

# flylines

WINGS ACROSS THE AMERICAS OF THE US FOREST SERVICE

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March 2013

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For more information on the Wings Across the Americas, visit <http://www.fs.fed.us/global/wings> or contact the Program Coordinator, Greg Butcher, at 202-644-4551.



*Wings Across the Americas* is a program that engages the entire US Forest Service and its partners to conserve birds, bats, butterflies and dragonflies across landscapes and boundaries.

### RECOVERING THE KIRTLAND'S WARBLER: CONSERVING AT HOME AND OVERSEAS

The recovery of the Kirtland's Warbler is being hailed as a great success in the conservation world. As recently as 1987, the Kirtland's Warbler population was at an all-time low: only 167 singing males were left. The US Forest Service and other organizations forged strong partnerships to save this species. Individuals—such as Phil Huber, a wildlife biologist on the Huron-Manistee National Forest, who has dedicated 30 years



*The successful recovery of the Kirtland's Warbler is due to strong partnerships in the United States and in the Bahamas. (Photo courtesy of US Fish and Wildlife Service)*

to conserving the warbler and other species—have also been committed to conserving this bird. All together, they addressed conservation of the Kirtland's Warbler through sound management practices for the bird and its habitats in the United States and overseas. The result was staggering. By 2012, there were already more than 2,000 singing males.

The Kirtland's Warbler is a Neotropical migrant. It spends 4-5 months in its summer breeding

habitat on public lands and National Forests in Michigan, Wisconsin and Ontario, and spends the winter in the islands of The Bahamas.

Approximately 215,000 acres are dedicated to Kirtland's Warbler conservation in Michigan. The Huron-Manistee National Forest, Hiawatha National Forest, Michigan Department of Natural Resources, and US Fish and Wildlife Service have been actively managing these areas. About 3,900 acres are planted with jack pine annually to ensure that there is sufficient habitat for the species to maintain the population above the recovery goal of 1,000 pairs.

Historically, fire has been important in providing enough breeding habitat for the warbler, but now mechanical disturbance is used as a substitute.

In addition to the investments made domestically in protecting this bird and its habitat, conservationists realized that it was equally important to manage and protect its habitat overseas. Joe Wunderle of the US Forest Service and Dave Ewert of The Nature Conservancy, in collaboration with Eric Carey

## GOALS OF WINGS ACROSS THE AMERICAS:

- Conserve migratory species that breed in North America throughout their range and throughout the year
- Increase our knowledge of migratory species and the threats to their populations throughout their range and throughout the year
- Help recover endangered species and prevent other species from becoming listed
- Promote international conservation initiatives so that conservation efforts in the United States are not undermined by conservation problems in other countries
- Build partnerships with like-minded individuals and organizations to promote conservation of migratory species both inside the United States and internationally
- Build upon the love that people already have for migratory species and give people tools to contribute to their conservation
- Encourage employees throughout the Forest Service (and their partners) to contribute to the conservation of migratory species throughout their range and throughout the year
- Train conservation professionals and volunteers so that they may better contribute to migratory species conservation
- Promote migratory species as indicators of the health of the wider environment for people and other species of wildlife



*Engaging local community is part of the efforts to conserve the Kirtland's Warbler in its wintering habitat in The Bahamas. (Photo courtesy of The Bahamas National Trust)*

of the Bahamas National Trust, have been studying a population of wintering warblers on Eleuthera in The Bahamas for the past 10 years. They have found that these birds use young, low-stature habitats that have been heavily disturbed and frequently feed on three species of fruit-bearing shrubs for their winter food. Lately, they have been experimenting with the use of goats to see if goat browsing can maintain the three important fruit-bearing

shrubs. A vital component of the winter work has been to engage the local community and Bahamian conservationists to preserve ideal habitat conditions and winter food sources.

One of the main conclusions of the recent work on Kirtland's Warbler is that active conservation management will be required—probably forever—to maintain current population levels. At both ends of the migration, the warblers require disturbance of some type to maintain their required habitats, and land managers will almost certainly need to promote that disturbance. On the breeding grounds, cowbird populations will require continuous control. On the wintering grounds, relationships with private landowners will need to be maintained. To help with this ongoing work, the National Fish and Wildlife Foundation has started the “Kirtland's Warbler Initiative” with Huron Pines, a non-profit organization in Michigan that will establish a trust fund to guarantee continued conservation efforts for the warbler.

All the work has been coordinated through the Kirtland's Warbler Recovery Team, a group of agency biologists and managers responsible for management of the species, which has overseen the recovery of the species. The Kirtland's Warbler Recovery Team is made up of specialists from the US Forest Service, Michigan Department of Natural Resources, US Fish and Wildlife Service, California University of Pennsylvania, The Bahamas National Trust, and Environment Canada.

Funding for wintering grounds work has been primarily provided by US Forest Service International Programs, the US Forest Service Institute of Tropical Forestry, US Department of Defense, The Nature Conservancy, Huron-Manistee National Forests, the US Fish and Wildlife Service, and many universities.



*Because of warmer climates, the Glacier Lily is flowering early and, thus, can no longer provide adequate nectar for the returning Broad-tailed Hummingbird.  
(Photo courtesy of National Park Service)*

## **BUILDING A LARGE NETWORK TO SAVE OUR SMALLEST BIRDS**

The world's smallest birds may be in trouble. An ever-changing climate may be disrupting a natural sequence of events: the arrival of hummingbird species in the United States and the blooming of specific flowers, on which they are dependent for food. A recent study by David Inouye, of the University of

Maryland, and his colleagues have found that in the Rocky Mountains, for example, there has been a gap between the arrival of the Broad-tailed Hummingbirds and the first flowering of the Glacier Lily, which they have relied on for food after having migrated long distances. Lengthening days provide a signal for the birds to begin their journey north, and that timing remains unchanged. However, the Glacier Lily has recently begun blooming earlier than expected because of earlier snowmelt, and as a result the hummingbirds have been left without any food sources when they alight.

Recognizing these and other threats, the United States, Canada and Mexico—which share similar species of hummingbirds—have created a growing network of conservation organizations. The Western Hummingbird Partnership ([www.westerhummingbird.org](http://www.westerhummingbird.org)), which includes the US Forest Service, is committed to saving this miniature bird by building an effective and sustainable hummingbird conservation program, through science-based monitoring, research, habitat restoration/enhancement and education/outreach efforts. Sue Bonfield, Executive Director of the Environment for Americas, which is home to International Migratory Bird Day, is the new coordinator of this partnership.

This trilateral collaboration has spearheaded several activities to study hummingbird species. One member organization, Audubon Arizona, is piloting studies of hummingbird and plant phenology as part of its youth education program at the Rio Salado Nature Center in Phoenix, AZ. The study introduces visitors to nectar-producing plants, their dependent hummingbirds, and the timing of the events in the lives of both flora and fauna. Participants take part in planting and studying flowers and in recording hummingbird flower visitation patterns. The data collected will feed into a database created by the USA-National Phenology Network. The Western Hummingbird Partnership will expand this pilot study to other parts of the United States to determine

## **THE US FOREST SERVICE IS COMMITTED TO HUMMINGBIRD CONSERVATION**

In the US Forest Service, a sub-committee, chaired by Cheryl Carrothers, is now dedicated to hummingbird conservation. There is representation from the different Agency Regions. If you are interested in becoming engaged, please contact Cheryl at [ccarrothers@fs.fed.us](mailto:ccarrothers@fs.fed.us). The following are currently members:

- Janie Agyagos R3
- Lisa Nutt R4
- Lisa Young R4
- Chrissy Howell R5
- Adam Rich R5
- Barb Bresson R6
- June Galloway R6
- Trisha Johnson R6
- Jamie Ratliff R6
- Patty Walcott R6
- Aja Woodrow R6
- Gwen Baluss R10
- Brian Logan R10
- Will Young R10
- Larry Stritch WO



*The US Forest Service is one of several organizations that make up the trilateral Western Hummingbird Partnership, which is committed to the conservation of the world's smallest birds. (Photo courtesy of Carlos Soberanes González)*

whether such disconnects are occurring between other species and their nectar plants.

Another activity is the development of an extensive species matrix of hummingbirds and their known forage plants by Claudia Rodríguez-Flores of Universidad Nacional Autónoma de México. This species matrix has been incorporated into the hummingbird database on the Western Hummingbird Partnership website ([www.westernhummingbird.org/index.php?page=species&hl=english](http://www.westernhummingbird.org/index.php?page=species&hl=english)).

In the summer of 2013, two pilot banding projects will begin in Alaska on National Forests. These projects arose out of hummingbirds that were captured in the state but had migrated from as far south as Florida and Mexico.

## **THE MONARCH BUTTERFLY WORLD OF DR. KAREN OBERHAUSER**

There is something about the monarch butterfly that inspires passion. Dr. Karen Oberhauser is one of several scientists in North America who is using it to further science education and habitat conservation and to instill that enthusiasm within children and communities.

At the University of Minnesota, Karen's position is split between a traditional faculty appointment and an extension appointment. Most extension professors focus on reaching out to the people of their home state, but Karen has created a trinational audience of people determined to help monarchs along their migration paths from Canada and most of the United States to their winter homes in California and Mexico. Karen also uses a variety of tools to promote education and conservation, including scientific and popular publications, teacher education, citizen science, and a foundation (the Monarch Butterfly Fund) to support monarch conservation in Mexico.

At the University, Karen runs the MonarchLab and manages several projects there. One major initiative is Monarchs in the Classroom, which includes a variety of projects based on the premise that this butterfly species provides an ideal focus for science



*Dr. Karen Oberhauser's passionate commitment to conserving monarch butterflies is infectious.*

education and that learning about monarchs will make people more interested in preserving them. The Monarch Larva Monitoring Project, is a large-scale citizen science project that engages hundreds of people in intensive monarch research in gardens, along roadsides, in parks, and other natural areas. Lastly, Schoolyard Ecology Explorations encourages teachers to use the schoolyard as the focus for student-directed scientific research.

A major outgrowth of Monarchs in the Classroom is the North American Monarch Institute (see related article on page 5) and the Monarch Flyway Network. The Monarch Institute is an intensive three-day workshop to teach classroom teachers and other educators how to use monarchs for science and environmental education. The Flyway Network supports the teachers after the workshop in their conservation and research activities. Network members study monarch biology and ecology, engage in citizen monitoring programs (the Monarch Larva Monitoring Project, Monarch Watch, Journey North, and Monarch Health), study the plants and animals with which monarchs interact in the wild, and create schoolyard habitats to support monarchs and other pollinators.

Karen's education and outreach work on behalf of monarchs is impressive. She is a leader in monarch conservation, especially as director of the Monarch Butterfly Fund. The Fund is meeting the challenge of preserving monarchs and their spectacular migration through a conservation strategy that fosters healthy

ecosystems and sustainable communities in the overwintering sites in Central Mexico.

In 2012, Karen organized the fifth Monarch Biology and Conservation Meeting and encouraged 160 people to attend. She is editing a book based on the presentations at that meeting. It will summarize our understanding of monarch biology, migration, and conservation needs.

Karen is also co-chair of the Monarch Joint Venture, a partnership of federal and state agencies, non-governmental organizations, and academic programs that are working together to support and coordinate efforts to protect the monarch migration across the lower 48 United States. The Monarch Joint Venture is committed to a science-based approach to monarch conservation work, guided by the North American Monarch Conservation Plan (2008), which Karen had authored. She also wrote and edited the related Monarch Butterfly Monitoring in North America: Overview of Initiatives and Protocols, which helps to standardize and coordinate monitoring efforts throughout the range of the monarch to track progress of conservation activities.

US Forest Service International Programs has worked with Karen on many of these activities, especially the Monarch Joint Venture and the North American Monarch Institute.

## **THE BUTTERFLY EFFECT: MONARCH WORKSHOPS TAKE SCIENCE EDUCATION TO NEW HEIGHTS**

In the 21<sup>st</sup> century, science literacy has become as important as reading and mathematics when it comes to predicting future success for children. To help bolster curriculum in the sciences as well as promote conservation education, the US Forest Service International Programs and the University of Minnesota's Monarchs in the Classroom have organized several workshops in Chicago and St Paul that are taught by active teachers with classroom experience. Known as the North American Monarch Institute, the thrust of these sessions has been to use monarch butterflies to garner interest in natural sciences and



*US Forest Service and Monarchs in the Classroom are organizing workshops, like the one in Washington DC in July 2012, that use monarch butterflies to garner interest in natural sciences and conservation among schoolchildren and communities. (Photo courtesy of Michael Rizo, US Forest Service)*

conservation and to look at innovative and low-cost approaches to enhance lesson plans with real world applications.

In the summer of 2012, the first monarch-based workshop was held in the nation's capital. More than 30 educators based in Washington, DC, and 4 visiting educators from the Hashemite Kingdom of Jordan and the West Bank attended. The session took place in the gardens and the classrooms of St. Coletta of Greater Washington. Together, they learned different ways to enhance their science and environmental education programs at their respective schools.

Teachers practiced creating and integrating lesson plans around this charismatic species. The participants learned to plant habitats with host plants and nectar sources for monarchs, to raise these colorful insects in classrooms, and to participate in ongoing citizen science projects. Other curricular ideas, lesson plans, and activities involving monarchs were also introduced. Most importantly, they learned how to use schoolyard gardens and urban areas as outdoor classrooms, as well as how the children of Washington, DC, can contribute to conservation of this majestic species.

The DC session is the fifth in an ongoing series of

workshops. Led by Dr. Karen Oberhauser (see article on page 4), Lis Young-Isebrand, and Grant Bowers of the University of Minnesota, the North American Monarch Institute works with teachers and naturalists in host cities to create successful programs. More workshops are being planned for 2013.

A single monarch can indeed change the landscape of science for many schoolchildren. The number of students who directly benefit from these workshops is large. To date, for example, a total of 216 teachers have participated in these programs. If each of those teachers were responsible for around 25 students, then within a single year, over 5,400 children will benefit. In over two decades, more than 108,000 students can be reached. The subsequent ripple effect into the communities is strong. An added benefit to these programs is the planting of numerous native gardens in schools and in the communities—further deepening the bond between children and nature as well as creating habitats for species like the monarch.



*The Scarlet Tanager is one of several species of birds that overwinter in the coffee-growing regions of Colombia. (Photo courtesy of US Fish and Wildlife Service.)*

## **THE COFFEE CONNECTION: CONSERVING BIRDS IN COLOMBIA**

It is widely believed that Colombia produces one of the finest coffees in the world. The country can also boast that it has more bird species than any other place worldwide. Because of the importance of Colombia for both coffee and birds, researchers and conservationists want to explore the relationship between the two. Specifically, they want to know how the country's coffee-growing regions support bird populations. To protect the large populations of migratory birds that breed in North America and winter in Colombia, the US Forest Service International Programs works with partners like The Nature Conservancy and Cenicafé, the Colombian National Coffee Research Center, to conserve habitat in the

country through an innovative project.

Eight years ago, the project started as a bird census, hosted by Cenicafé and conceived by ornithologist and conservationist, Jorge Botero. Since then, the work has branched out to include teaching communities about the habitat needs of birds and how to provide for those needs in coffee-growing regions. The project is simple but comprehensive: visits are made to 8 villages at least three times a year to promote bird-watching and to ensure systematic bird counting by members of all ages in those communities.

The work embodies the idea of “conservation through birding.” Products of the project include beautiful bird posters for each village and a collective database with more than 75,000 bird records. The residents of these communities have been enthusiastic about this project. They would wake up at 5 am the morning of the meetings to go bird-watching. They were equally excited about using their land to promote bird conservation. They spoke eloquently about the links between bird conservation and

their own health and well-being.

The project is considered a success. Participants—who recently gathered to celebrate eight years of achievements—have become knowledgeable about birds, increasing their understanding of how they can provide much-needed habitat on their land. Many reported that they have been actively conserving natural habitat. These successes were published in a recent study.

## **THE TRUTH ABOUT BATS AND BAT CONSERVATION IN LATIN AMERICA**

Latin America and the Caribbean are home to over 30 percent of the world's bat species—more than 1,250 types in total worldwide. Sadly, populations of



*Still misunderstood, bats provide many benefits, including helping to recover forests that have been destroyed by slash-and-burn practices. (Photo courtesy of BatsLIVE!)*

bats in the region are declining. At present, many of those species are listed by the International Union for the Conservation of Nature as Vulnerable, Threatened or Endangered.

One of the reasons for this staggering decline is misconception. For centuries, bats have been stigmatized as disease carriers and been described as nefarious creatures of the night in popular lore and myths. As a result many people have feared these misunderstood mammals and have tried to eradicate them. In addition, habitat destruction, roost disturbance and eradication efforts have placed bat species in further peril.

The truth about bats, however, is coming to light due to efforts by organizations such as Bat Conservation International, the US Forest Service and partners. For over 20 years, Bat Conservation International has led efforts in promoting conservation by educating the public and advancing studies on bat populations.

Research has shown that bats are beneficial. Some species eat enormous amounts of harmful insects, reducing crop damage and limiting pesticide use. As nighttime pollinators, they help hundreds of native plants reproduce. In many areas, especially in the tropics, bats disperse seeds. Therefore, they are crucial in the recovery of forests that have been destroyed by slash-and-burn practices.

The road to recovering these species in the region

depends upon strong partnerships. Bat Conservation International and the US Forest Service International Programs have worked closely together for years. International Programs has funded scholarships and internships for Latin American bat students in an effort to cultivate succeeding generations of scientists and conservationists.

These organizations have also partnered with the Latin American Bat Conservation Network (RELCOM). RELCOM is a regional network of 19 country-level programs committed to ensuring healthy and viable species and populations of bats. Together, the collaboration promotes research, conservation and education, while building local and regional capacity to ensure long-term conservation impacts. The partnership is also responsible for conducting workshops, deploying response teams, sponsoring student research, implementing critical protection and monitoring projects and providing support to Latin America's growing network of bat conservation groups.

Because of the success of RELCOM, Bat Conservation International – with the support of International Programs – recently sponsored a bat meeting in Africa to start a similar network in that region.

## **THE MYSTERIOUS MIGRATORY DRAGONFLY**

For centuries, people around the world have reported seeing large swarms of dragonflies, migrating mostly in early fall. In the United States, up to 16 different species have been spotted in these autumnal flights. In spite of these numerous sightings and the fascination with dragonflies, these flights still remain a mystery.

The US Forest Service and its partners, however, are working to increase our knowledge of this remarkable phenomenon. They are working together to delve deeper into the mystery of dragonfly migration, their biology and their breeding patterns. One partner organization, the Xerces Society, has convened a group of experts to form the Migratory Dragonfly Partnership. One of the first products of the partnership is a scientific review paper by Michael L. May:

# Wings

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## ABOUT THE US FOREST SERVICE INTERNATIONAL PROGRAMS

The US Forest Service International Programs advances sustainable natural resources management and biodiversity conservation in approximately 90 countries worldwide. By linking the skills of the staff of the US Forest Service with partners domestically and overseas, the Agency can address the most critical natural resource issues and concerns.

The United States benefits from working with partners overseas. Innovative technologies are brought back to the country, natural resource problems that traverse boundaries and ownerships are addressed and opportunities to hone US Forest Service skills are increased. In addition, strengthened international ties lead to mutual aid and cooperation in facing challenges that threaten natural resources.

With over 37,000 employees in the Agency, International Programs taps into a large wealth of expertise, including:

1. Migratory species
2. Illegal logging
3. Conservation education
4. Protected area management
5. Habitat management
5. Wildlife management
6. Watershed management
7. Ecotourism
8. Fire management
9. Fisheries
10. Climate change
11. Recreation
12. Rangeland management
13. Forest economics
14. Forest products and wood technology
15. Forest health and invasive species
16. Integrated forest monitoring
17. Sustainable natural resource management
18. Disaster response and mitigation
19. Policy analysis
20. Urban forestry

“A critical overview of progress in studies of migration of dragonflies (Odonata: Anisoptera), with emphasis on North America,” in the *Journal of Insect Conservation* ([www.migratorydragonflypartnership.org](http://www.migratorydragonflypartnership.org)). In his review, the author discusses the task of greatly increasing our understanding of this phenomenon.



*Migratory dragonflies have remained a mystery for many scientists. (Photo courtesy of Dennis Paulson.)*

Citizen science is another way in which we are gaining more than a glimpse into the world of dragonflies. Celeste Mazzacano, dragonfly partnership coordinator, is organizing a project, Pond Watch ([www.migratorydragonflypartnership.org](http://www.migratorydragonflypartnership.org)), which encourages the public to visit local dragonfly ponds often to determine which species are present and at which life-cycle stage. The project focuses on five major migratory species: Common Green Darner (*Anax junius*), Black Saddlebags (*Tramea lacerata*), Wandering Glider (*Pantala flavescens*), Spot-winged Glider (*Pantala hymenaea*), and Variegated Meadowhawk (*Sympetrum corruptum*); however, the study's techniques can be used on any dragonfly species of interest.

Another project, Migration Monitoring Project ([www.migratorydragonflypartnership.org](http://www.migratorydragonflypartnership.org)) encourages people to report sightings during fall migration. Many observations of their flight have occurred at well-known sites for observing raptor migration, so it may be possible to combine efforts to monitor hawks, eagles, kites, and dragonflies from the same sites.

Migratory Dragonfly Partnership researchers are taking the lead on a third major project that uses latitudinal differences in stable isotopes to determine the geographic origin of adult dragonflies. The scientists study emerging adults and exuviae (the “skin” that the emerging adults discard) to create an isotopic map of North America. Then they can compare the isotopes of migrating adults to determine their geographic origin.

If all of this makes you want to get involved, be sure to visit the web site and start contributing your data. In addition, visit the web site to see if there will be a Migratory Dragonfly Short Course taught in your area. These short courses are a great way to learn how to participate firsthand.