



ANNUAL REPORT 2012-2013

PRESIDENT'S MESSAGE

Whether you care about conservation close to home in the Chesapeake Bay watershed, or in far-flung regions like Africa and the Andes, by supporting or partnering with NatureServe you have helped to save the most important plants, animals, and places. This Annual Report offers a brief overview of how your investment in our work—or your use of our information resources—has ensured that billions of dollars in conservation funding yield the best possible results.

In collaboration with public and private sector organizations, NatureServe has sustained its drive towards the results spelled out in our strategic plan. Across our network, we continue to have a powerful impact on the effectiveness of conservation action, sustaining our reputation as a leader in biodiversity information and expertise.

The commitment shown by staff all across the NatureServe network has been a true inspiration for me, a wellspring of optimism about what we can accomplish, even in challenging times. As is made clear in this report, NatureServe's data, tools and expertise continue to be at the heart of an array of conservation initiatives worldwide.



Mary L. Klein
President & CEO

RECONNECTING SCIENCE AND CONSERVATION

With a reach that is extending further around the world, NatureServe's mission—to put the best scientific information into the right hands—has generated exciting new partnerships. In this report you will read about a year highlighted by deeper work in Latin America and a better understanding of the most pressing challenges of our time, such as climate change and the health of marine ecosystems.



Kayakers look out onto the salt marshes of Jemes Island State Park near Crisfield, Maryland. Photo courtesy of the Maryland Department of Tourism Development.

LandScope Chesapeake Guides Conservation in the Watershed

Collaborative conservation and citizen engagement are the central themes that guided development of LandScope Chesapeake. Its comprehensive, data-rich maps detail the Chesapeake Bay watershed's array of protected lands, conservation priorities, natural resources, and the special places most in need of saving.

Launched with support from the U.S. National Park Service, the U.S. Geological Survey, and key partners in each of the Bay states, LandScope Chesapeake is the first of the LandScope platforms to take a regional perspective in helping protect and restore the 64,000 square-mile watershed that is home to 17 million people.

LandScope began in 2009 as a joint initiative with National Geographic, funded by the West Hill Foundation for Nature. Compelling place-based narratives and photography bring LandScope's authoritative maps to life. The map viewer lets non-profits, land trusts, and government agencies quickly see how and where conservation values align, making it easier to channel resources toward places with the highest conservation value.

LandScope Chesapeake integrates content from all six Bay states, thus bolstering the existing Virginia and Pennsylvania platforms and introducing content for West Virginia, Maryland, Delaware, and New York. Overall, web traffic to LandScope has grown each year. This year we added more than 100 conservation map layers, bringing LandScope's total to more than 150 partners at the local, state, and national level.

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To provide the scientific basis
for effective conservation action

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Much-sought for terrestrial and freshwater expertise, NatureServe has adapted its tools and methods for use on coastal and marine species and ecosystems. Photo of Gray's Reef National Marine Sanctuary by Greg McFall for NOAA.

Into the Sea

In June we published NatureServe's Coastal and Marine Strategy. It was developed with input from member organizations, NatureServe's Science Advisory Panel and marine scientists from various potential partner organizations. The plan focuses on extending NatureServe's core strengths into the coastal and marine realm, including: 1) developing scientific knowledge of coastal and marine species and ecosystems, 2) enhancing conservation effectiveness, 3) publishing analyses and syntheses of marine data, and 4) supporting marine conservation planning. The plan also highlights areas where we have already had success, such as the Coastal and Marine Ecological Classification Standard (CMECS), our Ecosystem-Based Management Tools Network, and Integrated Land-Sea Planning.

Scientists from across the network helped put on the finishing touches during a workshop at the Biodiversity Without Boundaries conference in April 2013. The plan has already made a splash among our partners in the coastal and marine conservation community, and is proving a useful tool for communicating the value that NatureServe brings to the marine conservation community.

Companies are More Effective Using NatureServe Surveyor



In October 2012, the conservation world was introduced to NatureServe Surveyor, a unique web application that empowers its users to screen for threatened and imperiled species across the United States and Canada, in parcels as small as one square mile (surveyor.natureserve.org).

This newest addition to NatureServe's conservation toolkit is designed for land-use planners, foresters, resource managers, environmental consultants, and developers in the early stages of project planning. Surveyor compares a selected project area with data from the NatureServe network, revealing whether there are any legally protected species (under the U.S. Endangered Species Act or Canadian Species at Risk Act) known to occur within the project boundary. And by pointing users toward the best source for local information and expertise about at-risk plants and animals, Surveyor can streamline documentation and improve the efficiency of any project with a substantial environmental footprint.

We expect Surveyor to prove useful across key sectors such as forestry, transportation, hazard response, and the extraction, production and transportation of energy.



NatureServe has determined the irreplaceability of unprotected threatened plants, animals, and sites in the precious Andes-Amazon area, including highland habitats of Colombia.

The Most Important Places to Conserve in the Andes-Amazon

The eastern Andes and the western Amazon Basin are some of the world's most unique and bountiful areas for biodiversity. However, the governments of Colombia, Ecuador, Peru, and Bolivia are under pressure to increase access to land and develop natural resources to support economic growth. These impacts increase the urgency of knowing which of the region's many elements of biodiversity are irreplaceable, and which places in the region are most important to conserve.

With funding from the John D. and Catherine T. MacArthur Foundation, NatureServe has identified the most effective places to invest conservation resources in the region. NatureServe scientists used biodiversity data to determine the irreplaceability of unprotected threatened plants, animals, and places. We then estimated a range of impacts over the next 20 years from infrastructure development, loss of freshwater connectivity caused by planned dam construction, and projected deforestation. Crucially, we looked at the costs of conserving these places, as well as the potential benefits from water and carbon resources.

The final results reveal places in the Andes-Amazon that harbor the most vulnerable elements of biodiversity, the greatest potential for ecosystem service benefits, and the least cost for implementing conservation actions.

"NatureServe's analysis is a very important contribution to prioritizing and focusing resources in the region," says Stephen Cornelius, MacArthur Program Officer in Conservation & Sustainable Development. "Conservation efforts will have a greater impact because of this work."

Planning for Climate Change at the Habitat Scale (HCCVI)

Already a leader in measuring the impact of climate change on many of the world's species, NatureServe has now created a tool to determine the vulnerability of their habitats. By inventing a way to assess vulnerability over larger areas, we are spearheading the drive towards landscape-scale conservation.

While some of the concepts for evaluating habitats are similar to those for species, habitat vulnerability has proven far more complex because its component species



NatureServe has devised a new way to gauge the climate change vulnerability of 10 habitat types typical to the Mojave and Sonoran deserts.

IN BRIEF

A New Look at Africa

In the spring of 2013 we published the first continent-wide ecological map of Africa based on the international vegetation classification (IVC). In collaboration with the U.S. Geological Survey (USGS), NatureServe ecologists spent four years working with African experts to compile and describe vegetation units using the IVC. All told, 126 ecological types were mapped at a much finer resolution than has ever been possible. The American Association of Geographers published a special issue on this achievement.

Impacts on USDA Lands

The USDA Farm Service Agency asked NatureServe this year to help understand the impact of the Conservation Reserve Program (CRP), the USDA's program for setting aside environmentally sensitive croplands. NatureServe's role was to assist in measuring CRP's effect on endangered, threatened and candidate (ETC) wildlife species nationwide.

One of the major findings of NatureServe's analysis is that nearly 70 percent of those at-risk species on or near CRP parcels were found to be completely or strongly dependent on aquatic ecosystems.

We then reviewed a full list of the CRP conservation practices - tree planting and wetland restoration, for example - to develop a Conservation Effects Matrix to describe the expected effect of the conservation practices on ETC species.

Equipping Scientists in Latin America

NatureServe trained more than 60 scientists from across Latin America this year on three aspects of our suite of tools and methods.

The three-part training program consisted of 20 online training sessions covering: NatureServe's Ecological Integrity Assessment methods, the NatureServe Vista decision-support tool, and the NatureServe Climate Change Vulnerability Index.

Trainees were able to apply the Vista training to specific projects, including the development of the Sierra Madre Strategy in Chiapas, Mexico; ecological integrity assessment of the Área Rodales de Puya Raimondii in the Reserva Paisajística Nor Yauyos Cochas, Peru; and to design monitoring protocols for forests and woodlands as part of the Alianza México REDD+.

Participants received certificates for their completion of the training, which was funded by the Faucett Catalyst Fund.

A HELPING HAND AT THE STATE LEVEL



A small marsh hosts a variety of habitats at Indiana Dunes National Lakeshore.

State Wildlife Action Plans (SWAPs) lay out a comprehensive vision for the way each state manages its flora and fauna. NatureServe has played a key role in reshaping these plans, many of which are being updated ahead of a federally mandated deadline.

A central element of SWAPs is to outline steps for conserving specific wildlife and habitats before they become too rare or costly to restore. Through a four-year effort funded by the Doris Duke Charitable Foundation, NatureServe and our network members helped enhance State Wildlife Action Plans in three key areas: plant conservation, use of standardized habitat mapping, and analysis of habitat connectivity.

PLANNING FOR PLANTS

Historically, SWAPs have tended to undervalue the importance of plant life. NatureServe worked with five states—Colorado, Michigan, Montana, New Jersey, and North Dakota—to develop detailed maps and analyses that incorporate the needs of rare plants into SWAP revisions. We worked with five states to assess the vulnerability of plant species to climate change and prioritize those highly vulnerable species for inclusion in their states' plans.

BETTER HABITAT MAPPING

Eight states across the Midwest turned to NatureServe and our network members for help to update and standardize ecological maps. These efforts developed consistent, seamless maps that will improve regional assessments of biodiversity in places such as the Great Lakes beaches and dune habitats of Indiana and Michigan.

LANDSCAPE CONNECTIVITY

Understanding the movement of species is essential to the long-term survival of biodiversity in a

Continued on last page

may respond to climate changes in different ways, causing a remixing of the species composition in the future.

NatureServe has taken on this challenge by devising a new approach to evaluate the climate change vulnerability of 10 habitat types characteristic of the Mojave and Sonoran deserts. We estimated the stress that can be anticipated due to climate change in upcoming decades; the indirect effects that could interact with climate-induced stress (for example, invasive species or groundwater pumping); and the inherent capacity of that particular natural community to adapt to climate change. Combining these results establishes an overall estimate of vulnerability for each natural community.

The results were used to identify climate change adaptation strategies that would be applicable across multiple sites. For example, near-term, “no regrets” adaptation strategies would address indirect effects (such as fragmentation) to increase ecological resilience. In addition, medium-to-longer term “wait and watch” strategies were identified that would address potentially novel effects of climate change that might emerge over time (such as plants and their pollinators falling out of sync).

Land managers and ecologists reviewed the 10 vulnerability assessments from across the Mojave and Sonoran ecoregions during a two-day workshop, and won endorsement from the Desert Landscape Conservation Cooperative.

Saving the Most Threatened Places through the International Red List of Ecosystems

One of the year's high points came in September, when the 8,000 voting members at the IUCN World Conservation Congress in South Korea ratified a motion co-sponsored by NatureServe to create the international Red List of Ecosystems. Chief ecologist Pat Comer co-led several workshops featuring NatureServe's groundbreaking methods for analyzing the condition of ecosystems in the Americas.

Building on the IUCN resolution, NatureServe ecologists initiated the first effort to systematically identify at-risk ecosystems across the Western Hemisphere. This international initiative is funded by a grant from the Gordon and Betty Moore Foundation. Our staff are co-authors on papers documenting the methods, which build on NatureServe's existing approach to ranking. Over the winter we cohosted international workshops in Colorado to establish partnerships, gather input on the methods, and to review examples of red-list analyses for ecosystem types found across the Americas.

Workshop participants included IUCN staff and members of the IUCN Commission on Ecosystem Management. The outcome was a work plan for completing the prototype Red List by late 2014.



In separate efforts, botanists from North Carolina and Virginia found a plant they thought belonged to other species. But through their connection in the NatureServe Network, they soon realized they had discovered a wholly new species: the piedmont fameflower. Photo by Gary P. Fleming for the Virginia Natural Heritage Program

Keeping Track of All Those Plants

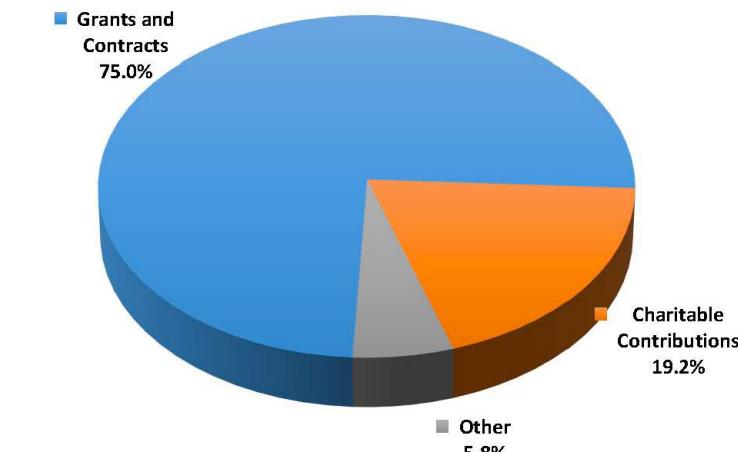
The taxonomy of plants—naming and categorizing its millions of species—poses a daunting challenge because of the vast number of species, the lack of a standard checklist, and the ever-changing landscape of plant taxonomic trends. NatureServe established a Plant Taxonomic Advisory Committee to navigate this landscape and advise NatureServe on which botanical taxonomic treatments should be adopted as standards in North America, and then implemented into the NatureServe database. Committee members hail from across the continent: Bruce Bennett (Yukon Conservation Data Centre), Bonnie Heidel (Wyoming Natural Diversity Database), Mike Oldham (Ontario Natural Heritage Information Centre), Jackie Poole (Texas Parks and Wildlife Department), and Alan Weakley (UNC Herbarium, North Carolina Botanical Garden).

The committee also represents a broad range of taxonomic expertise, as well as links to the herbarium community. Once the updates are fully operational, our botanical treatment will stand as a model for other organizations to follow.



Isolated to the Cumberland Plateau of Tennessee and Kentucky, the Cumberland sandwort (*Minuartia cumberlandensis*) can only be found in unusual cave-like sandstone overhangs known as rockhouses. The U.S. government lists the plant as endangered but uses the scientific name *Arenaria cumberlandensis*. Since most other sources accept the name *Minuartia cumberlandensis*, NatureServe must continue to maintain both names in order to ensure that those who are looking for information will find what they need. Photo courtesy of the National Park Service.

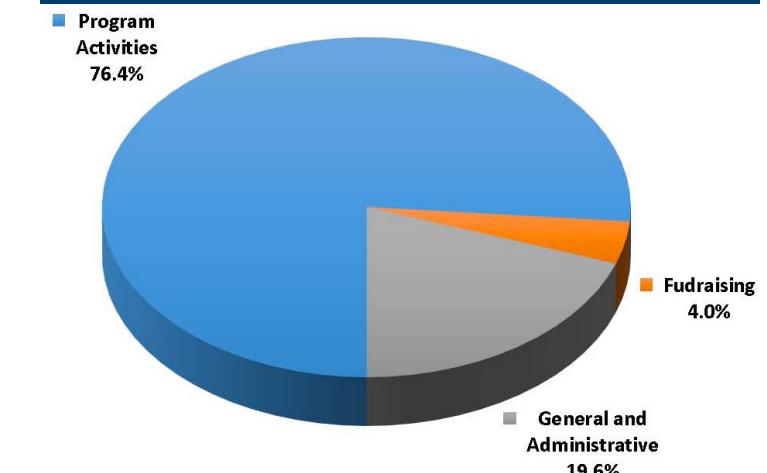
SOURCES OF FUNDS



INCOME	FY2013	FY2012
Charitable Contributions	\$ 1,510,000	\$ 1,686,000
Grants & Contracts		
Government	3,885,000	5,304,000
Non-Government	2,006,000	1,796,000
Other*	457,000	216,000
Endowment Payout	346,000	199,000
TOTAL OPERATING INCOME	8,204,000	9,202,000

* Includes membership dues, conference and training fees, rental income, royalties, and investment income

USES OF FUNDS



EXPENSES	FY2013	FY2012
Program Activities		
Conservation Products & Services	\$ 3,437,000	\$ 4,946,000
Network Capacity Building	494,000	469,000
Program Development	155,000	66,000
Scientific Data & Methods	1,075,000	907,000
Technology Research & Development	998,000	1,009,000
6,159,000	6,159,000	7,397,000
Fundraising	326,000	278,000
General & Administrative	1,580,000	1,508,000
TOTAL EXPENSES	8,065,000	9,183,000
OPERATING SURPLUS	\$ 18,800	\$ 2,500

WITH GRATITUDE

We wish to extend our sincere appreciation to the patrons and clients whose support helped NatureServe advance our shared mission between July 1, 2012, and June 30, 2013.

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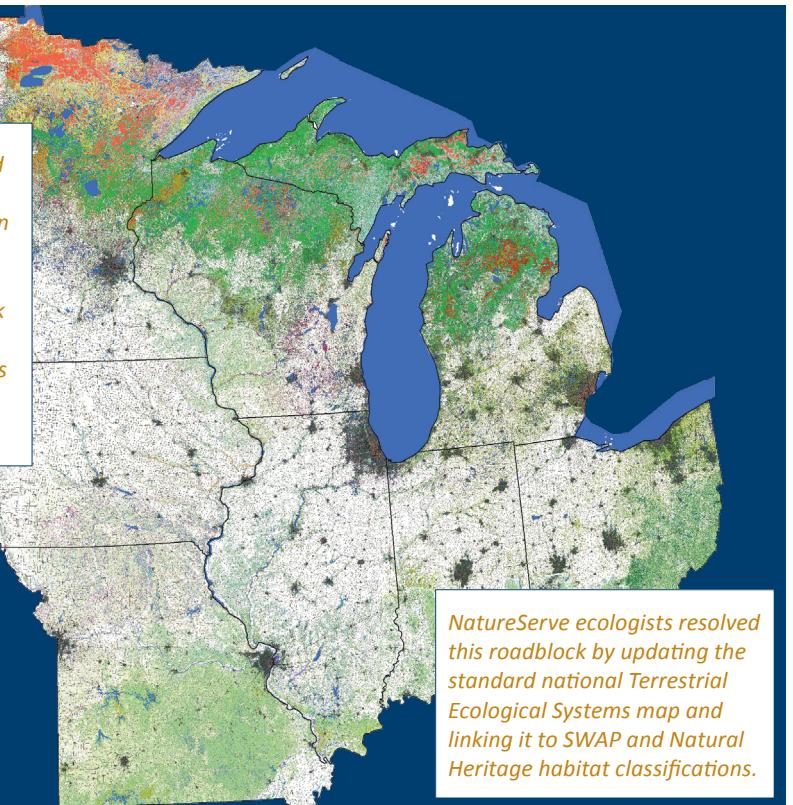
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NATURESERVE'S ROLE IN STATE WILDLIFE PLANS (continued)

fragmented landscape. But with the concept a relatively new one to conservation science, state agencies have lacked a single resource to help them. NatureServe is filling this gap by offering step-by-step guidance on ConnectingLandscapes.org, a vast repository that will focus scarce resources and arm practitioners with knowledge for more effective conservation.

NatureServe also tested an approach for assessing general landscape connectivity for the Crucial Habitat Assessment Tools (CHATs) that are being developed by western states.

The habitat types used in eight wildlife action plans from Midwestern states varied widely in scale and complexity, making it hard to work across states—and sometimes even across different agencies within the same state.





The NatureServe Network Convenes in Baltimore

More than 200 of the top minds in conservation science converged on Baltimore in April for Biodiversity Without Boundaries 2013, the NatureServe network's annual conference that draws leaders from dozens of federal and state agencies, corporations, and NGOs for five days of collaboration and networking.

Topics of the 113 workshops, panels, and presentations included:

- A full-day symposium, co-hosted by the U.S. Geological Survey, on the challenges and opportunities of landscape-scale conservation
- Biodiversity science and climate change adaptation in the Chesapeake Bay watershed
- First steps in implementing NatureServe's strategy for citizen science
- Lessons for building capacity around communication, marketing, relationship-building, and fundraising
- Training in our Natural Heritage Methodology

The NatureServe Conservation Award—which honors the titans of biodiversity conservation—went to Dr. Walt Reid, conservation science program director at the David and Lucile Packard Foundation.

Among Dr. Reid's catalogue of remarkable accomplishments, he led the Millennium Ecosystem Assessment from 1998 to 2005, which produced a state-of-the-art appraisal of the condition and trends in the world's ecosystems, the consequences of ecosystem change, and the options for policy and management responses. This landmark report integrated the scientific findings of more than 1,000 experts from



95 countries and brought them to bear on governmental and corporate policy-making.

"The Millennium Ecosystem Assessment has had an enormous impact on the practice of conserving and restoring ecosystems," said Mary Klein, NatureServe's president and CEO. "And its emphasis on collaboration and consensus between the scientific, business, and corporate communities offers a model for enacting meaningful policy changes."

Dr. Reid is the award's fourth recipient, following Robert Jenkins, founder of the NatureServe network's natural heritage methodology; scientist and author E.O. Wilson; and William Ruckelshaus, who served as the first and fifth administrator of the U.S. Environmental Protection Agency.

Another highlight came as three network members were recognized for their outstanding contributions to biodiversity



BWB 2013 convened hundreds of conservation leaders, including Dr. Walt Reid (above), who was bestowed the fourth NatureServe Conservation Award, in part for leading the Millennium Ecosystem Assessment. Annual achievement awards (below) for our member programs went to Natural Heritage New Mexico, the North Carolina Natural Heritage Program, and the Oregon Biodiversity Information Center. The weeklong conference kicked off with an excursion to Soldiers Delight Natural Environment Area (top right and bottom of page). Photos by Sam Sheline of NatureServe.

science. Natural Heritage New Mexico won the Conservation Impact Award, the North Carolina Natural Heritage Program won the Scientific or Technical Achievement Award, and the Oregon Biodiversity Information Center took home the Collaboration Award.



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