

2013 Annual Report

The Xerces Society for Invertebrate Conservation is an international nonprofit organization that protects wildlife through the conservation of invertebrates and their habitats. We take our name from the Xerces blue, the first butterfly known to go extinct in North America due to human activities. For more than forty years, the Society has been at the forefront of invertebrate protection, harnessing the knowledge of scientists and the enthusiasm of citizens to implement conservation programs worldwide.

The Xerces Society for
Invertebrate Conservation
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www.xerces.org
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A Message from Our Executive Director

Dear Friends:

One of America's most significant environmental wake-up calls came more than 50 years ago, with the publication of Rachel Carson's *Silent Spring*. The message that indiscriminate use of synthetic chemicals could cause long-term harm became part of the environmental movement.

Despite victories over the years, pesticide use remains a serious threat to ecological health, especially for insects that are not even the intended targets. In June 2013, for instance, in the small town of Wilsonville, Oregon, over 50,000 bumble bees died in the worst bumble bee kill ever recorded. These bees died after an insecticide was applied to more than 50 blooming linden trees to reduce aphid honeydew dripping onto parked cars.

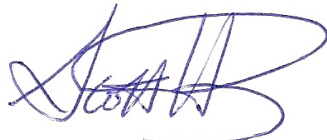
The extreme event in Wilsonville has been repeated on different scales, in different places, but with the same cause: neonicotinoid insecticides. Beyond these bee kills, studies from across the world show that these highly toxic, persistent insecticides are likely harming not only pollinators but also aquatic organisms, birds, and perhaps the entire functioning of the food web.

Pesticides are not a new issue for the Xerces Society. Over the past decade, we have advocated against scientifically unfounded pesticide use and have published influential reports. In 2013, we hired a dedicated pesticide staff member to pursue even greater pesticide reduction. Our new pesticide program complements and is interwoven with our other programs: native pollinators, endangered species, and watershed health.

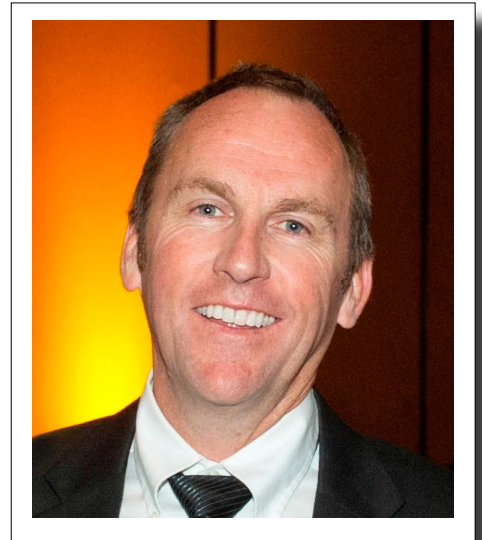
Deepening our involvement in pesticide issues is just one aspect of the Xerces Society's growth in 2013. The most recent increase in our organizational budget—10% from 2012—is just the latest expansion of our operations. Since 2010, our budget has expanded by 61%. We have grown in response to urgent need, and during this period, we have continued to make a positive impact on the health of invertebrate populations and their habitat.

Our success is only possible because of the generous support we receive and the strong partnerships we have formed. Thank you again for helping protect the life that sustains us all.

Warm regards,



Scott Hoffman Black



BRING BACK THE POLLINATORS

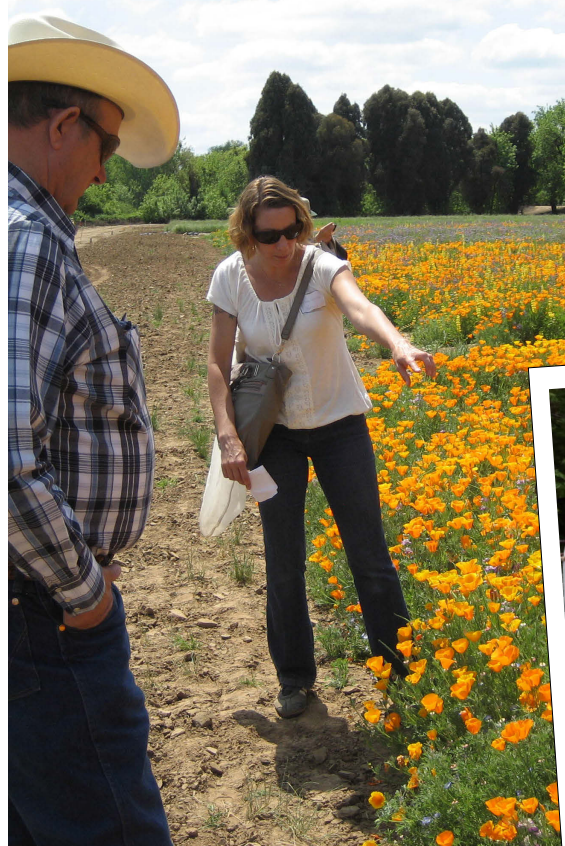
A Xerces Society Conservation Campaign



Pollinator habitat on an organic farm in Idaho



Habitat on an Oregon blueberry farm



Jessa Cruz leading a workshop



Banner announcing workshop in Coimbatore, India

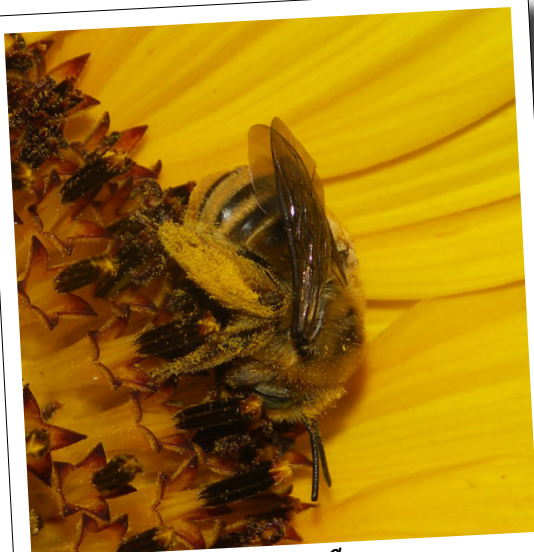
Pollinator Conservation

Pollinators are necessary for the reproduction of more than 80% of the world's flowering plants. This includes more than two-thirds of the world's crop species, whose fruits and seeds together provide over 30% of the foods and beverages that we consume. These vital insects face habitat loss, alteration, and fragmentation, as well as pesticide use.

Xerces is restoring natural habitat for our native crop-pollinating bees, helping farmers reduce negative impacts on pollinators, and increasing food security by helping farmers take full advantage of the native pollinators that are already present on and around farms across the country. We have reached out to thousands of people, providing them with knowledge and information that underpins widespread, mainstream adoption of pollinator conservation across the U.S. and globally.

2013 Achievements

- ⇒ Since 2008, our efforts have culminated in the restoration or protection of pollinator habitat on over 120,000 acres of U.S. farmland, with thousands more acres in development.
- ⇒ We continued to present full-day “bee-safe farming” workshops, farm field days, and our Pollinator Conservation Short Course during 2013, reaching our target of events in all 50 states. We have now have trained over 33,000 agricultural professionals; post-workshop surveys show that 90.7% of participants are adopting “bee-safe” farming practices.
- ⇒ Our staff traveled to present workshops to researchers and rural development professionals in India and Europe.
- ⇒ We launched a social media component to our Bring Back the Pollinators campaign that encourages ordinary people to reduce pesticide use, plant flowers for bees and butterflies, and create dialogue in their own communities about pollinator conservation. Thousands of people from all 50 states have taken a formal pledge to protect pollinators as part of this campaign and registered their pollinator habitat on a nationwide map of pollinator corridors.
- ⇒ We began design and implementation of the first large-scale pilot project that integrates pollinator habitat into organic tomato farm systems, as well as a new project to integrate bee habitat into commercial almond orchards.
- ⇒ We helped draft the “Saving America’s Pollinators Act,” a bill that was introduced into the U.S. House of Representatives.



Longhorned bee on a sunflower



Eric Lee-Mäder talking with farm advisors in India

Endangered Species

The Xerces Society collaborates with scientists, land managers, and conservationists to raise awareness about the plight of invertebrates and to gain protection for the most vulnerable species before they decline to a level at which recovery is impossible. Destruction of habitat, introduced species, and pesticides are all leading to the loss of invertebrate species.

Bumble Bee Conservation

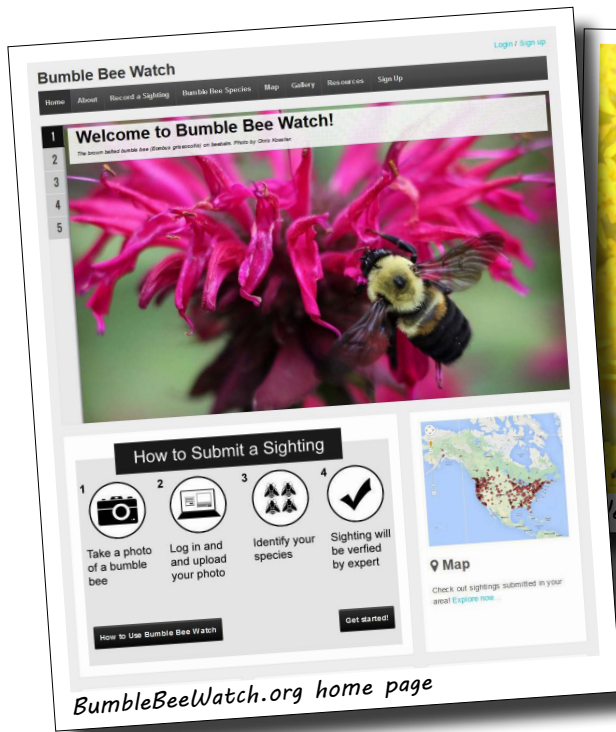
Native bumble bees are among our most important agricultural pollinators, and they are essential to the reproduction of countless native wildflowers. These combined factors make bumble bees essential to the functioning of both natural and agricultural ecosystems. Unfortunately, bumble bees are in sharp decline due to habitat loss, pesticide use, climate change, and perhaps most significant of all, the introduction of non-native bumble bee diseases. To preserve wild bumble bees, Xerces uses science—both from university collaborators and citizen-science projects—to evaluate the conservation status, threats, and conservation needs of these animals, advocacy to engage state and federal agencies in the protection of these species, and outreach and education to land managers and public agencies to directly protect and manage sites for the benefit of imperiled bumble bees.

2013 Achievements

- ⇒ In 2013 we started a process to evaluate the conservation status and extinction risk of all 250 species of bumble bees worldwide using the International Union for the Conservation of Nature (IUCN) criteria. This work is in conjunction with a global network of scientists convened through the IUCN Bumblebee Specialist Group.
- ⇒ We expanded our citizen science monitoring project and prepared for the January 2014 launch of Bumble Bee Watch, a large-scale citizen science project to track and conserve North America's bumble bees (please see www.BumbleBeeWatch.org).
- ⇒ We continued to pressure the USDA Animal and Plant Health Inspection Service to increase their regulation of commercial bumble bees in order to protect wild bumble bees from disease.
- ⇒ We distributed hundreds of copies of a new, fully illustrated brochure, *Bumble Bee Conservation*, along with our comprehensive 2012 guide for landowners and managers to create and manage high quality bumble bee habitat.
- ⇒ Our outreach to more than 100 wildlife agency professionals at the U.S. Forest Service and state agencies that manage wildlife resulted in the U.S. Forest Service listing the western bumble bee as a “sensitive species” in Oregon and California, which means that the western bumble bee must now be considered in Forest Service projects that require environmental assessments.

Protecting Monarchs and Their Habitat

Monarch butterflies are among North America's most iconic native species. They are familiar and beloved among people throughout Canada, the United States, and Mexico. As recently as the 1990s, hundreds of mil-



BumbleBeeWatch.org home page



western bumble bee



Monarch on a milkweed flower

lions of monarchs made the epic flight each fall from the northern plains of the U.S. and Canada to sites in the oyamel fir forests north of Mexico City. In western North America, more than a million monarchs once made a shorter flight to the California coast. The size of these dramatic migrations has been shrinking. The overall population of monarchs has declined by more than 90% in the last two decades.

To conserve monarch butterflies, we have drawn together a skilled team of entomologists and restoration ecologists to work with farmers and others to create flower-rich habitat. Since 1997, we have conducted the Western Monarch Thanksgiving Count, a volunteer-based, citizen-science program that has monitored California's overwintering sites. We launched Project Milkweed to build a sustainable supply of native milkweed seeds and create habitat in monarch breeding regions. Through talks, workshops, and other outreach events, we have reached tens of thousands of people across the U.S. with information about how to protect and promote habitat for monarchs.

2013 Achievements

- ⇒ More than 35 million milkweed seeds have been produced thanks to Project Milkweed. Schools, Rural Conservation Districts, farmers, and many others have used these region-specific seeds to improve habitat for monarchs in California, Arizona, New Mexico, the Great Basin, Texas, and Florida—key areas of the monarch's breeding range.
- ⇒ With help from Xerces, farmers and land managers have restored tens of thousands of acres of flower-rich habitat containing milkweed across much of the monarch's breeding range.
- ⇒ To identify important monarch breeding areas and target conservation efforts, we compiled a database of over 7,000 milkweed locations in western states, based on herbarium records and survey work by citizens, scientists, and resource agency personnel.
- ⇒ We developed a database of overwintering sites in California that allowed us to identify knowledge gaps, prioritize protection, and better understand how development will impact overwintering monarchs.
- ⇒ We completed a three-year effort to survey and monitor monarch overwintering sites, and this effort resulted in the discovery of six new sites and the rediscovery of an overwintering site that hosts over 20,000 monarchs.

Aquatic Conservation

Xerces conducts applied research and provides advice and resources to scientists, land managers, and watershed stewards for monitoring the health of streams, rivers, and wetlands.

Freshwater Mussel Conservation

Native freshwater mussels have immense ecological and cultural significance. As filter-feeders, they can substantially improve water quality, which benefits aquatic ecosystems—including native fish—and, ultimately, humans. These animals can be highly sensitive to environmental changes and thus have great potential to be used as indicators of water quality. Freshwater mussels were historically important sources of food, tools, and other implements for many Native American tribes. Native Americans in the interior Columbia Basin have harvested these animals for at least 10,000 years.

Freshwater mussels are experiencing a dramatic decline; 71% of all species of North American freshwater mussels are considered endangered, threatened, or of special concern. The Xerces Society is monitoring Portland-area watersheds for mussels to fill in gaps in our understanding of mussel distribution and status. The volunteers we engage in these efforts gain exposure to an important, sensitive, but little-known member of the aquatic fauna.

2013 Achievements

- ⇒ We trained land managers and watershed agency staff in mussel relocation techniques and provided direct assistance in salvage projects to rescue and relocate hundreds of native mussels from stream restoration sites prior to project implementation.
- ⇒ Xerces partnered with six watershed groups to train 80 volunteers to do mussel surveys in three waterways in the Portland area.
- ⇒ We conducted outreach about freshwater mussels to about 300 natural resource, watershed council, and storm water agency staff and land managers in Oregon and Washington.
- ⇒ Data gathered through our surveys helped watershed groups understand how better to manage stream habitats.



Volunteers rescuing mussels before stream restoration



Measuring a freshwater mussel to estimate its age

Migratory Dragonfly Partnership

Adult dragonflies are big, showy, beautiful, and well known. Despite their popularity, the life history of dragonflies—particularly those that migrate—is not well understood. The Migratory Dragonfly Partnership (MDP) studies the five main migratory dragonfly species in North America and promotes the conservation of the habitat on which these species rely.

MDP is a tri-national, collaborative effort among federal agencies, nongovernmental programs, academic institutions, and expert odonatists across North America. The work of the MDP is managed and coordinated by Xerces staff. Effective study of migration requires long-term reporting by large numbers of people across a wide geographic range. MDP is using research, citizen science, education, and outreach to engage nature centers, parks, wildlife refuges, bird watchers, and the general public in education and field activities to monitor five species during their fall and spring flights and at local ponds throughout the year. Our educational events and materials also highlight the importance of conserving both wetland habitats and vulnerable dragonfly species.

2013 Achievements

- ⇒ MDP's international network of volunteers expanded to 562 registered users—up from 219 in 2012, the first official year of the project's operations. By the end of 2013, these users had submitted 1,720 Pond Watch and migration records.
- ⇒ MDP gained a new partner in 2013—Hawk Migration Association of North America—and continued to deepen relationships with additional environmental and academic organizations in Mexico and Canada, including Espacios Naturales y Desarrollo Sostenible, Comisión Nacional de Áreas Naturales Protegidas, and the Universidad Juarez Autonoma de Tabasco.
- ⇒ The data gathered by citizen scientists already provides insights into migration; even for the regular annual migrants, the timing and intensity of migration flights can vary greatly from year to year. The data so far also indicate that migrating birds and dragonflies can follow many of the same flight paths, but a high-intensity flight day for birds doesn't mean that there will also be a lot of dragonfly migration at exactly the same time, and vice versa.



MDP workshop in Tabasco, Mexico



Band-winged dragonlet

Pesticides

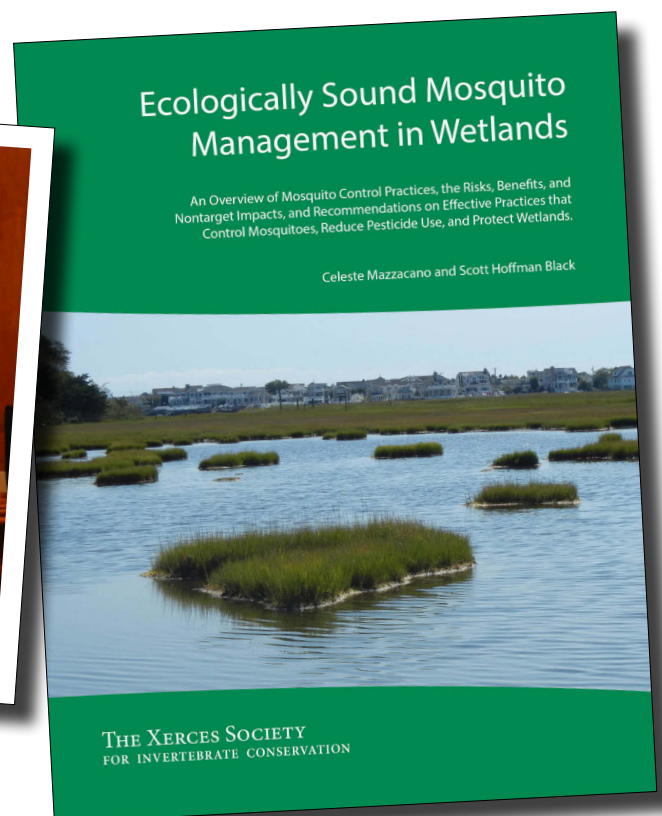
The Xerces Society is working to change how people use insecticides. Our publications translate complex science, so that farmers, agency staff, and policy makers can make informed decisions about pesticide use and regulation. We are pushing for warning labels on home products, so that gardeners know if the chemicals are harmful to pollinators. Our training courses for farmers, land managers, and citizens include ways to use fewer pesticides and decrease impacts on the environment. Spraying wetlands to control mosquitoes has a major impact on invertebrates, and we are working with agency staff to alter management practices to minimize the nontarget impacts. Also, we are working with the Environmental Protection Agency to develop a better risk assessment for chemicals that harm bees.

2013 Achievements

- ⇒ Our work has led to a ban on the use of two neonicotinoids on *Tilia* trees in Oregon and on pesticide labeling improvements nationally.
- ⇒ In the spring of 2013, we partnered with the American Bird Conservancy and the Center for Food Safety to conduct a U.S. Senate staff briefing for 80 people in Washington, D.C., titled “From Bees to Birds: Assessing the Impact of the Nation’s Most Widely Used Insecticides.” The briefing was held at the request of the Senate Environment and Public Works Committee and Senator Boxer (D-CA).
- ⇒ In March 2013, we released the report *Ecologically Sound Mosquito Management in Wetlands*. This report has been used by citizens around the U.S. to inform more appropriate mosquito management.
- ⇒ In the fall of 2013, we mobilized in response to a proposal from the Bandon Marsh National Wildlife Refuge in Oregon to spray 10,000 acres of estuary, forest, farmland, and homes with a toxic broad-spectrum insecticide to control breeding by nuisance-biting mosquitoes. We quickly prepared a science-based alternative, as well as legal arguments against the proposal, and organized community members in opposition to the spraying. As a result, a more targeted, less toxic pesticide was used on only 400 acres.



Scott Hoffman Black speaking at a congressional briefing



Outreach & Education

Xerces's outreach activities support the work of our four conservation programs, working through a variety of channels to raise awareness and appreciation of invertebrates' valuable role. This includes the publication of our magazine *Wings. Essays on Invertebrate Conservation*, which features the work of renowned wildlife photographers, scientists, and conservationists. We also provide dozens of publications for free download through our website, including guidelines to help farmers and gardeners conserve pollinators, guides to identifying endangered bumble bees, tools for monitoring stream health using aquatic insects, and many more.

2013 Achievements

- ⇒ We developed several new publications including:
 - ⇒ *Beyond the Birds and the Bees: Effects of Neonicotinoid Insecticides on Agriculturally Important Beneficial Insects*;
 - ⇒ *Protecting Bees from Neonicotinoid Insecticides in Your Garden*;
 - ⇒ *Ecologically Sound Mosquito Management in Wetlands*;
 - ⇒ Guides to the native milkweeds of California, Nevada, Oregon, Washington, the Great Basin, and the central U.S.; and
 - ⇒ Pollinator conservation habitat installation guidelines for every region of the country.
- ⇒ Our website visitation continued to grow, increasing by more than 30% since 2012.
- ⇒ We increased our presence on Facebook, with the number of followers more than tripling to 4,724 by year's end and the geographic reach extending to 44 countries. More importantly, we also experienced a significant growth in how many people saw the information we shared, more than six times as many as in 2012.
- ⇒ The 2013 Joan Mosenthal DeWind Award winners received \$3,750 each for Lepidoptera research and conservation projects. Rachel Glaeser, Washington State University, Vancouver, is studying the consequences of selective-herbicide use on populations of the Columbia silvery blue butterfly (*Glaucopsyche lygdamus columbia*), and John Schroeder, Stanford University, is investigating the conservation genomics of the checkerspot butterfly (*Euphydryas editha*).



Thank You!

We thank the many foundations, companies, and agencies who have provided funding for our programs. We also thank our members, whose generous donations support our work.

Thank you, too, to our collaborators and project partners—the landowners, farmers, agency staff, land managers, gardeners, researchers, and volunteer citizen scientists—who have shared their land, resources, enthusiasm, and time.

For a full list of donors, please visit www.xerces.org.

2013 Board of Directors

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Staff as of December 2013

Nancy Adamson, Pollinator Conservation Specialist, East Region
Scott Black, Executive Director
Michele Blackburn, Conservation Associate, Aquatics Program
Brianna Borders, Plant Ecologist
Alex Charlap, Executive Assistant/Office Manager (from beginning of December)
Aimee Code, Pesticide Program Specialist
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Megan Faria, Financial Manager
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Richard Hatfield, Endangered Species Conservation Biologist
Jennifer Hopwood, Senior Pollinator Conservation Specialist, Midwest
Sarina Jepsen, Endangered Species Program Director
Mary Ann Lau, Accounting/HR Associate
Eric Lee-Mäder, Assistant Pollinator Program Director
Celeste Mazzacano, Aquatic Program Director/Staff Scientist
Ashley Minnerath, Pollinator Program Administrator
Matthew Shepherd, Communications Director
Mace Vaughan, Pollinator Program Director
Hailey Walls, Pollinator Program Assistant
Laura Westwood, Grants Manager



Xerces staff at the annual retreat

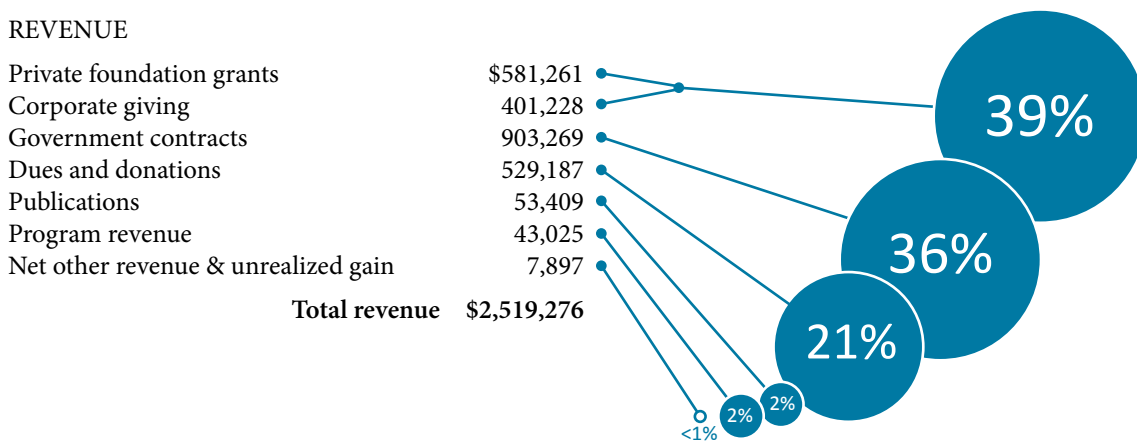
Financial Report

Financial Position for the year ended December 31, 2013 (Audited)

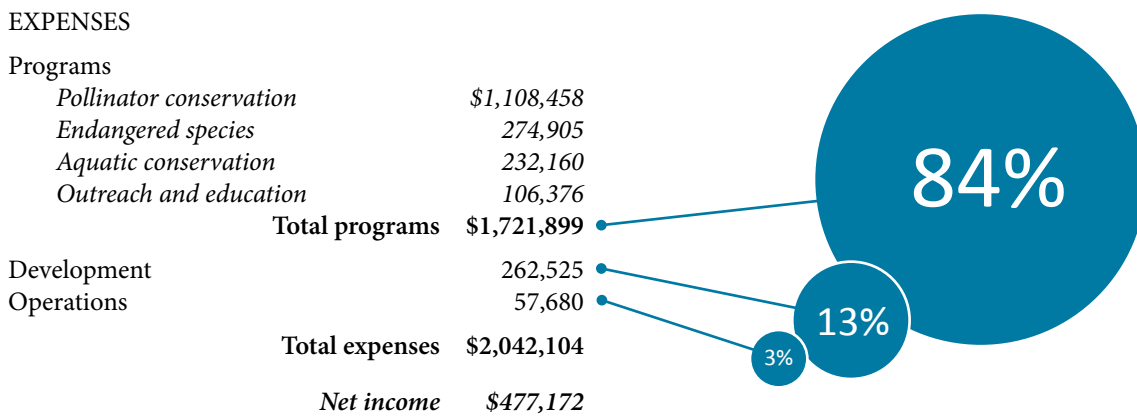
Cash	\$980,648	Accounts payable	\$125,738
Investments	109,858	Accrued payroll & related expense	105,226
Contracts receivable	303,974	Accrued retirement payable	70,004
Grants receivable	257,992	Deferred contract revenue	42,370
Inventory	46,399	Total liabilities	\$343,338
Prepaid expenses	14,689	Unrestricted net assets	\$958,011
Net property and equipment	20,315	Temporarily restricted	432,526
Total assets	\$1,733,875	Total net assets	\$1,390,537
		Total liabilities and net assets	\$1,733,875

Financial Activities January to December 2013 (Audited)

REVENUE



EXPENSES



To read more about our work, visit www.xerces.org



Taylor's checkerspot butterfly



Surveying for rare bumble bees



Restored prairie



Launch of Saving America's Pollinators Act



12-spotted skimmer dragonfly



Longhorn bee in suburban pollinator garden