful facade of flowering meadows, lush gardens, and stately trees, an almost invisible battle for survival is raging across the nation. The Service, the U.S. Geological Survey (USGS) and other scientists are studying pollinator populations, and a number of scientific reports have documented alarming declines in the populations of some insects, birds, and mammals whose foraging is key to the spread of pollen from plant to plant.

Collectively referred to as pollinators, these creatures are critical to the life cycle of seed-bearing plants. Without them, the ability of agricultural crops and wild plants to produce food products and seeds is jeopardized. Human intervention in the seed cycle may not provide an adequate substitute for natural pollinators simply because the specific pollination needs of most native plants are unknown.

Scientists have determined that habitat loss, poisoning, disease, and competition from non-native species are triggering the demise of pollinator populations. At least three quarters of all flowering plants depend on animal pollinators, which include some birds and mammals and many insects. Researchers are studying the ecology and population biology of insect, bird, and mammalian pollinators to better understand their crucial role in ecosystem processes.

Pollinators play an important role in the management of threatened and endangered species. Certain species of plants may evolve closely with one or only a few species of pollinators. Because of their close ecological ties, when either the pollinator or the plant declines, the other is adversely affected. For example, the lesser long-nosed bat is the primary night pollinator of the saguaro and the organ pipe cactus, two important cacti of the Sonoran desert ecosystem. The timing of the migration of the bats from Mexico closely corresponds to the timing of the blooming of the cactus flowers. Blossom and bat are closely adapted to each other: the flower provides food in the form of nectar and the bats consume it. In the process, the bats pollinate the flowers. Research has shown that in recent years the time of blooming in some species has changed significantly, likely due to changing temperatures. These changes may disrupt the plant-pollinator relationships, jeopardizing both species. The Service, the USGS, and other Federal and academic entities are supporting the development of a new USA National Phenology Network, which will help collect the data needed to better understand these relationships.

Some other endangered and threatened pollinator species include the Karner Blue Butterfly in Wisconsin and the Hawaiian crested honeycreeper bird. Pollinators are also essential to the reproduction of some federally listed plant species. The Pua'ala plant found on cliffs in Moloka'i has only one known pollinator, a moth which is now believed to be extinct. As a result, the plants were hand-pollinated by climbers who rappelled off the cliffs to reach the plants, until they were brought into cultivation. Another threatened plant is the Mead's milkweed, found in Iowa, Illinois, Indiana, Kansas and Missouri, which has declined at least in part because of a scarcity of pollinators.

In all, more than 100,000 different animal species (perhaps as many as 200,000) play roles in pollinating the 250,000 kinds of known flowering plants on this planet. In addition to countless bees, wasps, moths, butterflies, flies, beetles and other invertebrates, as many as 1,500 species of vertebrates such as birds and mammals serve as pollinators, including hummingbirds, perching birds, flying foxes, fruit bats, possums, lemurs and even a lizard (gecko).

These usually small and often unobtrusive creatures do not come immediately to mind when we think of the National Wildlife Refuge System. However, pollinators can be

considered guardians of the biological integrity of ecosystems, and with the National Wildlife Refuge System Improvement Act of 1997 came new responsibilities to “ensure that the biological integrity, diversity, and environmental health of the system are maintained.” Addressing their needs often has broader implications related to managing for biodiversity and biological integrity in general. We often think of birds as the indicators of environmental conditions, yet pollinators may be a far better way to measure whether an ecosystem is intact and healthy. When pollinators are in trouble, ecosystems are in trouble.

Likewise, as a critical component to ecosystem sustainability, pollinators are important to the nation’s economy. More than 75 percent of flowering plants rely on pollinators, and pollinators are responsible for an estimated \$15 billion worth of services to agriculture. Many of our fruits, vegetables, and nuts, as well as other food products rely on pollinators for reproduction or to increase crop yields. While the importance of a healthy pollinator population to agriculture is readily apparent, it is just as important to sustaining the food supply for fish and wildlife. For example, the diet of many migratory birds includes berries, fruits, or seeds that require pollination.

### **Threats to Pollinators and Service Response**

The Service reviewed a recent study of pollinators in North America by the National Academy of Sciences (NAS), which confirmed previous findings that populations of some wild pollinators, including bumblebees, some butterflies, bats and humming birds, are declining. The NAS report suggests declines in wild pollinators may be a result of habitat loss, fragmentation and degradation, and a possible disruption of plant-pollinator relationships due to climate change, among other factors.

As Dr. Hackett notes in his statement, it is also well established that the improper use of agricultural chemicals can negatively impact pollinators, particularly on a local scale. Insecticide application can harm pollinators directly, while the use of herbicides can eliminate valuable nectar sources. In some cases this can lead to reduced crop yields.

Due to the important relationship between pollinators and the rest of the ecosystem, including other fish and wildlife, the Service believes an increased focus on pollinators is warranted. The NAS report found inadequate data on the status of many pollinators, with a need for surveys of pollinators and plants, as well as an increased awareness of the important role they hold. It recommended creating economic incentives for pollinator conservation without creating additional barriers to protecting pollinators.

Because the federal government owns approximately 672 million acres of natural resource lands – almost 30 percent of the land area of our country - this vast land base offers tremendous opportunities for the conservation of pollinators in North America. There are also tremendous challenges, such as controlling the spread of invasive plant species that may disrupt native species important to pollinators.

In October 2005, the Service signed a Memorandum of Understanding (MOU) with the Coevolution Institute, who administers the North American Pollinator Protection Campaign (NAPPC), agreeing to work together on pollinator conservation and education. NAPPC is a collaboration of people from over 100 government agencies, non-government organizations, educational institutions and businesses who are dedicated to pollinator conservation and education. The U.S. Forest Service and National Park Service also have MOUs with the Coevolution Institute, and the Bureau of Land Management expects to finalize its MOU with the Institute this week. In addition to providing technical assistance to NAPPC in the development of plant and pollinator fact sheets, the Service plans to host the upcoming 2007 NAPPC meeting in October as well as a number of outreach events.

The Service also contributes to NAPPC through participation on NAPPC's Public Land Managers Task Force, which is developing guidance for agencies to enhance pollinator friendly land management practices and to conserve habitat. This working group includes other federal agencies, such as the Bureau of Land Management and the U.S. Department of Agriculture. The guidance under development will encourage conservation activities that promote native, pollinator-friendly plant species in habitat restorations, and the use of integrated pest management techniques to minimize the impacts of pest control on pollinators. Conservation activities will also include recovery efforts for endangered and threatened pollinators and pollinator-dependent plants. Outreach and educational efforts about these activities are available and shared with visitors to public lands, including the 38 million visitors to National Wildlife Refuges.

An example on federal lands includes efforts by the Service to create pollinator gardens and butterfly trails on National Wildlife Refuges and to use native species for landscaped plantings and restoration sites in national parks, ensuring food and habitat for pollinators. One of the most recognized and loved of our pollinating insects is the monarch butterfly and some refuges are creating Monarch Habitat Areas or Way stations. These are pollinator gardens that provide milkweeds and nectar sources needed to sustain monarch butterflies as they migrate across North America. These projects complement our work with neighboring countries to research, conserve and restore shared pollinators, such as bats and monarch butterflies. A number of these refuges are part of a project started by the Canada, Mexico, U.S. Trilateral Committee, a committee created by the conservation agencies for the three countries to manage and conserve wildlife and their ecosystems in North America. The Committee's Monarch Butterfly Sister Protected Area Network is a project to link monarch conservation efforts among protected areas in Canada, the U.S., and Mexico. In conjunction with these activities, the refuge system participates in a federal interagency Monarch Work Group. Today, I would like to inform the Committee of a new interagency website on monarch butterflies that will be launched this week in celebration of National Pollinator Week.

Service efforts extend beyond our refuge lands, and even our country's borders. The Service provides funding for pollinator conservation through the Wildlife Without Borders Mexico Program, while assisting international wildlife trade control and monitoring for many pollinator species. Through our International Affairs program, the

Service funds and coordinates a series of projects addressing outreach, restoration, and protection of wintering habitats and migratory routes of Monarch Butterflies. Similarly, under the Neotropical Migratory Bird Conservation Act, the Service has provided grants to other countries for on-the-ground conservation activities that benefit migratory birds, including many pollinators.

The Service also works with private landowners through our Partners for Fish and Wildlife, Endangered Species, and Environmental Contaminant Programs to implement pollinator friendly management practices. Both the Environmental Contaminant's Natural Resource Damage Assessment and Restoration Program and the Partners for Fish and Wildlife Program protect and restore habitats that are important for pollinators. Through our Partners for Fish and Wildlife Program alone, we restore or enhance nearly 250,000 acres of uplands annually, including valuable pollinator habitat such as prairies and shade-grown coffee plantations. Similarly, the Service is working with States and other partners to implement habitat conservation and species-specific actions for pollinators in conjunction with State Wildlife Action Plans.

Beyond habitat conservation, the Service is also working to reduce direct threats to pollinators. This includes working with energy companies to minimize the impact of power lines and wind turbines on migratory birds and bats. To address the threat of pesticides to pollinators, at the request of the Environmental Protection Agency, Service contaminant specialists consult on certain pesticide registrations and re-registrations to ensure that potential impacts to fish and wildlife, including wild pollinators, are considered. Service contaminant specialists also review pesticide use on Service lands to ensure that non-chemical alternatives for managing pests are fully considered and that risks to non-target plants and animals are reduced by selecting the least hazardous, yet effective, pesticides and application methods, in accordance with recently adopted Departmental policy on Integrated Pest Management. This policy further enhances the protection of pollinator species by directing all Departmental bureaus to accomplish pest management through cost-effective means that pose the least risk to humans, natural and cultural resources, and the environment.

While there is much we are already doing to support pollinator conservation and education, there is always more to do. We look forward to continuing to work with other agencies and private partners on pollinator conservation and education cooperatively and proactively.

### **Pollinators and People**

Actions taken to benefit pollinators, such as habitat protection, restoration of native plant communities, and use of integrated pest management techniques, impact other wildlife species while also benefiting people by improving water quality and increased ecosystem health.

Beyond this direct contribution to ecosystem health, our economy and food supply, pollinators play an important role in people's understanding of our world and the balance

of nature. As the Department recently testified, the Service is engaging children by refocusing existing activities and initiating new activities that encourage the direct interaction of children with nature. Activities centered on pollinators are a great way to connect children to nature, as most children are familiar with pollinators and lessons can be taken outside, allowing children to make their own discoveries about how the natural world works. Many questions can be explored with little or no equipment required. For example, how can wind-pollinated flowers be distinguished from animal-pollinated flowers? What does the color, shape or smell of a flower tell us about the type of organism that is likely to pollinate it? What happens if pollinators aren't available? Such efforts connect our children with the natural world, and, in turn, help build a future constituency for our larger natural environment.

As part of the Service's efforts to connect children and nature, the Partners for Fish and Wildlife Program will also continue to create Schoolyard Habitats across the country. Each Service region will initiate at least one school yard habitat program in 2007, which includes working with the schools by providing expertise on native plantings and creation of habitats that attract wildlife. These efforts will bring outdoor experiences right to the children's front door.

### **Conclusion**

In closing, Madam Chairwoman, pollinators are critically important to the ecosystem, and therefore to the fish and wildlife conservation mission of the Service. They are also critical to a sustainable economy and food supply. The Service will continue to collaborate with partners to increase understanding of the role of pollinators, while working to conserve and restore habitat and ensure that these species continue to receive important protections.

This concludes my testimony. We will use our existing authorities to focus on the conservation of pollinators and would be pleased to work with the Subcommittee on other opportunities to protect and restore those critical wildlife resources. I would be pleased to answer any questions that you or members of the Subcommittee may have.