

# Wildlife Conservation Society

ANNUAL REPORT 2012



SAVING WILDLIFE AND WILD PLACES

[ COVER ] In 2012, close to 2,000 Kihansi spray toads bred at the Bronx and Toledo Zoos were released into their former habitat in Tanzania after going extinct in the wild.

[ INSIDE COVER ] WCS works with local governments across Africa to protect elephants targeted by poachers to feed the growing demand for ivory.

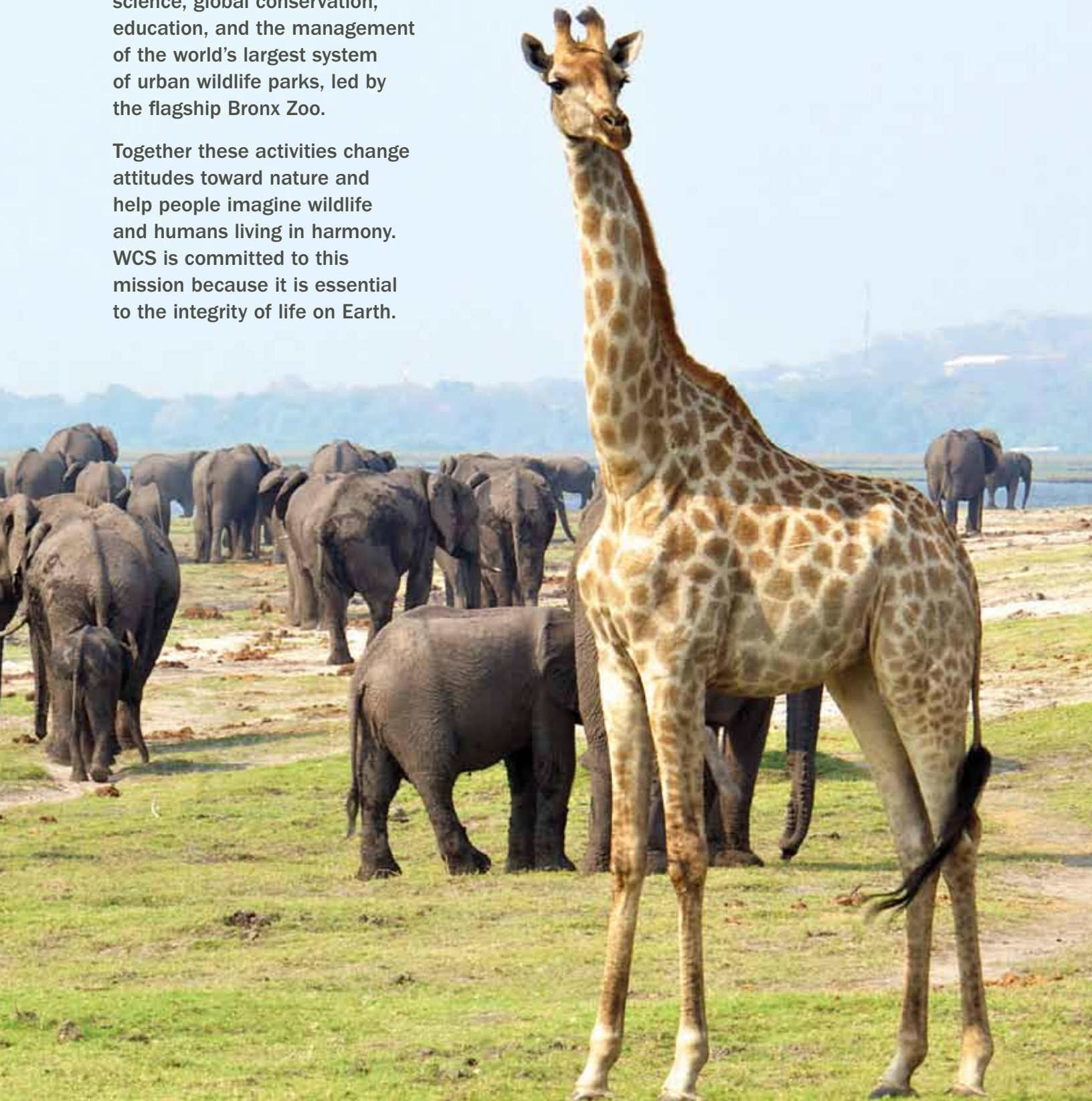
[ BACK COVER ] Bands applied to flamingos in the Bahamas will enable WCS researchers to monitor their migrations throughout the Caribbean.



# ANNUAL REPORT 2012

The Wildlife Conservation Society saves wildlife and wild places worldwide. We do so through science, global conservation, education, and the management of the world's largest system of urban wildlife parks, led by the flagship Bronx Zoo.

Together these activities change attitudes toward nature and help people imagine wildlife and humans living in harmony. WCS is committed to this mission because it is essential to the integrity of life on Earth.





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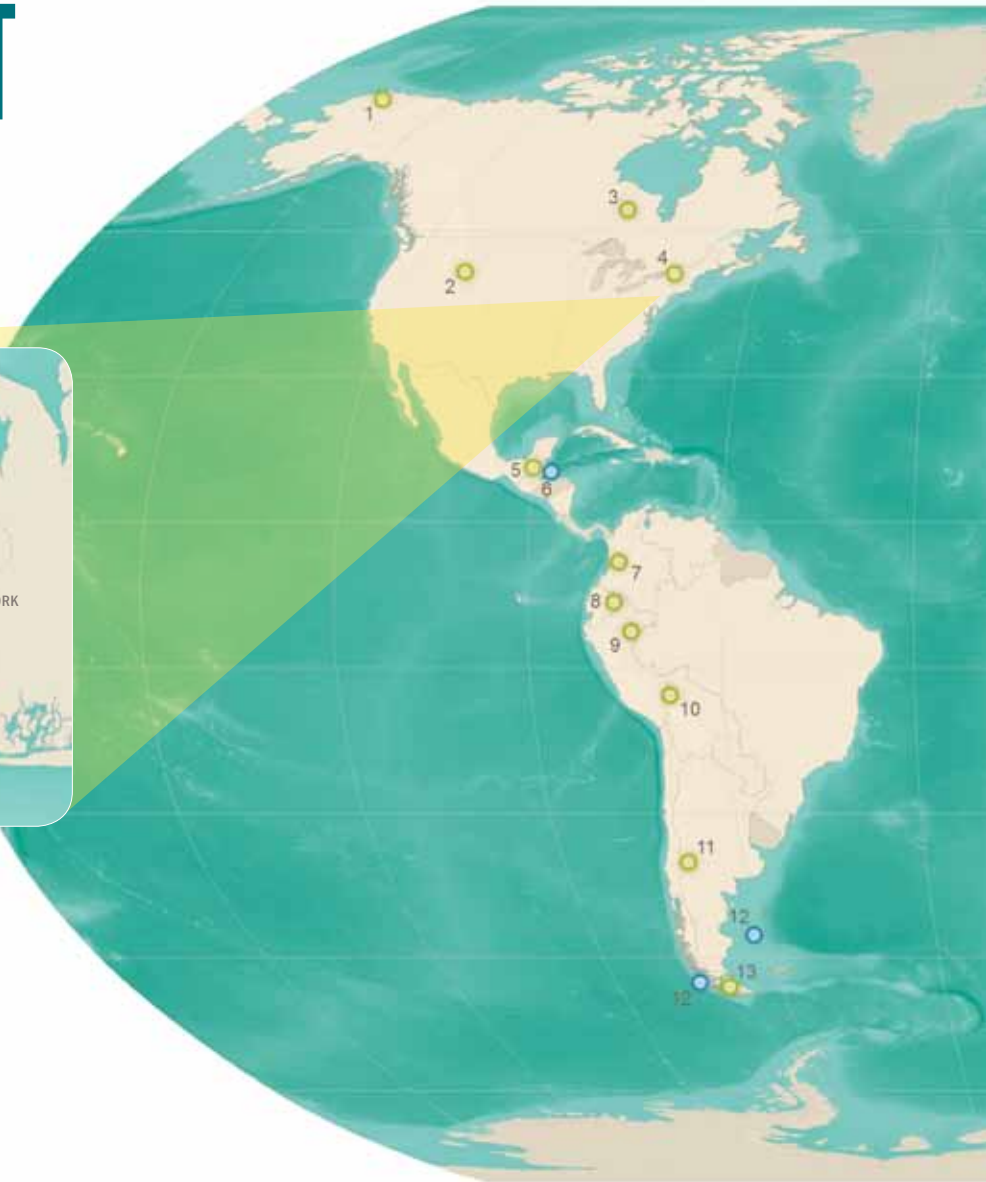
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# OUR CONSERVATION FOOTPRINT



WCS ZOOS & AQUARIUM



## WCS LANDSCAPES & SEASCAPES

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### NORTH AMERICA

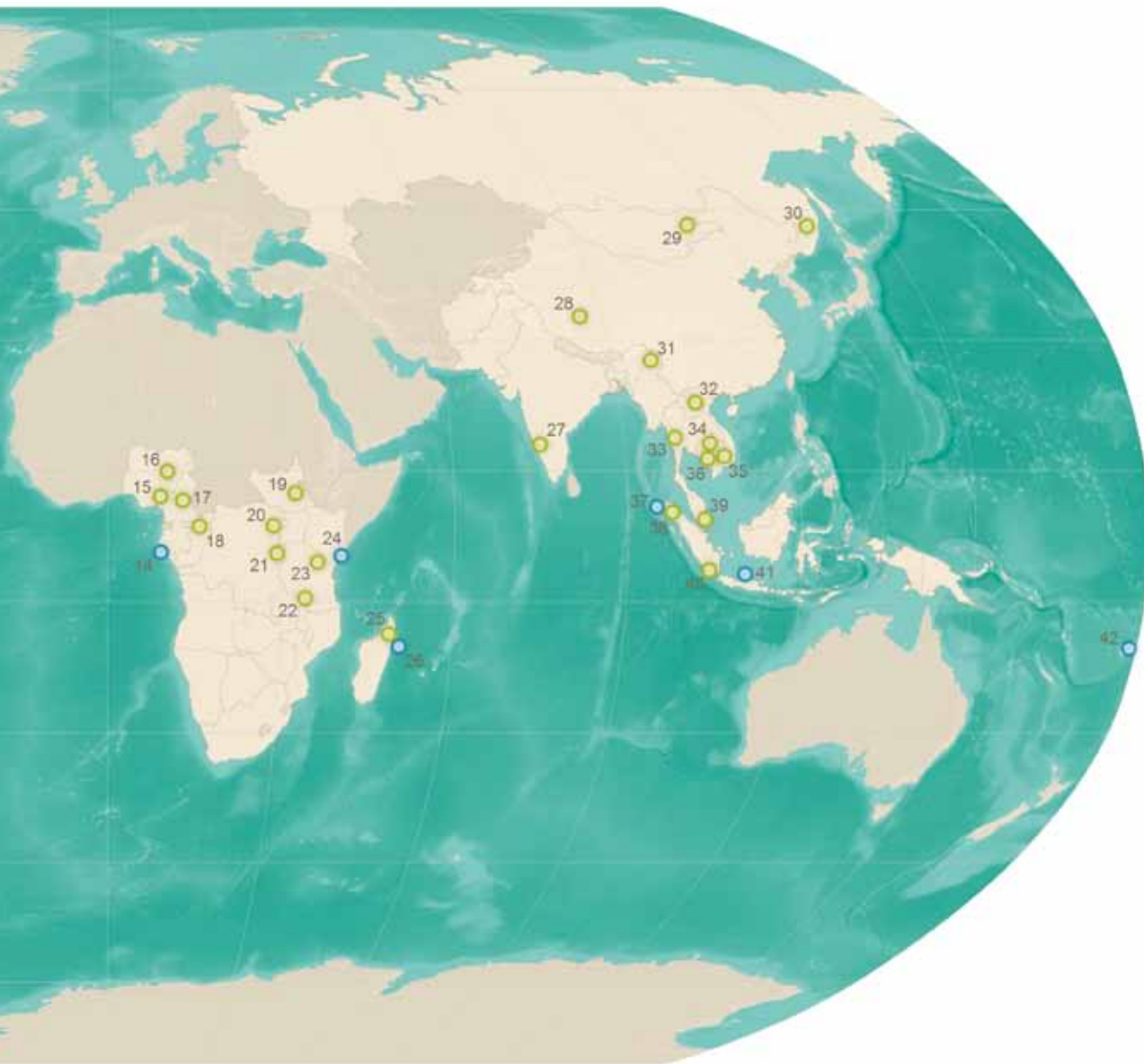
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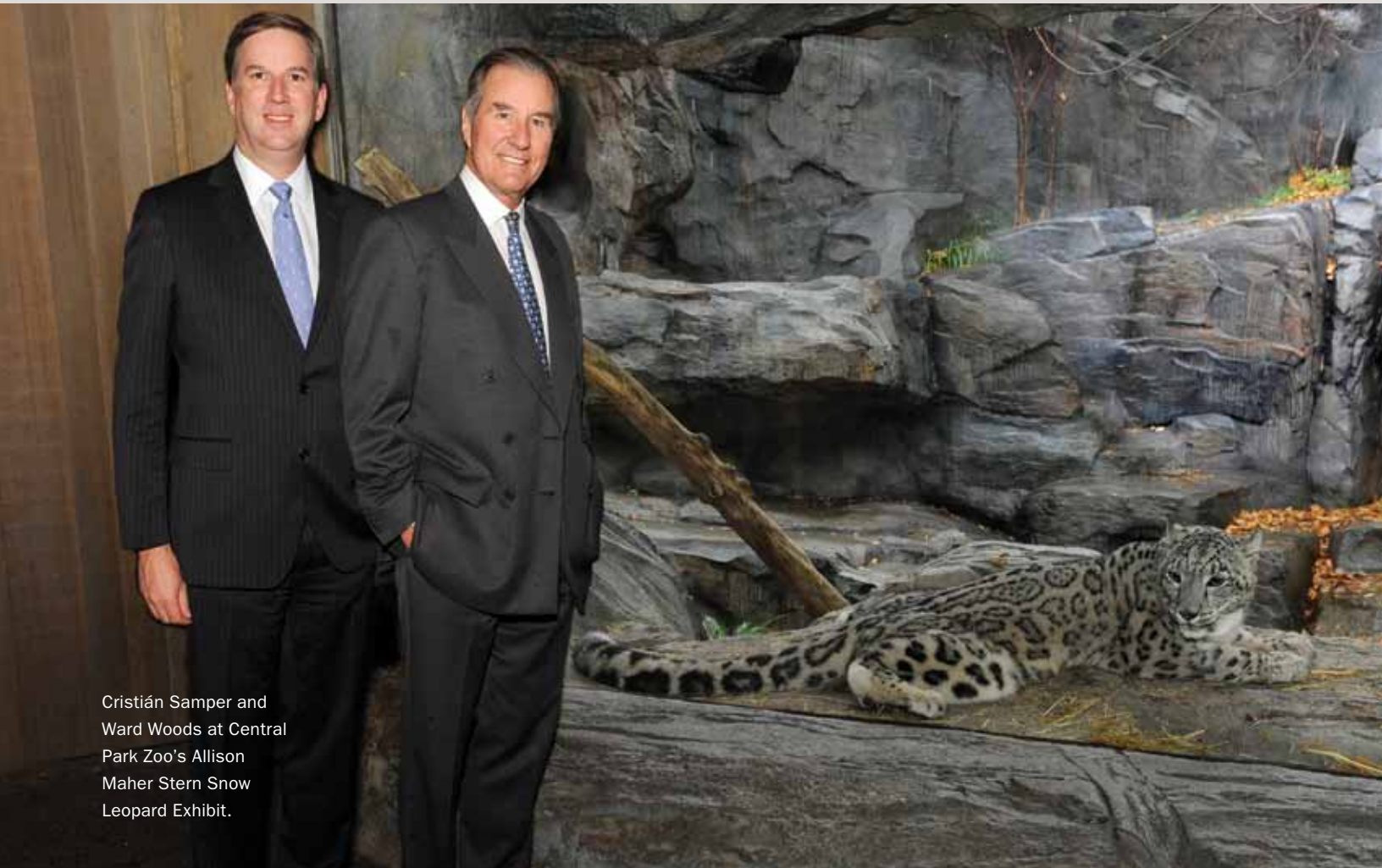
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Since its founding in 1895, the Wildlife Conservation Society has committed itself to ground-breaking, science-based conservation, both in its parks and in the field globally.



Cristián Samper and Ward Woods at Central Park Zoo's Allison Maher Stern Snow Leopard Exhibit.

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(December 31, 2012)

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## DEAR FRIENDS,

A tiny animal experienced a gigantic milestone in 2012 deep in the forests of Tanzania. The Kihansi spray toad, no bigger than a fingernail, may have beaten extinction.

For the first time, an amphibian has been reintroduced into nature after it was declared extinct in the wild. The habitat of the Kihansi spray toad had been altered by the construction of a hydroelectric dam that eliminated the heavy natural mist – necessary for the animal’s survival – from the spray zone of the Kihansi Falls.

At the request of the Tanzanian government, staff from the Bronx Zoo’s Department of Herpetology went to the Kihansi Gorge to collect the last remaining wild toads in November 2000. The toads were brought back to the United States, where the Bronx and Toledo Zoos worked out elaborate husbandry protocols with specific environmental parameters designed to meet the unique requirements of the toads.

As the Tanzanian government set up artificial misting systems to replicate the animals’ original habitat, WCS’s Bronx Zoo and the Toledo Zoo bred toads in specially designed biosecure facilities in New York City and Toledo with the hope that they could one day be returned to their African home. It was zoological science and husbandry at their best. At 2 p.m. on October 30, 2012, close to 2,000 Kihansi spray toads were reintroduced back into the wild. In a truly extraordinary and historical moment, a missing piece of nature’s puzzle was put back into place.

The story of the Kihansi spray toad is key to understanding what differentiates the Wildlife Conservation Society from other conservation organizations. Since our founding in 1895, we have harnessed our expertise in zoological husbandry, conservation biology, and veterinary science to save wildlife and wild places. Now well into our second century, WCS continues to excel in all three disciplines to get the conservation results that count.

Indeed, our history is packed with stories describing how we have combined our many strengths to fulfill our mission. In addition to our work this year to protect the Kihansi spray toad, we launched a bold strategy to save the 25 most endangered turtle species and we continued efforts that date back to the early 1900s to protect the American bison.

We also continued our efforts to protect large wild places across the globe in areas as varied as Afghanistan, the Arctic, and Africa. As recently as December 2012, we celebrated a major conservation success when the U.S. government, using WCS research and data, announced a final management plan for the National Petroleum Reserve-Alaska that balances wildlife conservation and energy development in the biggest public landscape in the

United States. This effort will help ensure that the most important Arctic wetlands and wildlife corridors for caribou and migratory birds will be protected from development.

WCS continued to address the global crisis in wildlife trafficking on several fronts. In Mozambique we negotiated an agreement with the government to co-manage the Niassa National Reserve to combat elephant poaching in that country’s largest protected area. In multiple landscapes, we deployed a new wildlife protection initiative, SMART (the Spatial Monitoring and Recovering Tool), which helps park and community rangers fight trafficking by identifying poaching hotspots, improving rapid response measures, and calculating anti-poaching efforts in order to maximize results.

At the same time, WCS conservationists have been successful in places like Zambia in helping former poachers find alternative livelihoods that generate income for their families while relieving pressure on local fauna.

We love to tell stories describing how WCS’s components complement one another. We are especially pleased to explain how zoos are more important than ever as partners in global field conservation. As wild landscapes shrink and disappear, the knowledge and skills we have developed in our zoos are vital to the care and management of wildlife forced to live in ever smaller spaces. The Bronx Zoo has been a leader in developing this know-how as zoos evolve into scientific powerhouses and strategic settings to raise assurance colonies of threatened species.

Other distinguishing characteristics of WCS have been the vision, commitment, and creativity of our leaders through the decades – beginning with New York Zoological Society founding director William Hornaday and continuing to the present. This year marked a major transition for WCS as Dr. Steven Sanderson retired after leading our organization for more than a decade. During his tenure, Steve expanded our global conservation program fivefold and shepherded a magnificent renaissance at the Bronx Zoo. It was his leadership that helped knock down the walls between our zoos/aquarium and our field work – enabling us to take on challenges and create amazing success stories like the Kihansi spray toad.

We take inspiration from our past as we recommit ourselves to protecting our threatened planet for generations to come. We invite you to join us in this effort.

**Ward W. Woods**  
*Chair of the Board*

**Cristián Samper**  
*President and CEO*

# WCS BY THE NUMBERS

**4.47 MILLION**

2012 visitors to WCS zoos and aquarium

**308.5**

Acres of wildlife parks we manage in NYC



**80%**

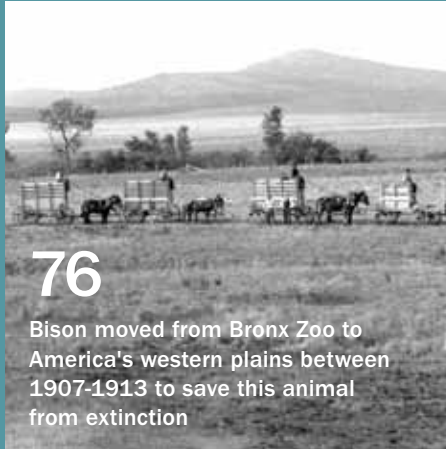
of elephants die as a result of poaching rather than natural causes

**MORE THAN \$2 MILLION**

Retail value of nearly one ton of ivory seized in New York City by Manhattan District Attorney's office in July 2012

**\$55,000**

Amount in fines related to the ivory seizure that will go to WCS for elephant conservation



**76**

Bison moved from Bronx Zoo to America's western plains between 1907-1913 to save this animal from extinction

**1**

Genetically pure bison born at the Bronx Zoo in 2012

**NEARLY 100**

Increase in mountain gorilla population of Bwindi Impenetrable Forest since 2006 according to 2012 WCS census results

**880**

Number of mountain gorillas left in the world

**90,430**

Emails sent to Congress during our online Fall 2012 Multinational Species Stamp Reauthorization campaign

**793,457**

Total emails sent to Congress via WCS campaigns in support of wildlife in 2012



**\$5,000**

Cost for each of 200 wildlife rangers protecting a 1,000-square-mile area of Thailand's Huai Kha Khaeng Wildlife Sanctuary

**4 & 5 YEARS**

Sentences handed down to two tiger poachers sentenced in Thailand in 2012 as a result of WCS collaboration with local law enforcement

**50+**

Record number of tigers counted in Thailand's Huai Kha Khaeng Wildlife Sanctuary in 2012



**26-27  
MILLION**

Estimated number of sharks killed annually for the shark fin trade

**UP TO \$100**

Cost of a bowl of shark fin soup in New York City's Chinatown

**40**

Number of shark, skate and ray species found in the local waters surrounding New York City

**\$13.3  
MILLION**

Value of all WCS-related television stories placed in 2012

**157 MILLION**

Number of viewers reached by those stories

**5,539,568**

Total video views on Zootube, WCS's YouTube channel in 2012

**256,743**

Number of Facebook fans for WCS and our parks since 2008



**50**

Estimated number of migratory bird species that breed in Alaska's National Petroleum Reserve (NPR-A)

**10.7 MILLION**

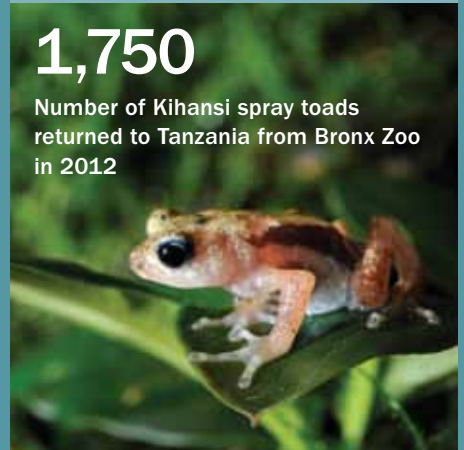
Acres of NPR-A land protected from drilling in 2012

**MORE THAN  
100**

Number of frog species extinctions associated with chytrid fungus since the 1970s

**1,750**

Number of Kihansi spray toads returned to Tanzania from Bronx Zoo in 2012



**233**

Number of butterfly species previously unknown to Peru's Bahuaja Sonene National Park found by a WCS-led research team in 2012

**50**

Number of reptile and amphibian species previously not found in Bahuaja Sonene discovered by the same team

Two of three Amur tiger cubs born at WCS's Bronx Zoo in 2012.



# WCS STORY

## HARNESSING THE POWER OF OUR ZOOS/AQUARIUM AND FIELD CONSERVATION

**IN 2012, WE CONTINUED TO USE OUR ZOO- AND AQUARIUM-BASED HUSBANDRY EXPERTISE TO PROTECT A VARIETY OF SPECIES, FROM INDONESIA'S RARE MALEO BIRD TO TANZANIA'S KIHANSI SPRAY TOAD — RETURNED TO ITS FORMER HABITAT AFTER GOING EXTINCT IN THE WILD. IN MOZAMBIQUE WE WORKED TO ESTABLISH A NEW RESERVE TO ADDRESS THE ONGOING CRISIS OF ELEPHANT POACHING, WHILE IN ARCTIC ALASKA OUR DATA HELPED TO STRIKE THE RIGHT BALANCE BETWEEN WILDLIFE PROTECTION AND ENERGY DEVELOPMENT. THESE AND OTHER STORIES DOCUMENTED HERE CAPTURE AN ORGANIZATION EVER STRIVING TO FULFILL ITS MISSION TO PROTECT WILDLIFE AND WILD PLACES.**

### **COMBINING ZOO AND FIELD EXPERTISE TO SAVE SPECIES**

The reintroduction of some 2,000 spray toads to Tanzania's Kihansi Gorge marked a major milestone for this tiny species. The repatriation effort was the result of a 12-year partnership between WCS's Bronx Zoo, the Toledo Zoo, the government of Tanzania, and the World Bank after the toads' misty habitat adjacent to a waterfall was disrupted by the construction of a new hydroelectric dam. The toads were bred at the Bronx and Toledo Zoos while their habitat was restored with an artificial misting system. In October, representatives of organizations partnering in the Kihansi project gathered with local village members to release the toads back into their native landscape. The exact time for this historical event: 2 P.M., October 30, 2012.

Three maleo chicks hatched at the Bronx Zoo after a roughly two-month-long incubation period. Adult maleos can be seen in the zoo's World of Birds – the only place these unusual birds can be found outside of their native home of Sulawesi, an island in Indonesia. Maleos are members of the megapode family, almost half of whose species are threatened with extinction. Maleo numbers in the wild have declined drastically due to human egg collection and predation by invasive species. Knowledge gained at the Bronx Zoo regarding maleo incubation and chick survival has been used by WCS field staff in Sulawesi to hatch and head start chicks before returning them to the wild.

WCS's work to produce pure bison calves resulted from a recognition that the vast majority of present-day bison have traces of domestic cattle genes. The genes entered bison populations early in the 1900s as a result of interbreeding efforts when western ranchers tried to create a hardier breed of cattle. Unfortunately, the interbreeding resulted in bison that lack some of the very qualities that helped the species to survive for thousands of years in the harsh climate of North America's Western prairies. In the fall of 2011, WCS arranged for a group of female bison to be implanted with genetically pure bison embryos. The result was the first-ever genetically pure bison calf produced by embryo transfer.

### **SAVING THE WORLD'S MOST ENDANGERED TURTLES AND TORTOISES**

In 2012, WCS announced a new strategy to take direct responsibility for the continued survival of some of the world's most endangered tortoises and freshwater turtles. WCS will breed several species in captivity with the goal of returning them to the wild. WCS captive collections will further serve as assurance colonies in the event that populations in the wild go extinct. Such colonies are designed to preserve the genetic variation of wild populations.

More than half of the world's approximately 330 species of freshwater turtles and tortoises are threatened with extinction due to both legal and illegal exploitation, as well as habitat loss.

Much of the turtle trade is driven by both demand from southern China, primarily for human consumption, and the global pet trade. WCS will strive to alleviate threats to highly endangered turtles by working with governments in nations with high turtle diversity, including Cambodia, China, Myanmar, Vietnam, Colombia, Ecuador, and Guatemala.

WCS will begin threat mitigation programs for at least four Critically Endangered species, along with reintroduction and population supplementation programs. These species include: the Burmese starred tortoise (*Geochelone platynota*), the Burmese roofed turtle (*Batagur trivittata*), the southern river terrapin (*Batagur*

*affinis*), and the Central American river turtle (*Dermatemys mawii*). Field efforts aim to reduce threats such as capture (for local consumption or commercial trade), drowning in fishing nets, and harvesting of eggs.

WCS has plans to begin recovery of other species suited for zoo breeding programs within the U.S. For example, WCS is establishing a captive breeding and head-start program for imperiled turtle species native to New York State. Off-exhibit, outdoor enclosures at the Bronx Zoo will house several species, including the spotted turtle (*Clemmys guttata*), Eastern box turtle (*Terrapene carolina*), and wood turtle (*Glyptemys insculpta*). This program is aimed at supplementing remaining wild populations.

## NEW YORK AQUARIUM REBUILDS AFTER HURRICANE SANDY

As Hurricane Sandy struck the Northeast on the night of Monday, Oct. 29, 2012, the New York Aquarium suffered extensive damage from the accompanying storm surge. Waters from the Atlantic Ocean came over and under the Coney Island Boardwalk. The salt water completely or partially flooded all of the buildings on the aquarium's 14-acre campus. Significantly damaged were the facility's heating, air conditioning, electrical power, and distribution systems, along with animal life support systems. Flooding further damaged the interiors of most exhibit buildings.

Eighteen staff members were on-site during the storm, fighting to protect the aquarium and its animals. During the first few days after the storm, aquarium staff, joined by other Wildlife Conservation Society colleagues, worked 24/7 to stabilize the animal collection. Within four days, all aquatic life support systems were restored and running on generator power, enabling us to continually provide for the animals.

This effort represented the first stage of the aquarium's recovery. All of our sharks, turtles, penguins and marine mammals – walrus, sea lions, harbor seals, and sea otters – survived the storm. Losses in the collection were greatest in the invertebrate exhibits. Throughout November, WCS staff and contractors worked around the clock on emergency recovery efforts. This included care of the collection, pumping water from flooded buildings, establishing emergency power, and removing debris and flood-damaged equipment.

WCS has taken a number of steps toward the goal of rebuilding and reopening the aquarium. We were slated to begin construction on the planned expansion of the aquarium at the end of October. That project has been delayed, but despite this terrible flood event, WCS remains committed to the \$147 million expansion, including the new *Ocean Wonders: Sharks!* exhibit, in partnership with the City of New York.

## MODIFYING GEAR FOR MORE PROFITABLE FISHERIES

A study completed this year by WCS and marine partners drew a close connection between fisheries' success to the size of fish harvested. The authors, WCS's Tim McClanahan and Christina Hicks of the Centre of Excellence for Coral Reef Studies at James Cook University, have been studying Kenya's fisheries for close to 20 years to find ways to reduce the poverty around them. One of their research approaches is to investigate how catches and incomes of fishers are impacted by either following or changing traditional fishing methods.

The paper, published in the journal PLOS ONE, looked at trends in the lengths of the 15 most common types of fish caught in the coastal fisheries of Kenya to see if these species were fished at rates that reduce fishers' potential incomes. The research indicates that modifying gear to prevent the catch of smaller, juvenile fish results in higher profits for local fishers. According to the findings, an increase in the current minimum mesh size of fishing nets by only 2.5 cm would protect over 60 percent of the current catch from being harvested prematurely. Mesh size restrictions have been preferable to fishers over outright bans.

## UNDERSTANDING THREATS TO ASIA'S VULTURES

In recent years, Asia's vultures have declined by more than 90 percent across the Indian subcontinent. Today, they are considered critically endangered. Scientists now understand that the majority of vulture declines are due to veterinary use of diclofenac, a drug used to boost health in cattle but which is toxic to the vultures who scavenge their carcasses. Though largely unintentional, the mortalities threaten a species already challenged by slow breeding, limited food, habitat loss, and hunting.

Despite this grim outlook one Southeast Asian country has, with WCS's help, been successfully working to protect these beleaguered birds of prey: Cambodia. Since 2004, a WCS team has collected data from sites in Cambodia, Lao PDR, and Vietnam – working with government officials, hunters, and wildlife traders to better understand the complex threats to vultures. The team has protected and monitored vulture nesting sites and feeding stations, run health assessments, calculated population sizes based upon analyzing the DNA of vulture feathers deposited at feeding stations, and put satellite transmitter vests on birds to assess their range.

A 2012 paper published in *Bird Conservation International* describing the team's findings notes that the vultures' success in Cambodia largely stems from the general absence of diclofenac in a region home to three species that rely on domestic animals for food. Despite the fate of their kin in surrounding countries, these populations have held on, with recent censuses indicating new nests and even population increases. With continued investment, these populations can survive and grow.

Cambodian vultures have had a friend in the Royal Government of Cambodia, which preemptively instituted measures to prohibit the use of diclofenac. The nation has been hospitable to vulture “restaurants”—feeding stations where safe sources of meat are provided for the birds. The restaurants are especially important in light of recent declines in wild ungulates, formerly staple food sources for vultures. The challenge now is to protect of vultures from poisoning, shooting, and habitat loss.

### TRACKING MERCURY POLLUTION IN ADIRONDACK LOONS

An extensive study of New York's Adirondack loon population by WCS and partners this year revealed that mercury contamination can lead



to population declines of this iconic bird. For nearly 10 years, researchers from WCS, the New York State Energy Research and Development Authority, and the Biodiversity Research Institute (BRI) followed mercury contamination through the aquatic food chain. Their 2012 report showed that loons with elevated mercury levels produced significantly fewer chicks than those with lower levels.

Although naturally present at low levels, mercury becomes an air pollutant largely through emissions from coal-fired power plants.

[ ABOVE ] Under the leadership of Jim Breheny, WCS is establishing assurance colonies at the Bronx Zoo for some of the most endangered species of turtles and tortoises in the world.

## ACHIEVEMENTS / DISCOVERIES

- Researchers from WCS's Colombia Program assist in confirming presence of a critically endangered subspecies of brown spider monkey in Selva de Florencia National Park.
- Conservationists from WCS's Peru Program discover 365 previously undocumented species in Bahuaja-Sonene National Park.
- WCS researchers find that the Cross River gorilla, the world's rarest, has significantly more suitable habitat than previously believed.
- Researchers for WCS discover that humpback whales on the far ends of the southern Indian Ocean do not sing the same songs, as whales in other ocean basins usually do.
- WCS identifies how wolverines dig ice caches, or caves, for use as “refrigerators” to protect collected meat from rotting.



[ ABOVE ] WCS conservationists have identified a connection between mercury contamination and reproductive success in Adirondack loons.

In some areas, cement plants and mining-related industries contribute to mercury pollution. Winds carry the pollutant from distant point sources. Airborne mercury eventually returns to the earth in rain, snow, and fog droplets, as well as in dry form. Adirondack lakes—where aquatic loons live and raise young—are exposed to mercury contamination deposited in the environment.

Mercury is toxic at even small levels and accumulates in animals as it progresses up the food chain. Loons feed at the highest level in that chain, increasing their risk of toxic mercury exposure. Scientists found that adult loons with high mercury levels do not incubate eggs consistently enough for chicks to hatch, undermining reproductive success. More than half of the adult Adirondack loons are at moderate to high risk of mercury poisoning. Their long-term survival requires a reduction of mercury in the atmosphere.

In December of 2011, the U.S. Environmental Protection Agency finalized the Mercury and Air Toxics Standards rule that requires coal-fired power plants to update their mercury pollution control technologies. However, overseas emissions pose an additional problem. The U.N. Environmental Programme (UNEP) is developing a global treaty on mercury monitoring, which is expected to be ratified in 2013.

## LEADING THE PUSH FOR CLEAN URBAN WATERS

Since 2001, a grant from National Oceanic and Atmospheric Administration (NOAA) managed by WCS has contributed to dramatic results along the Bronx River: eight acres of habitat restored or preserved; 7,000 students instructed; 1,500 educators trained; and the reintroduction of the once-native alewife fish. Some 3,000 people canoe on the river annually. Thousands of others come to enjoy the acres of new riverside parks, bike paths and green spaces. The Bronx River restoration provides a national model for the new federal Urban Waters initiative, designed to stimulate local economies, create jobs, and protect Americans' health by revitalizing waterways in underserved communities.

WCS's leadership caps a decades-long effort to restore the Bronx River for New Yorkers – an effort with roots in New York City's very founding. In 1639, a Swedish businessman named Jonas Bronck purchased 500 acres from the Lenape Indians north of New Amsterdam that featured a beautiful 23-mile waterway. Bronck's River, as it became known, supported so many beavers that Europeans flocked to the area to acquire their pelts. As New Amsterdam morphed into New York, the animal became such an important symbol of the region's growing economy that it was enshrined in the seal of the city.



While the beaver's image remained a part of New York, the animal itself would disappear from the Bronx River along with other wildlife. With the arrival of factories, freight rail, and automobiles, the river became pollution-choked and devoid of life. By the 1970s, the Bronx had the lowest per capita green space in all of New York City and a disproportionately large number of industrial plants. In reaction, local activists began efforts to clean the river. Those efforts were long hampered by a lack of resources, but funding began flowing in the 1990s via a partnership between federal and local governments, local citizens, and nonprofit groups.

Back in the Bronx, the recent return of two beavers, the symbol of New York City's original economic engine, suggests that the river restoration is taking on a life of its own. The reappearance of species like wood ducks and snapping turtles shows the fantastic strides we have taken in restoring our urban waters and reminds us there can be no turning back.

### HELPING TO ESTABLISH MADAGASCAR'S LARGEST PROTECTED AREA

WCS has led efforts to protect the biodiversity of Madagascar's Makira forest for more than a decade. With WCS planning assistance at both the government and community level, the Makira Natural Park became this island nation's largest protected area in 2012. The park, to be managed by WCS, represents a key step in reaching the nation's goal of protecting 10 percent of its natural lands. WCS also provided technical assistance to quantify and verify the carbon sequestered in Makira. Future carbon offset sales will help protect the park from deforestation.

Located in northeastern Madagascar, Makira Natural Park covers an area larger than the state of Rhode Island. The park will protect Madagascar's largest remaining rainforest while providing a new model for integrated

conservation championed by WCS, where local communities – de facto stewards of forest resources – become partners with the state in protected area management. Such community-based initiatives are a hallmark of WCS conservation in land and seascapes across the globe.

The new park contains 20 of the island's 103 species of lemurs, a group of primates found only in Madagascar. Makira's lemur species include the red-ruffed lemur and the silky sifaka – recently discovered in Makira's mid-altitude forests and one of the 25 most endangered primates on the planet. Makira Natural Park ensures the conservation of many other species, including the cat-like fossa, which requires large areas of intact forest to maintain healthy populations.

In addition Makira is a part of new efforts to tackle climate change by reducing deforestation. In 2008, using a global framework known as REDD+ (Reduced Emissions through Deforestation and Forest Degradation), the Malagasy government and WCS announced an agreement to market Makira's carbon offsets—an estimated 31 million tons over 30 years—to finance the long-term conservation of Makira. The agreement will bring direct benefits to local communities helping to manage the park.

### SUPPORTING GREEN DEVELOPMENT IN MYANMAR

For decades, national and international civil society organizations with an environmental focus have been strong advocates for conservation in Myanmar. With growing democratization after decades of oppression, the influence of such groups is growing. As the only international conservation NGO with a permanent presence in Myanmar, WCS assembled more than 80 of the nation's environmental experts from civil society and government in January 2012. Together, they discussed the nation's biodiversity, the threats it faces, and the priorities for future investment.

**The Makira Natural Park, to be managed by WCS, represents a key step in reaching Madagascar's goal of protecting 10 percent its natural lands.**

## ACHIEVEMENTS / FIRSTS

- Working with the Republic of South Sudan and USAID, WCS helps to inaugurate a new state-of-the-art park headquarters for Boma National Park.
- Conservationists with WCS's Afghanistan Program capture and fit two snow leopards with satellite collars, a first for snow leopard research in the country.
- Pronghorn in Wyoming use overpasses for the first time that were constructed to enable animals to cross over Highway 191.
- On Mexico's Yucatan coast, a WCS conservationist is the first to track manta rays—the world's largest ray species—with satellite transmitters.

## WCS DIGITAL PROGRAMS

WCS digital efforts expanded significantly in 2012. With growth of more than 26 percent, our constituent base was able to show its support for WCS, its parks, and its programs through advocacy, fundraising, ticket and membership sales, and even by the purchase of a cocoa roach – a 100 percent dark chocolate representation of a Madagascar hissing cockroach, produced as a Valentine's Day promotion.

Overall, our efforts generated more than 965,000 emails to Congress, other elected officials, and agencies in support of legislative initiatives such as: reauthorization of the Multinational Species Conservation Funds Semipostal Stamp Reauthorization Act, which would continue the Save Our Vanishing Species stamp created in 2011; the National Bison Legacy Act, which would make the American bison our National Mammal and establish an annual National Bison Day in November; continued USAID Biodiversity Funding; and recommendations to the Bureau of Land Management for energy development in Alaska's National Petroleum Reserve that balances energy extraction with protection of critical wildlife and habitat.

Our online campaigns raised awareness and funding in support of a variety of threatened species, including orangutans, elephants, gorillas, and tigers. Online efforts also played a critical role in raising both awareness and financial support for recovery and rebuilding efforts at the New York Aquarium in the wake of Hurricane Sandy. Finally, online ticket and membership sales for the zoos and aquarium grew by 22 percent with significant web and email support.

That discussion is in large part due to the broad environmental vision of Myanmar's new president, U Thein Sein. In his September 2011 inaugural address, Thein Sein promised to "take measure in various sectors to reduce air and water pollution, control dumping of industrial waste, and conserve wildlife." Six months later, he suspended work on the Myitsone Dam, a \$3.6 billion project financed by China that

threatened to create a reservoir larger than the area of Singapore. Then, in January 2012, the government cancelled a 4,000-megawatt, Thai-financed coal-burning power plant.

These were not one-off decisions. The nation's parliament has passed green legislation mandating environmental and social impact assessments, and a new Department of Environmental Conservation will implement the new laws. In July 2012, during a visit by U.S. Secretary of State Hillary Clinton, Myanmar committed to become a signatory to the Extractive Industry Transparency Initiative. The group of environmental experts convened by WCS in January 2012 identified 132 Key Biodiversity Areas throughout the country. These results are the first steps in a process of government and civil society working together for biodiversity conservation.

With millions of people dependent upon Myanmar's natural resource base, the environmental sector is at the heart of the country's future. The international community has an unprecedented opportunity to support and build a Myanmar-led process for sustainable development of the country's vast natural resources. With assistance, Myanmar has the chance to succeed — where many of its Southeast Asian neighbors have failed — and become a regional model for linking environmental sustainability and economic growth.

## BUSTING IVORY POACHERS AND TRADERS

WCS field staff across Africa and Asia have followed the growing elephant carcass count with alarm. They have seen how roads built for the logging and mining industries are providing poachers access to wildlife and links to distant markets. 2011 was the worst year on record for elephant deaths since ivory trade was banned in 1989. 2012 saw a surge in ivory demand in Asia, where global criminal networks are pushing wild elephants ever closer to extinction. Eight out of 10 elephants today die as a result of poaching.

WCS works with partners across the trade chain, from the wild areas in Africa and Asia where elephants still roam, to the markets of Vietnam and China. We are developing and implementing scientifically-based law enforcement monitoring systems that are successfully controlling poaching in the sites where they are fully implemented. As a result, some of the few places across Central and East Africa where elephant numbers have been maintained are WCS-monitored sites.

We are developing intelligence networks around our elephant sites in Asia to detect and apprehend poachers and illegal wildlife traders. We are partnering with the authorities to ensure that these individuals are prosecuted in court and given appropriate sentences. We are working

with enforcement agencies, including Customs, in Vietnam and China, training them in wildlife laws and the identification and apprehension of smugglers. We are exploring novel ways, through Chinese social media, of changing attitudes and behavior to reduce demand for ivory.

The illegal wildlife trade is not limited to Asia. In July, a joint investigation by the Manhattan District Attorney, the New York State Department of Environmental Conservation and the U.S. Fish and Wildlife Service led to the arrest of two jewelers selling illegally-obtained ivory in midtown Manhattan's diamond district. The ivory carried a staggering retail value of more than \$2 million. If we want our children and grandchildren to share the planet with elephants, we must work all along the trade chain to crack down on those driving them into oblivion.



### PROMOTING SUSTAINABLE CASHMERE

Argentina's Grupo Costa del Río Colorado cooperative recently conducted its first U.S. sale of cashmere wool for use in knitting high-quality sweaters, hats, gloves, and other garments. Its "green" cashmere is produced through a system of sustainable practices that protect wildlife—in this case, the guanacos, rheas, and Andean cats of the windswept Patagonian Steppe. The soft wool comes from goats tended by members of the cooperative. While cashmere production has had a negative impact on biodiversity conservation in other parts of the world, these herders are minimizing the environmental impacts of their goats while protecting local biodiversity.

WCS's Patagonia Steppe Program has been providing assistance. The group's sustainable practices include adjusting herd sizes to match the carrying capacity of the lands the goats graze, improving the health status of herds, and using guard dogs to minimize livestock-wildlife conflicts with predators such as the Andean cat.

Despite keeping fewer goats, the cooperative's herders have increased their incomes overall due to better husbandry practices, the higher profit garnered from access to an international market, and the higher value of a green product. With WCS's support, they recently obtained a Wildlife Friendly certification for their cashmere, which allows producers to appeal to buyers with a special seal distinguishing their cashmere from other varieties in the marketplace.

The cooperative's first sale to a buyer in the United States represents a 10 percent increase in annual income from goats for members of the group. This is an enormous validation for the program, which will now be expanded to include more goat herders across an even greater area of this landscape. The Grupo Costa del Río Colorado herders are continually seeking new ways to improve the quality and quantity of their product. Green cashmere could be the latest fancy fabric to hit store shelves, all in the name of wildlife.

[ ABOVE ] WCS works with Patagonia goat herders like Lucia Forquera to protect local biodiversity.

## ACHIEVEMENTS / INNOVATIONS

- Using technology to identify individual tigers by stripe patterns, WCS conservationists in Thailand help convict two tiger poachers.
- WCS marine conservationists win the "Solution Search" grand prize for a program to promote bycatch escape gaps for fish traps in Curaçao and Kenya.
- Using digital photogrammetry, a WCS conservationist estimates the body mass of juvenile moose to determine the relationship between size and winter survival.
- Working with the CDC and other partners, WCS health experts help to identify animal-borne pathogens in illegally imported wildlife entering the United States.



[ ABOVE ] WCS efforts in Ethiopia are restoring wild dog populations.

[ RIGHT ] Highway overpasses like this reduce collisions between motorists and pronghorn during the animals' bi-annual migrations.

### PLANNING FOR THE SURVIVAL OF ETHIOPIA'S CHEETAHS, WILD DOGS, AND LIONS

In April 2012, action plans developed by WCS with the Zoological Society of London were launched to protect three of Ethiopia's large carnivores – the cheetah, wild dog, and lion – from growing threats posed by development and other human-related activities. Ethiopia is an important area connecting East Africa to North Africa populations for these charismatic animals. WCS planning assistance was funded by the Howard Buffett Foundation with support from the National Geographic Society.

The plans will provide an essential guideline for the conservation of these species. For lions, the hope is to secure and restore sustainable populations throughout their present and potential range in Ethiopia. Southern Ethiopia provides a crucial link in the connectivity between East and Central African lion populations. Though African lions are the national symbol of Ethiopia, they present a risk to the lives of humans and livestock. Lions are the principal predators of domestic livestock in Ethiopia, and anger over livestock losses has led to human-lion conflict and lion population declines.

Conservation needs for cheetahs and wild dogs overlap widely. Both require larger areas than do many other carnivore species. New agricultural production and development make conservation actions more difficult. A number

of Ethiopia's key wild dog and cheetah populations straddle international boundaries, notably between Kenya and South Sudan. Transboundary management will therefore be required for long-term conservation of both species. Other threats addressed in the plan include livestock conflicts, prey loss, poorly managed tourism, illegal trade, and disease – an issue of special concern for wild dogs.

### PROTECTING WILDLIFE AND MOTORISTS WITH HIGHWAY BRIDGES

In October 2012, WCS conservationists announced that newly constructed overpasses providing safe passage for thousands of migrating pronghorn had been used successfully. The bridges over U.S. Highway 191 in Trapper's Point, Wyoming, and other nearby areas are the culmination of years of cooperation among conservationists and government officials, along with land and transportation planners. In addition to protecting wildlife, the bridges are expected to significantly reduce motorist casualties resulting from collisions with animals.

Overpass locations were chosen according to data collected by WCS, the Wyoming Cooperative Fish and Wildlife Research Unit, and the Wyoming Game and Fish Department. This data helped to identify the pronghorn's preferred highway crossing points. WCS has long studied a 93-mile pronghorn migration corridor between the Upper Green River Basin

New overpasses provide safe passage for thousands of migrating pronghorn.



and Grand Teton National Park (GTNP). That passageway, the “Path of the Pronghorn,” is the first and only federally designated migration corridor in the U.S.

As part of their research, WCS scientists used GPS tracking collars to collect information on the location and timing of pronghorn movements and impediments such as fences, roadways, and energy infrastructure. Trapper’s Point has historically been a “bottleneck” area, causing thousands of pronghorn to cross highway traffic lanes and creating a perilous situation for humans and wildlife alike. Two overpasses and six underpasses will now accommodate

the pronghorn, mule deer, moose, elk, and other animals.

Pronghorn are North America’s fastest land animals. Of an estimated 35 million in the early 19th century, about 700,000 remain. More than half of those live in Wyoming. The animals migrate to find food, mating opportunities, suitable habitat, and other resources they need to survive. While WCS conservationists study pronghorn throughout western Wyoming, those that follow the path are of particular interest. Their continued journeys to and from GTNP ensure that a 6,000 year-old migration remains a part of our national heritage.

## ACHIEVEMENTS / PROTECTED AREAS

- WCS’s conservation efforts over two decades help in the creation of Madagascar’s Makira Natural Park, home to the highest diversity of lemur species on the planet.
- WCS efforts to establish a transboundary protected area in Beringia receive support from U.S. Secretary of State Hillary Clinton and Russian Foreign Minister Sergey Lavrov.
- WCS leads a successful effort to balance resource extraction with conservation concerns in Alaska’s National Petroleum Reserve.

## PROTECTING THAILAND'S TIGERS

Following the poaching deaths of at least nine tigers in Thailand's Western Forest Complex in 2010 and 2011, WCS helped to establish patrols that apprehended suspects in the killing of a tigress and her three cubs. One poacher's cell phone contained a digital image of him posing on a dead tiger. The suspects argued that the animal was killed in neighboring Myanmar, but WCS camera trap photos proved otherwise.

With wild tiger numbers down to 3,200 from more than 100,000 a century ago, the urgent need to protect these magnificent cats and their prey could not be greater. WCS's long-running collaboration with the Government of Thailand to train and deploy park guards in the country's most important reserve, the Huai Kha Khaeng Wildlife Sanctuary, has led to seven years of population stability in tigers and other wildlife, in contrast to dramatic declines in nearby unprotected parks.

[ BELOW ] Camera traps like this one in Thailand help to monitor the status of individual tigers.

**WCS's long-running collaboration with the Government of Thailand to train and deploy park guards in the country's most important reserve has led to seven years of population stability in tigers and other wildlife.**

The most effective protection involves the long-term efforts of committed park rangers patrolling protected areas with support for local communities. Though wildlife guards are typically deployed by national governments, outside support for technical training and financial resources is proving critical. Much of that comes from non-governmental organizations, with their generous private donors, and from national government agencies like USAID and the U.S. Fish and Wildlife Service.

More money — and the resulting increase in the number of guards — is crucial to the survival of species targeted by poachers. Fortunately, relatively small investments can have big impacts. In Huai Kha Khaeng, nearly 200 rangers cover an area of 1,073 square miles for an annual cost of under \$5,000 per ranger. The results are encouraging: the cell phone-wielding poachers were convicted in 2012 to terms of four and five years — the harshest punishments for poaching in Thai history.

## MARKING INDEPENDENCE DAY IN SOUTH SUDAN

WCS has been a conservation partner with South Sudan since the end of the two-decade long civil war with the north. Surveys conducted by WCS in 2007 revealed that globally unique wildlife and other natural resources had survived the war. With funding from USAID, WCS and the Government of South Sudan have been working since 2008 to sustainably manage natural resources, conserve biodiversity, improve security in remote areas, and reduce natural resource-based conflicts.

On July 9, 2011, the people of South Sudan formally voted to become an independent nation. Yet in the year following the vote, the relative peace that accompanied the separation of South Sudan from its northern neighbor gave way to new ethnic conflict and clashes over disputed oil fields. While petroleum drives much of the conflict, the south remains home to other critical resources: vast un-fragmented ecosystems, immense water resources and intact woodlands; and the world's second largest land mammal migration.

WCS serves as the official technical partner of the Government of South Sudan for its protected area system. The establishment and stewardship of areas such as the Boma and Badingalo Parks, along with key wildlife migration corridors, has led to a dialogue over land and resource management and improved detection and deterrence of armed groups. Protected area employment opportunities are a stabilizing influence for young farmers and herdsmen susceptible to involvement in tribal unrest.



As South Sudan observed its first year of independence, the government and its international partners continued to build on recent progress: by reducing conflicts over natural resources; by improving security in rural areas; by developing ecotourism opportunities; and by conserving the region's remarkable ecosystems and wildlife migrations. Similar resources and tactics helped South Sudan's neighbors. Rwanda and Ethiopia ranked among the world's 10 fastest growing economies for 2001-2010, while the Tanzania tourism industry accounts for 20 percent of that nation's total exports.

### IDENTIFYING WILDLIFE IN PERU

In February 2012, WCS's Peru program announced the discovery of 365 previously undocumented species in Bahuaja Sonene National Park (BSNP) during a recent expedition to that area. BSNP contains more than 600 bird species, including seven different types of macaw; more than 180 mammal species; more than 50 reptiles and amphibian species; 180 fish varieties; and 1,300 types of butterfly. WCS Latin America & Caribbean program director Julie Kunen describes the park as "truly one of the crown jewels of Latin America's impressive network of protected areas."

The discovery of even more species there underscores the importance of ongoing conservation work in the region. This expedition was especially important because it was the first time that research of this scale has been carried out in Bahuaja Sonene National Park in the last 15 years. Fifteen researchers participated in the inventory, which focused on plant life, insects, birds, mammals, and reptiles. The discovery included: 30 undocumented bird species, including the black-and-white hawk eagle, Wilson's phalarope, and ash colored cuckoo; two undocumented mammals – Niceforo's big-eared bat and the tricolored bat; as well as 233 species of butterflies and moths.

Since the 1990s, WCS has been working in Tambopata and Bahuaja Sonene Parks in Peru; and Madidi, Pilon Lajas, and Apolobamba Parks in neighboring Bolivia. The transboundary region, known as the Greater Madidi Landscape, spans more than 15,000 square miles of the tropical Andes. WCS has helped form more than 20 community-based enterprises in the area that promote the sustainable use of natural resources, such as native honey, subsistence hunting and fishing, ornamental fish cultivation, cacao, handicrafts, and timber. More than 3,000 local people benefit from these community initiatives.

### LEADING EFFORTS ON CARIBOU STRATEGY IN CANADA

WCS Canada Director Justina Ray played a central role this year in the development of Environment Canada's long-awaited National Recovery Strategy for boreal caribou. Released in October, the strategy provided a scientific basis for recovery objectives and critical habitat identification. Environment Canada (EC) is Canada's federal ministry responsible for the nation's environment and natural heritage. Ray has served on the Science Advisory Group for critical habitat assessment since 2009.

The strategy's timing is important. Boreal caribou have vanished from about 40 percent of their historic range in North America and populations require large tracts of mature forest to survive. Though northern Canada is commonly considered wilderness, new development is changing the landscape. The clearing of land combined with roads built to access resource exploration are bringing about profound changes to their habitat.

Completion of the recovery strategy is remarkable in Canada's current political climate. With other Science Advisory Group members, Ray submitted comments to EC critiquing how the science from the 2011 critical habitat

## ACHIEVEMENTS / SUPERLATIVES

- Working with Guatemala partners, WCS helps facilitate an agreement to safeguard some 80,000 acres of intact forest in the heart of the Maya Biosphere Reserve.
- WCS compiles the most comprehensive marine mammal consumption report to date, helping identify smaller cetacean species that may be in danger of overexploitation.
- WCS conservation work in Bolivia helps document Madidi National Park's prolific plant and wildlife in what is by some estimates the most biodiverse landscape in the world.

## WCS LEADERSHIP IN THE MEDIA

During the past year, the WCS Communications Department initiated a successful new push to more aggressively develop and place opinion and blog pieces in both the print and online media to promote the work of WCS at home and abroad. Those efforts have resulted in dozens of high-value op-ed placements in venues that include:

- *The New York Times*
- *New York Daily News*
- *Christian Science Monitor*
- *USA Today*
- *National Geographic*
- *Crain's New York Business*
- *CNN.com*

In one six-month period, separate pieces by WCS Conservationists Liz Bennett and Justina Ray appeared on the op-ed page of *The New York Times* – the most sought-after and competitive opinion space in the world. Through these and other placements, WCS has been able to show its leadership, drive policy, and raise new funds on a wide variety of institutional priorities – from the urgent need for greater local enforcement to combat the illegal wildlife trade, to the global threats to sharks from the shark fin trade, to the opportunities for positive environmental action in the newly democratic nation of Myanmar.

At the same time WCS leaders have found their voices in a variety of electronic media, blogging online for outlets both local and national, including *The Huffington Post*, *The Guardian Environment Blog*, *Yale Environment 360*, *The New York Times*' "Scientists at Work" column, the *Queens Ledger* and *Patch.com*. With more conservation-minded readers getting their information from non-traditional sources, blogs and other digital media will play a greater role in the dissemination of WCS's wide-ranging conservation efforts in the years to come.

exercise was applied in their draft recovery strategy. She worked closely with EC scientific staff to respond to industry feedback and to proposals for improving the sections on caribou habitat and distribution objectives. She also advised several conservation groups on their public comments to the draft strategy.

The completed strategy provides a framework for managing cumulative disturbance over 2.4 million-square kilometers of Canada – an area close to the size of India and representing nearly one quarter of the country. Additionally, it puts forward a novel approach to managing critical habitat for a wide-ranging species that has lost significant ground to an expanding human footprint over the last 100 years and is threatened

by intensifying natural resource development interests in the north.

## NARROWING THE HUNT FOR EBOLA

In 2011, an outbreak of Ebola hemorrhagic fever near Kampala, Uganda took the life of a 12-year-old girl. In response, conservationists with PREDICT, part of USAID's Emerging Pandemic Threats program, embarked on a study of 14 previous human Ebola outbreaks and the responses of wildlife teams collecting animal samples. The report, published this year and led by WCS epidemiologist Sarah Olson, found that collecting samples from animal carcasses during outbreaks was a more effective detection method than samples from live animals.

PREDICT is a consortium of WCS and the University of California at Davis, in partnership with Ecohealth Alliance, Metabiota, and the Smithsonian Institution. With the support of USAID, the Emerging Pandemic Threats program is protecting and improving global health, making it possible to pre-emptively identify novel pathogens in wildlife that could pose pandemic threats to humans.

The Ebola study was designed to develop a set of animal sampling recommendations to maximize the effectiveness of outbreak response efforts with limited resources. Because the initial human infections have an animal origin, early detection of Ebola in animal populations near a human outbreak is crucial for learning more about this highly lethal virus. PREDICT wildlife veterinarians were sent to victims' villages to screen wildlife as a source of the virus.

Olson and her colleagues found that carcass sampling yielded a 50 percent chance of finding the virus or antibodies against it, compared to less than six percent with free-ranging live animals. Response efforts to outbreaks of Ebola hemorrhagic fever in Africa can now benefit from a sampling strategy that focuses on the carcasses of gorillas, chimpanzees, and other species susceptible to the virus, according to wildlife health experts participating in the study, which was published in an online issue of *Emerging Health Threats*.

## LEADING THE WAY ON SCIENCE EDUCATION

In September, the Association of Zoos and Aquariums (AZA) awarded its top honor for educational programming to the Wildlife Conservation Society for the Online Teacher Academy. This innovative program helps educators discover and develop new teaching methods while inspiring student learning and conservation action. The AZA award recognizes outstanding achievement in educational program



design – judging programs on their ability to promote conservation knowledge, attitudes and behavior; show innovation; and measure success.

WCS created the Online Teacher Academy in 2007 with support from the Laura J. Niles Foundation. The Online Teacher Academy introduces educators to life science content, teaching methods, and new technology while using resources like zoos and aquariums as serious tools for teaching science. The program helps teachers to further develop their understanding of the living world and revitalize their love of nature and science.

The need for more and better prepared science teachers could not be greater. The National Academies has ranked the U.S. 47th out of 49 wealthy countries in the proportion of science students graduating with degrees in science or engineering. While the “Race to the Top” competition demonstrates the U.S. Department of Education’s commitment to recruiting, developing and retaining effective teachers, even the best traditional teacher preparation programs often present too few opportunities to learn science.

Institutions such as zoos and aquariums can fill the gap. Through professional development, the Online Teachers Academy makes a significant impact on environmental and conservation education in the classroom. WCS Education Director Don Lisowy says he hopes the program will serve as a model for future science education programs. This web-based resource for teacher professional development has already made a tremendous difference in teaching educators about conservation in New York City, across the country, and around the globe.

## RECOGNIZING CONGO'S WILDLIFE HERITAGE

In the summer of 2012, dedicated efforts by WCS led to recognition by the United Nations of a wide swath of three Central African nations as



a new World Heritage Site. With support from the UN Foundation and UNESCO, WCS completed technical work leading to the listing of this site, which includes portions of the Republic of Congo, Cameroon, and the Central African Republic (CAR). These diverse ecosystems comprise the Sangha Tri-National Protected Area (TNS), home to some of the last great populations of African forest elephants, gorillas, chimpanzees, and other endangered species.

The Congo portion of the site, Nouabalé-Ndoki National Park, is co-managed by WCS. The world’s second largest rainforest, Ndoki, holds more than half of the world’s gorillas, along with some 30,000 forest elephants and 20,000 chimpanzees. With WCS support, Ndoki

[ ABOVE ] The 2012 designation by the United Nations of a new World Heritage Site spanning three nations of Central Africa will protect more than half of the world’s gorilla population.

## ACHIEVEMENTS / SECOND CHANCES

- Some 2,000 Kihansi spray toads represent the first amphibian species to be released back into its natural habitat after being declared extinct in the wild.
- The Bronx Zoo’s *World of Birds*, the only place that the endangered maleo bird can be found outside of its native home in Indonesia, welcomes three newly-hatched chicks.
- Surveys led by WCS conservationists in Pakistan find that the population of markhor—a majestic and threatened goat species — has expanded by 500 percent since 1991.



[ ABOVE ] WCS is working to better understand the behavior of wolverines like these in Montana's Gravelly Range.

expanded this year to include the Goualougo Triangle, a 1,636-square-mile area home to a rare population of so-called “naïve” chimpanzees, first identified by WCS conservationist Mike Fay. These apes have had so little exposure to humans that they investigate the conservationists who study them instead of running away. WCS is working to protect the chimps from increased hunting pressure, habitat loss, and outbreaks of diseases such as Ebola.

In CAR, WCS conservationist Andrea Turkalo has studied forest elephants for nearly two decades at Dzanga Bai, one of many forest clearings where these mammoth herbivores often congregate with a host of other large mammals, including bongo, forest buffalo, and giant forest hogs. Unlike many other protected areas, TNS comprises an intact, ecologically functional landscape, making its protection all the more critical. The recognition of this new site marks the first time the World Heritage Committee has given its namesake status to a site spanning three nations.

## DOCUMENTING WOLVERINE REFRIGERATOR USE

Wolverines range over large areas of cold, mountainous, low-productivity habitat with persistent snow. Yet these conditions, which would test most animals' survival skills, account for several unique adaptations, including the ability to store and “refrigerate” their food supply through tough times. The cold found in snow pack and crevices plays a particularly important role in wolverine reproductive success, enabling them to safeguard their food supply and provide nutrition for lactating females nursing their young.

A study released in July by WCS and partners documented wolverines' use of cold caches to preserve food sources such as elk, caribou, and moose carrion. Notes lead author Bob Inman of the WCS North America program, “People don't normally think of insects and microbes as being in competition for food with wolverines. But in fact bacteria devour unprotected food.” These chilled, structured chambers provide protection of food from scavengers, insects and bacteria.



The cold storage plan reduces the energy spent by females searching for food while in lactation phase, cutting the time spent away from their cubs. Wolverine reproduction appears to be confined to a brief period of the year, and the lactation phase in females (February through

April) corresponds to a period of low food availability. Wolverines have adapted by amassing food caches during the preceding months when food is more readily available.

Understanding why and how wolverines exist where they do and the various adaptations they have evolved to survive will better inform population management and conservation strategies. A previous 2010 study suggested that wolverines must have deep snow available in springtime so that they can give birth to their small cubs in a warm, secure den. The new report showed that other factors such as competition for food may also be involved in explaining the limits to wolverine distribution.

### DOCUMENTING MADIDI'S NATURAL TREASURES

From snow-capped peaks to lowland tropical forests, Bolivia's Madidi National Park inspires awe. The 7,335-square mile reserve, a portion of the larger Madidi-Tambopata Landscape shared with Peru, lures tourists with its natural beauty, but scientists come to the park for different reasons. For years, they've sought to document the terrain's prolific plant and wildlife. With help from WCS, the Bolivian Park Service this year released a new compendium suggesting that Madidi National Park might be the most biodiverse region in the world.

Even though scientists have surveyed only one third of the park, their findings so far amaze: more than 1,868 vertebrates, including 200 species of mammals and nearly 300 types of fish; and 12,000 plant varieties. With an estimated 1,088 bird species, Madidi is thought to possess 11 percent of the globe's avian diversity. Only eleven countries contain more avian species (the entire United States boasts fewer than 900 bird species). Madidi's mammals range from the lowland tapir—an Amazonian herbivore weighing up to 660 pounds—to the

## ACHIEVEMENTS / DEBUTS & ANNOUNCEMENTS

- WCS launches a video produced to train military personnel on the consequences of purchasing illegal wildlife products while stationed overseas.
- The world's largest known crocodile—*Crocodylus thorbjarnarsoni*, now extinct—is named in honor of Dr. John Thorbjarnarson, the WCS conservationist and pre-eminent crocodylian expert who succumbed to malaria in 2010.
- Oscar Loayza of WCS's Madidi Program in Bolivia receives the Kenton Miller Award for Innovation in Protected Areas Management.
- WCS Executive Vice President for Conservation and Science John Robinson is elected as a regional councillor for North America and the Caribbean for the International Union for the Conservation of Nature (IUCN).
- WCS Executive Vice President and Zoos & Aquarium General Director Jim Breheny is named onto the Board of Directors of the Association of Zoos & Aquariums (AZA).
- WCS Chief Veterinarian and Director of Zoological Health Paul Calle is named president of the American Association of Zoo Veterinarians (AAZV) Executive Committee.



[ ABOVE ] Orphaned Pacific walrus Mitik immediately won the hearts of New Yorkers after his arrival at our aquarium this fall.

.14-ounce Spix's disk-winged bat. The harpy eagle, one of the world's most robust winged predators, preys upon sloths and monkeys inside the bountiful park, also home to 60 species of hummingbird.

What actions for the region's unparalleled biodiversity? Varying altitudes, says WCS's Madidi Landscape Program Director, Dr. Robert Wallace. With Madidi's almost 20,000-foot altitudinal range, no other protected area captures the diversity of South American habitats. Although the new compendium emphasizes Bolivia's fertile terrain, much of the park remains unexplored. While there is much more to discover, this much we know with certainty: in addition to the cloud forests' biodiversity and watershed importance, they represent one of Latin America's most staggeringly beautiful landscapes.

### HELPING MARINE MAMMALS LIKE MITIK ADAPT TO MELTING SEA ICE

The October arrival of Mitik, a 15-week-old, 234-pound orphaned Pacific walrus, at WCS's New York Aquarium in Coney Island, Brooklyn, caused great excitement. Only two weeks later Mitik – who came to us after being rescued off the coast of Barrow, Alaska – faced the second crisis of his young life when Hurricane Sandy flooded the New York Aquarium. Dedicated staff

remained with the walrus pup throughout the storm, providing him with round-the-clock care.

Since then, the aquarium's latest resident has been readily adjusting to his new home. We hope to be able to present him to the public with our two other Pacific walrus at our Sea Cliffs exhibit later this year, but Mitik's case is an opportunity to share the conservation challenges that are resulting in more orphaned marine mammals today. While polar bears get much of the attention regarding the effects of warmer temperatures on Arctic sea ice, other iconic species are likewise feeling the heat.

The Pacific walrus rests on floating platforms of ice between dives to the sea bottom for food. As the summer ice disappears, floes increasingly occur only over deep waters of the Arctic basin, far from land. It has now become difficult, and in some cases impossible, for walrus – particularly females and their calves during summer – to use sea ice as a resting platform between diving forays. As a result, strandings of the kind experienced by vulnerable calves like Mitik have become more common.

Protective measures for Arctic marine wildlife must be put in place as the effects of climate change become more pronounced. At recent workshops held in Alaska, groups like the Eskimo Walrus Commission engaged with agencies such as the U.S. Coast Guard and the Marine Mammal Commission to discuss new pressures facing marine mammals. In the meantime, Mitik and his fellow walrus at our aquarium are ambassadors for their brethren in the wild.

### ADDRESSING COMPLEX CHALLENGES WITH NEW LEADERSHIP

While 2012 was a year of transition at WCS, our mission remained as focused and committed as ever. Steve Sanderson's wonderfully productive tenure at WCS gave way to new leadership with the arrival of Cristián Samper from the Smithsonian Institution's National Museum of Natural History. With training as a tropical biologist, Cristián brings with him a deep knowledge of species and natural processes, as well as a passion for global conservation through effective science, principled advocacy, and engagement with our dedicated partners in government, philanthropy, and civil society. All of those tools will be essential as we endeavor to meet the growing challenges of the illegal wildlife trade, global climate change, and balancing human needs and development with the conservation of the natural world and its often-vulnerable inhabitants. If time and history provide the great unfolding narrative, we – like the zookeeper's son in this year's best picture Oscar nominee *"Life of Pi"* – prefer the version *with* the animals.

## MALEO EGG HATCHING

The Bronx Zoo is the only place you will find the endangered maleo bird outside of its native home on the Indonesian island of Sulawesi. The Bronx Zoo hatched three maleo chicks in 2012 (our most productive year ever!) and there are now two male and seven female birds in the collection. Because maleos nest communally and produce oversized eggs, nesting sites are sought after by villagers, dogs, feral pigs and numerous other natural and introduced predators. As part of a maleo conservation strategy, our Indonesian field staff is collecting and artificially incubating maleo eggs and head-starting chicks before releasing them back into the wild.

1. The maleo pair first dig a hole in the sand for the female to lay an egg.
2. Once laid, the egg is brought immediately to the incubation room, where it is maintained under special temperature and humidity parameters.
3. The egg is weighed regularly to monitor its development. New incubation and rearing protocols have allowed us to overcome the initial difficulties found in the breeding program.



4. The growing embryo can be monitored by "candling," in which a bright light is placed behind the maleo egg's thin shell to assess its development.
5. Chicks hatch in a highly developed state, being able to fly, find food, and thermoregulate the same day they emerge from their nest.
6. One of three maleo chicks hatched at the Bronx Zoo in 2012.

White-cheeked gibbons  
watch over their new baby  
at the Bronx Zoo.



# FINANCIAL REPORT

# 2

**THE LAST DECADE HAS BEEN A PERIOD OF TRANSFORMATION AND GROWTH FOR THE WILDLIFE CONSERVATION SOCIETY. AT THE SAME TIME, WE STAYED TRUE TO OUR COMMITMENT TO MAINTAIN POSITIVE OPERATING MARGINS AND SET ASIDE FUNDS EACH YEAR TO SUPPORT OUR INCREASING PLANT INFRASTRUCTURE AND TECHNOLOGY NEEDS. WE CLOSED THE 2011-12 FISCAL YEAR WITH OPERATING REVENUES TOTALING \$223.3 MILLION – \$15 MILLION AND 7 PERCENT HIGHER THAN THE PRIOR YEAR. OPERATIONS ENDED THE YEAR WITH A SMALL SURPLUS OF \$1.7 MILLION FOR THE NINTH CONSECUTIVE YEAR OF POSITIVE RESULTS.**

Our investments in programmatic and fundraising leadership and capacity-building in species, landscapes, science, and global wildlife health are achieving measurable results and increasing sustainable funding. Programmatic support from private contributions, federal agencies, foreign aid, and multi/bilateral funding have likewise fueled continued growth in education, global conservation, zoo-based programs, and wildlife health.

In Fiscal Year 2012, contributions and grants from individuals and foundations, federal and state agencies, foreign aid, and multilateral organizations totaled \$98.5 million, a healthy 4 percent increase from the prior year. These sources provided 44 percent of all operating revenue. Federal grant support of our global programs through the United States Agency for International Development (USAID), the U.S. Fish and Wildlife Service (USFWS) and other agencies totaled \$31.6 million, nearly eight times the funding received from these sources a decade ago.

The establishment of WCS-Europe and the opening of a Brussels office have created new opportunities with European donors and agencies. The development of the WCS Species Program, which links global conservation with zoo-based programs, is also creating new revenue sources for WCS.

We have continued to focus on earned revenue growth by increasing park attendance and income through our new operating model focused on improving the visitor experience. In Fiscal Year 2012, WCS attendance increased 11 percent (436,000) above last

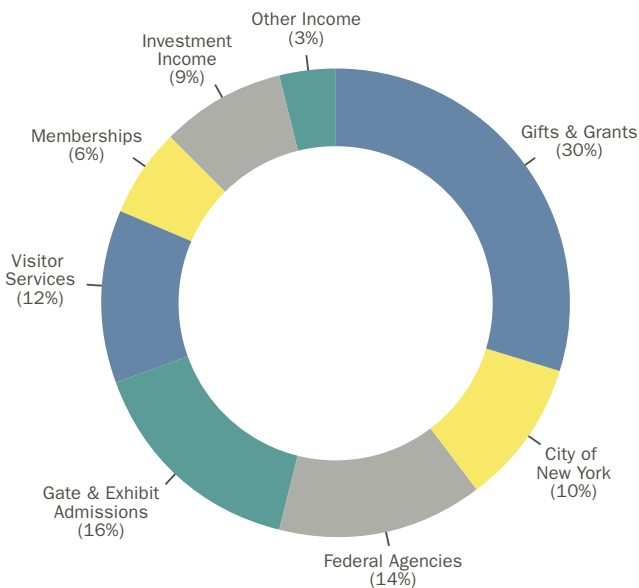
year to 4.47 million visitors. This was in line with projections, thanks in part to extremely favorable weather throughout winter and spring. Income from gate admissions, exhibits, membership, and visitor services (food, merchandise, and parking) grew 14 percent and exceeded \$75 million. This success is the product of on-line marketing, discounting, and promotion of higher value tickets and memberships. Audience-driven revenue sources were one third of total operating income in Fiscal Year 2012.

WCS is using business intelligence and consumer research to maximize admission and other audience-driven revenue, while supporting free visitation times at the Bronx Zoo and the New York Aquarium. Per capita earned revenues continue to increase, particularly at the Bronx Zoo, thanks to a proactive pricing strategy and sales management in the park and online. Membership is a key part of this initiative and results have been positive, with strong growth in online activity.

The City of New York provided a total of \$22.1 million for zoo and aquarium operations, \$1.6 million less than the prior year. This is due to improved earned income at the City Zoos, which reduced the Department of Parks and Recreation's reimbursement commitment by \$1.2 million compared to last year. This represents a continued trend of lower costs for the city thanks to WCS's active pricing, revenue strategies, and tight expense management. The lower value of utilities provided by the city for the Bronx Zoo and the New York Aquarium also contributed to the variance.

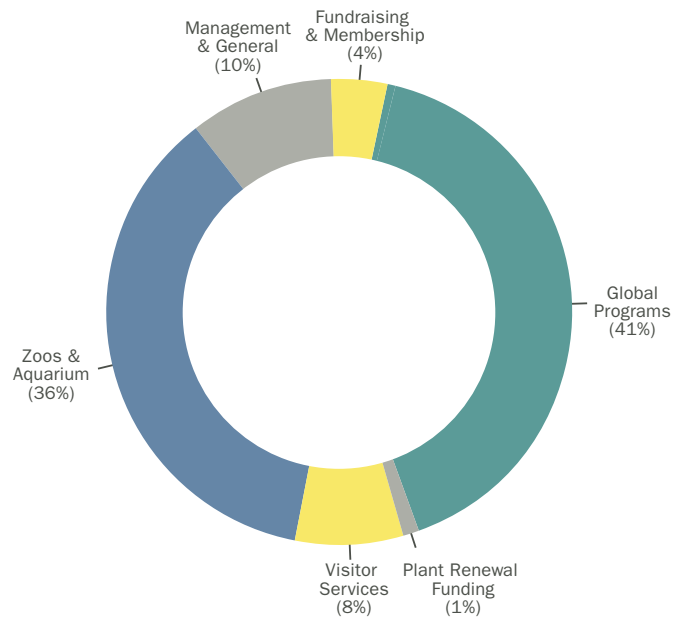
## 2012 OPERATING REVENUE

(\$223.3 million)



## 2012 OPERATING EXPENSES AND PLANT RENEWAL FUNDING

(\$221.5 million)



Investment income for operations totaled \$19.3 million in Fiscal Year 2012. Though little changed from the prior year, this is \$7 million less than in Fiscal Year 2009, when endowment and investment support totaled nearly \$26 million. WCS's endowment spending policy requires that the payout be reduced over time to account for the 29 percent investment loss experienced during the 2008 market crash.

WCS operating expenses reached \$221.5 million in Fiscal Year 2012, \$13 million or 6 percent higher than the prior year. Programmatic activity at our zoos and aquarium and our global programs totaled just over \$171 million. Half the growth came from our global conservation and health programs, which reached a new high of \$89 million through a combination of restricted gifts, grants, and contracts from individuals, foundations and government sources.

Zoo and aquarium expenses also increased from the prior year due to new hires that were grant-funded or essential to revenue-raising activities, and higher fringe-benefit and insurance expenses. Like many other organizations, WCS is struggling with the growing cost of benefits like health and workers' compensation insurance, which are contributing to expense increases.

Selected investments were made in fundraising and other support services in Fiscal Year 2012, but management also continued cost reduction measures with further programmatic management consolidations. Management and fundraising expenses make up a lean 14 percent of our expenditure base. This past year, WCS launched a five-year effort to replace most of WCS's stand-alone

financial and administrative systems. When this project is complete, the entire organization will function on a single platform managed at WCS's New York headquarters. We believe that this investment will create significant efficiencies and savings, provide better business intelligence, and foster organizational integration.

Capital expenditures totaled \$25.1 million in Fiscal Year 2012. Of the 125 active capital projects, eight accounted for \$21 million, or 84 percent of total expenditures. At the Bronx Zoo, large projects included the next phase of the CV Starr Science Campus: the LaMattina Wildlife Ambassador Center and a new isolation-quarantine unit at the Wildlife Health Center. In Coney Island, WCS continued to invest in the development of the expansion for the New York Aquarium with its new *Ocean Wonders: Sharks!* exhibit. Additionally, there were several improvements at the Central Park Zoo, most notably a new penguin exhibit cooling system. New York City continues to be our most generous funding partner for exhibit and other physical plant needs.

Turning to WCS's balance sheet, total assets were \$798.3 million, up slightly from \$796.6 million at the end of the prior fiscal year. WCS enjoys a high degree of liquidity, with operating cash and cash equivalents totaling \$67 million on June 30, 2012. At the end of Fiscal Year 2012, the market value of WCS's investment portfolio was \$381.4 million, down \$26.8 million from the prior year (\$408.3 million). The decrease resulted from the addition of \$3.2 million in gifts offset by negative investment returns and budgeted endowment spending transfers to operations, in accordance with WCS's endowment spending policy.



## CONSOLIDATED BALANCE SHEETS

June 30, 2012 and 2011, in thousands

<b>ASSETS</b>	<b>2012</b>	<b>2011</b>
Cash and Cash Equivalents	67,149	66,924
Accounts Receivable	3,704	4,037
Receivable from the City of New York	11,947	14,420
Receivable from the State of New York	5,048	4,861
Receivable from Federal Sources	28,810	31,056
Grants and Pledges Receivable	60,342	32,093
Inventories	2,067	2,090
Prepaid Expenses and Deferred Charges	4,383	5,765
Investments	381,466	408,305
Amounts Held in Trust by Others	2,030	1,684
Funds Held by Bond Trustee	10	10
Property and Equipment	231,305	225,369
<b>Total Assets</b>	<b>\$798,261</b>	<b>\$796,614</b>
<b>LIABILITIES AND NET ASSETS</b>		
Accounts Payable and Accrued Expenses	33,485	27,756
Annuity Liability	3,565	3,344
Bonds Payable	66,520	66,554
Post-retirement Benefit Obligation	35,383	28,351
<b>Total Liabilities</b>	<b>\$138,953</b>	<b>\$126,005</b>
<b>Net Assets</b>		
<b>Unrestricted:</b>		
General Operating	1,741	1,741
Designated for Long-Term Investment	114,105	149,059
Net Investment In Property and Equipment	164,795	158,825
<b>Total Unrestricted</b>	<b>\$280,641</b>	<b>\$309,625</b>
Temporarily Restricted	150,600	153,233
Permanently Restricted	228,067	207,751
<b>Total Net Assets</b>	<b>\$659,308</b>	<b>\$670,609</b>
<b>TOTAL LIABILITIES AND NET ASSETS</b>	<b>\$798,261</b>	<b>\$796,614</b>

Copies of audited financial statements are available upon request.

## OPERATING REVENUES AND EXPENSES

June 30, 2012 and 2011, in thousands

REVENUES	2012	2011
Contributed	\$50,369	\$43,323
Membership	13,887	12,010
Investment Income	19,271	19,051
City of New York	22,131	23,705
New York State	3,103	3,178
Federal Agencies	31,624	32,813
Non-governmental Organization Grants	13,391	15,448
Gate and Exhibit Admissions	34,849	30,060
Visitor Services	26,560	23,876
Education Programs	2,525	2,046
Sponsorship, Licensing, and Royalties	1,665	1,421
Other	3,886	1,392
<b>Total Revenue</b>	<b>\$223,261</b>	<b>\$208,323</b>

### EXPENDITURES

#### Program Services

Bronx Zoo	49,323	48,057
New York Aquarium	11,710	10,960
City Zoos	19,291	17,579
Global Programs	89,896	84,244
Lower Bronx River Habitat Conservation	1,027	126
<b>Total Program Services</b>	<b>\$171,247</b>	<b>\$160,966</b>
<b>Visitor Services</b>	<b>\$16,660</b>	<b>\$15,727</b>

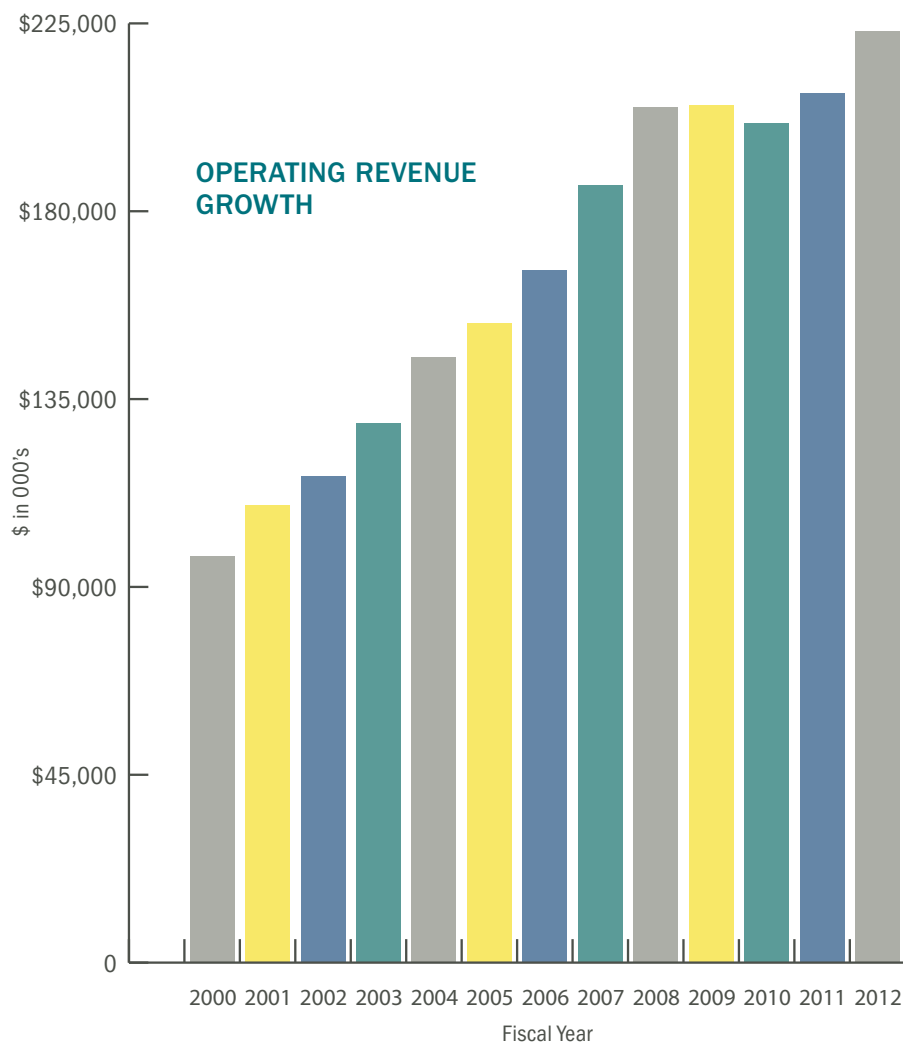
#### Supporting Services

Management and General	22,160	21,216
Membership	2,505	2,364
Fundraising	6,147	5,137
<b>Total Supporting Services</b>	<b>\$30,812</b>	<b>\$28,717</b>

<b>PLANT RENEWAL FUNDING</b>	<b>\$2,820</b>	<b>\$2,820</b>
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<b>TOTAL EXPENSES AND PLANT RENEWAL FUNDING</b>	<b>\$221,539</b>	<b>\$208,230</b>
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<b>EXCESS OF REVENUES OVER EXPENSES AND PLANT RENEWAL FUNDING</b>	<b>\$1,722</b>	<b>\$93</b>
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For the twelve-month period ending June 30, 2012, WCS's long-term investment portfolio had a return of -2.8 percent. WCS's investment performance benchmark was -2.5 percent over the same period. The negative investment return was due to the poor performance of legacy investments, which were down 38.6 percent for the fiscal year. The actively-managed portion of WCS's investment portfolio beat investment performance benchmarks. This loss in investment assets was offset by a \$30 million increase in pledges receivable, including a \$20 million receivable for an endowment bequest (estimated to reach \$50 million when all distributions are made) that will support global conservation work. Subsequent to June 30, 2012, WCS received the first \$20 million distribution from this bequest.

Liabilities have remained consistent, and WCS retains its AA-bond ratings with stable outlooks from both Moody's Investors Service and Standard & Poor's.

In summary, Fiscal Year 2012 was another successful year for WCS, programmatically and financially, and we ended the year well-positioned to launch several new programmatic efforts. One of our initiatives is the ambitious \$147 million expansion of the New York Aquarium in partnership with the City of New York. Unfortunately, these plans suffered a major and unpredictable setback.

On October 29, 2012 the aquarium suffered extensive damage from Hurricane Sandy. The Atlantic Ocean surged over the Coney Island Boardwalk, completely or partially flooding all buildings on the 14-acre campus. Thanks to the efforts of our staff, the animal collection did not sustain significant losses, but ocean flood waters significantly damaged the facility's heating, air conditioning, electrical power distribution systems, and animal life support equipment. Flooding also damaged the interiors of most exhibit buildings.

WCS quickly took a number of steps toward recovery and initial emergency efforts have been successful. We have stabilized animal life support and prepared the aquarium for reconstruction. We are currently assessing the cost and timeframe for rebuilding, and our design team is studying practical changes to both the existing aquarium and the planned expansion to better protect our facilities and the animal collection from future flood events. Rebuilding and reopening the aquarium will require a significant funding commitment from federal, state, and city governments.

WCS was slated to begin construction of the planned aquarium expansion at the end of October. This project has been delayed, but despite this terrible flood event, WCS remains committed to the *Ocean Wonders: Sharks!* project.

# QA

**SAW HTUN**



As Deputy Country Director for WCS's Myanmar program, Saw Htun has watched his nation transition from military rule to democratic government and embrace conservation as an important component of its future success. Here, he shares his thoughts on WCS efforts to monitor threatened species in the Hukaung Valley Wildlife Sanctuary, Myanmar's biodiversity investment vision, and the majesty of the endangered Asiatic black bear.

#### WHAT IS YOUR ROLE AT WCS?

I have been with WCS for 10 years, most recently as Deputy Country Director for Myanmar. In that role I have been supervising field projects, building capacity and skills of field staff, and developing project proposals, among other activities. As a conservationist, I have been mainly involved in protected area management planning, biological and socioeconomic research, biological and threat monitoring, community-based natural resource management, and conservation awareness and education.

#### HOW DID YOU BECOME INTERESTED IN WILDLIFE CONSERVATION?

I was unsure of my specific interest in forestry until I'd completed my second year as an undergraduate at Myanmar's University of Forestry. When our rector taught us about protected area management, he ignited a real passion for conservation in me. I love intact forests, crystal clear streams, and wildlife habitat. As I understood more about the interconnectivity between all living and non-living things through my studies of forestry, biology, and ecology, I became convinced that conservation is essential for the survival of humankind.

#### HOW DID WCS'S MYANMAR CONSERVATION PROGRAM ORIGINATE?

When it was launched in 1993, WCS's Myanmar Program originally focused on adding park rangers and developing protected areas. In terms of priority species, the program worked to protect tigers, Asian elephants, and other large mammals. We've built an effective conservation presence in the country through a strong working relationship with the Ministry of Environmental Conservation and Forestry, as well as the Ministry of Livestock and Fisheries.

#### WHAT WERE THE KEY CHALLENGES OF WORKING IN MYANMAR DURING MILITARY RULE?

Three things jump out. First, due to suspicion of outsiders, the military government created a lot of restrictions and burdensome procedures that were time consuming and made conservation activities ineffective. Second, the military government was hampered by a tendency to over-promise and a failure to deliver on the ground. And third, the command economy provided no systematic approach for development planning. Businessmen backed by the military government monopolized most of the lucrative businesses. This created a lot of conflicts with conservation.

#### HOW HAS THAT CHANGED UNDER THE NEW LEADERSHIP?

Since March 2011, Myanmar has experienced a rapid change in its political landscape. President U Thein Sein has signaled an intention to conserve forests, woodlands, and wildlife, and promised to identify economic development opportunities in parallel with environmental conservation. He suspended the construction of Myitsone Dam in the north and cancelled a 4,000-megawatt coal-burning power plant in the south. He also endorsed and promulgated the Environmental Conservation Law. It may be early to call him a "green" president, but he's heading in that direction.



Since March 2011, the Myanmar government has paid great attention to environmental issues and postponed mega infrastructure projects.

#### WHAT ARE THE KEY CONSERVATION PRIORITIES IN MYANMAR?

Recent collaboration between the Ministry of Environmental Conservation and Forestry and WCS led to a “Myanmar Biodiversity Conservation Investment Vision.” This process engaged more than 80 participants from government departments, universities, and civil society organizations. We identified over 100 species of globally Endangered and Critically Endangered wildlife and 132 key biodiversity areas holding significant populations of species of high conservation concern.

#### WHAT SPECIES AND LANDSCAPES IN MYANMAR ARE OF GREATEST CONCERN AND WHY?

Our highest priority species has been the tiger. WCS’s Myanmar Program helped the Forest Department establish the nearly 6,500-square-kilometer Hukaung Valley Wildlife Sanctuary in 2004, and then worked to increase the protected area to 17,000 square kilometers. Since the reserve was established, WCS has been working with the Forest Department on management plan development and systematic biological monitoring. Until recently this was difficult due to the complex political situation and the challenge of working in a huge area with limited resources.

#### WHAT IS YOUR GREATEST WILDLIFE MOMENT DURING YOUR TIME WITH WCS?

In 2004, the Forest Department and WCS conducted surveys in Hkakaborazi National Park. Our team of 10 members traveled three days from the nearest village to one of our designated sample plots. On the last day, we noticed something moving on top of a big tree about 100 meters away. I looked through my binoculars to see a big Asiatic black bear! Once it heard us, the bear went down swiftly and disappeared into the forest. I’ll never forget its shiny black fur, its vigilance, and its mightiness. Sadly, this bear has been targeted by poachers due to demand for its gall bladder and paws. Joint patrol teams of the Forest Department and WCS have confiscated bear parts and taken action against bear hunters.

#### WHAT IS YOUR PROUDEST CONSERVATION ACHIEVEMENT?

The establishment of a systematic law enforcement monitoring system in Hukaung Valley Wildlife Sanctuary – the biggest protected area in Myanmar. This landscape supports tigers and other important wildlife, including the Asian elephant, leopard, fishing cat, hog deer, Western Hoolock gibbon, Shortridge’s langur, and white-rumped vulture. Law enforcement is the most important intervention to save these important species. Collaboration between Myanmar’s Forest Department, WCS, dedicated park wardens, and rangers has been critical to success in Hukaung Valley. We are now applying this model to other high-value landscapes.



[ OPPOSITE ] WCS Myanmar program Deputy Country Director Saw Htun.

[ ABOVE ] WCS works with Myanmar’s Forest Department to protect Asiatic black bears from poachers.

A Caribbean flamingo hatchling takes its first tentative steps at the Bronx Zoo's Aquatic Bird Exhibit.



# GOVERNMENT & POLICY REPORT

# 3

**WCS CONTINUES TO CULTIVATE AND MAINTAIN RELATIONSHIPS WITH NEW YORK CITY, NEW YORK STATE, U.S., EUROPEAN AND MULTILATERAL POLICYMAKERS IN ORDER TO ADVANCE POLICY PRIORITIES AND PROTECT AND GROW VITAL FUNDING FOR CONSERVATION AND CULTURE. MUCH OF WCS'S SUCCESS, AT HOME AND ABROAD, IS DUE TO OUR ABILITY TO GAIN ACCESS TO LEADERSHIP AT ALL LEVELS, BUILD AND STRENGTHEN PARTNERSHIPS, AND INCREASE PUBLIC ENGAGEMENT THROUGH MEDIA OUTREACH AND ACTION ALERTS.**

Thanks to these efforts, over the past few years WCS was largely able to keep its government funding priorities intact despite the continuing volatile economic climate.

Nevertheless, the risk of more belt-tightening remains in the wake of new budget challenges brought about by Hurricane Sandy. That reality has made new and expanded domestic and particularly European funding streams all the more necessary to continue our mission.

On the policy front, WCS continues to use its scientific expertise to inform decision makers at every level. We have worked in New York, Washington, and Brussels to protect endangered species such as sharks, jaguars and scarlet macaws, along with fragile landscapes like the National Petroleum Preserve-Alaska (NPR-A) that support critical habitat. WCS has been instrumental in engaging the U.S. State Department in stopping the illegal trade in wildlife. The common thread in every case is that decision makers now look to WCS as a leader on all facets of global conservation as our science impacts decisions that will have ripple effects for years to come.

## **GLOBAL CONSERVATION FUNDING**

In Fiscal Year 2012, we were able to restore U.S. Agency for International Development (USAID) funding for several WCS priority federal programs, including the Congo Basin Forest Partnership, the Andean Amazon, the Maya Biosphere Reserve, PREDICT, and Illegal Logging Enforcement. The report that accompanied

the appropriations bill supported funding for wildlife programs in South Sudan and the Russian Far East, as well as great apes conservation in Africa and Indonesia.

The president's Fiscal Year 2013 Budget, released in February, provided relatively level funding for our priority USAID programs but did not itemize that funding and failed to meet U.S. government commitments to the Global Environment Facility (GEF). After the House committee further reduced the U.S. contribution to GEF in May, the Senate committee voted to restore USAID Biodiversity funding and GEF funding to Fiscal Year 2012 levels. In September, President Obama signed into law a continuing resolution extending Fiscal Year 2012 funding levels through March 27, 2013, before which Congress will make decisions about how to spread the necessary cuts in spending. This year, WCS sent three online alerts advocating for funding for these important programs, generating more than 145,000 letters to Congress.

The U.S. Fish and Wildlife Services (USFWS) Multinational Species Conservation Funds (Species Funds) program consists of five individual funds that support tigers, rhinos, Asian elephants, African elephants, great apes, and marine turtles. For Fiscal Year 2012, the Species Funds experienced a minor reduction in funding to \$9.5 million, but fared well compared to the severe cuts experienced by domestic environmental programs. The Funds received a much-needed boost from sales of the new U.S. Save Vanishing Species semi-postal stamp, which raised an additional



[ ABOVE ] New York City Mayor Michael Bloomberg announces the city's significant financial support for the New York Aquarium's *Ocean Wonders: Sharks!* exhibit. Also pictured: WCS Trustee Barbara Zucker and husband Don, WCS president and CEO Cristián Samper, City Council Finance Chair Domenic Recchia, Brooklyn Borough President Marty Markowitz, WCS Executive Vice President for Public Affairs John Calvelli, and WCS Vice President and New York Aquarium Director Jon Forrest Dohlin.

\$1.58 million as of September, bringing the total to more than \$11 million.

In February, the president's FY 2013 Budget called for another modest cut to the Species Funds. In response, WCS assumed joint leadership with the World Wildlife Fund of a coalition of wildlife groups, veterinarians, zoos, aquariums, circuses, and sportsmen's groups to mobilize grassroots and influential supporters around the country in support of the Species Funds. In March, WCS staff testified before the House Appropriations Subcommittee on the Interior in support of the Species Funds and other Department of the Interior wildlife programs. Despite our efforts, the House commit-

tee recommended cutting FY 2013 funding for the Species Funds by more than 50 percent. The Senate Report included FY 2012 enacted levels to provide guidance to USFWS operating under the Continuing Resolution through March 2013.

This year, WCS continued to build on last year's establishment of its European Policy Office (EPO), which aims to raise WCS's profile within the European Union, advance WCS's policy objectives, and access European bilateral aid. The EPO's strategic location in Brussels has enabled WCS to deepen relations with bilateral partners in Germany and elsewhere in Europe. While European funding has remained difficult to access, WCS successfully obtained funding

## U.S. FEDERAL GOVERNMENT SUPPORT

In FY 2012, USAID supported conservation activities in central Africa (Central Africa Regional Program for the Environment) and the upper reaches of the Andean Amazon (Initiative for Conservation in the Andean Amazon), as well as South Sudan, Afghanistan, Ecuador, Tanzania, Zambia, Rwanda, Paraguay, Russia, Bolivia, and Guatemala.

At the global scale, USAID continued its support for the WCS-led SCAPES (Sustainable Conservation Approaches in Priority Ecosystems) and TransLinks programs, and the PREDICT program in partnership with the University of California, Davis.

Under a Global Development Alliance with USAID, General Mills, Cargill, and the Royal Norwegian Embassy, WCS is providing technical support to COMACO Ltd., a non-profit company in Zambia founded by WCS's Dale Lewis, to help it become a viable stand-alone company delivering food security and conservation in Zambia's Eastern Province.

The USFWS provides significant core support to the WCS species conservation and capacity building programs throughout Africa, Asia, the Americas, and the oceans between.

WCS is grateful for this support and for the U.S. Government's commitment to saving the earth's great wildlife and wild places.



from the European Program for Biodiversity in European Overseas Territories.

## ZOOS & AQUARIUM FUNDING

On the New York City and New York State fronts, there were significant budget gaps to close as in years past, but with slow improvement in economic conditions the situation began to appear less dire. While WCS initially faced a severe 58 percent cut in New York City Fiscal Year 2013 funding for the Bronx Zoo and New York Aquarium, we were able to rescue the majority of operating support, even securing more than \$45 million in new capital support for the New York Aquarium's *Ocean Wonders: Sharks!* exhibit and Bronx Zoo projects. For the first time in several years, WCS and peer cultural institutions urged the Mayor and City Council to increase funding above Fiscal Year 2012 adopted budget levels.

In May, WCS once again deployed a grassroots advocacy campaign including online action alerts, media outreach, petition signature collection at all five parks, and a viral video release of pygmy marmosets using an iPad to tell the city to restore our funding. These tactics generated more than 44,000 letters and petition signatures in less than a month and WCS was able to restore most of its City support, with a 6.5 percent reduction.

In addition to these efforts, WCS continues to build momentum for One Percent for Culture, a public campaign to increase future city operating support for cultural organizations. One Percent for Culture has recruited 270 coalition partners in all five boroughs and 43 city council districts and is beginning to gather support from 2013 candidates for city offices.

WCS was able to maintain level State support for the Environmental Protection Fund (EPF) at \$134 million, including \$9 million for the Zoos, Botanical Gardens & Aquariums Program (ZBGA) and \$4.73 million for the Oceans and Great Lakes Initiative. We currently receive approximately \$3 million annually in ZBGA grant support for the care of our Bronx Zoo and New York Aquarium collections. While this is good news, the EPF (New York State's primary fund for clean water, clean air, open space, and parks) budget declined in previous administrations by 47 percent from a historic high of \$255 million. With help from supporters, the dialogue in Albany is shifting from maintaining EPF support at current levels to growing the Fund in the future.

## COALITIONS, CAUCUSES & COMMUNITY

If strong relationship cultivation with policymakers is a key ingredient to WCS's legislative success, so too are community partnerships. From local conservation and cultural groups to

## CITY AND STATE SUPPORT

WCS is grateful to the City of New York, which provides operating and capital funds through the Department of Cultural Affairs and the Department of Parks and Recreation. We thank Mayor Michael R. Bloomberg; New York City Council Speaker Christine C. Quinn; Brooklyn Borough President Marty Markowitz; City Council Member and Council Finance Chair Domenic M. Recchia, Jr.; and the Bronx and Brooklyn New York City Council delegations. The City of New York is vital to the public/private partnership through which WCS serves the people of New York.

WCS would like to thank Governor Andrew M. Cuomo and the New York State Legislature for operating funds for the Zoos, Botanical Gardens and Aquariums program, administered by the New York State Office of Parks, Recreation and Historic Preservation. This program provides crucial operating support to more than 80 living museums across the state through the Environmental Protection Fund.

area neighborhoods, WCS works on all fronts to create, strengthen, and lead alliances that further our interests locally and globally.

On a national level, WCS helps optimize its impact and drive the U.S. global conservation policy and funding agenda through its leadership of various coalitions, including the International Conservation Caucus Foundation Advisory Council, the International Conservation Partnership, the Alliance for Global Conservation, and the Multinational Species Conservation Fund Coalition. On the city and state levels, WCS leads the One Percent for Culture coalition and guides and strategizes for the Cultural Institutions Group, Citizens for New York's Environment, the Coalition of Living Museums, and the Oceans and Great Lakes Coalition.

In New York, WCS has built strong local partnerships. Our local efforts include serving on boards of local chambers, hosting events for veterans and seniors, toy drives, and citizenship ceremonies. WCS also provides career days, mentoring opportunities, and free WCS park visits to underserved youth through the Urban

Assembly School for Wildlife Conservation and Rachel Carson High School for Coastal Studies, Big Brothers/Big Sisters, and our Community Access Program (CAP). Our local efforts have gained the respect of community leaders, created a political support system and raised WCS's profile among Bronx and Brooklyn officials. Last spring, more than 110 community organizations sent letters to City Hall urging full restoration of City operating support to the Bronx Zoo and New York Aquarium.

## DRIVING THE ISSUES

Over the past decade, WCS has increasingly engaged in the policymaking arena to further its mission. Through our wealth of science and expertise on biodiversity, wildlife health, animal husbandry, and science education issues, WCS has become a respected authority among policymakers.

In Washington, we have been working to protect ecologically important areas of NPR-A from drilling and to renew the Multinational Species Funds Semipostal Stamp Act of 2010. More recently, WCS has been working with the U.S. Department of State and other NGOs to raise awareness about wildlife trafficking. In Congress, partisan gridlock has paralyzed even the most benign federal legislation, prompting WCS to reach across both sides of the aisle to advocate for bipartisan causes such as the Vote Bison campaign to designate the American bison as the National Mammal.

In Brussels, WCS has received accreditation from key European institutions to provide formal input into the policymaking process and has started to establish important policy linkages with the European Commission and Parliament.

As a result, WCS is now regularly invited by the European Commission to give its views on all major issues relating to conservation. In November, WCS met with the European Commission and contributed its views on CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). Most recently, the European Commission development department invited WCS to contribute to a new strategy for protected areas in Central Africa. WCS has also been reaching out to European Parliamentarians on several issues, including a call for total cessation of shark finning in the EU, which the European Parliament endorsed in its latest report.

Beyond the United States and Europe, WCS continues to advance its priorities among a select group of bilateral and multilateral entities and recently received significant foundation support for a major campaign to list several shark species at the next CITES meeting. Responding to the crisis of elephant poaching in Africa, WCS co-sponsored a major motion at the International Union for the Conservation of Nature (IUCN) World Conservation Congress in September in Jeju, South Korea. The motion calls on all African elephant range states to prioritize the protection and conservation of elephant populations, ensuring that appropriate laws are implemented to achieve this goal, and that incentives are in place to encourage local communities to support conservation.

## Vote Bison

This year WCS helped lead a new effort to conserve and protect the American bison, a species that has been tied to WCS since President Theodore Roosevelt worked with Bronx Zoo founding director William Hornaday to establish the American Bison Society in 1905.

WCS, the National Bison Association, and the InterTribal Buffalo Council are leading Vote Bison, a growing national coalition of 35 organizations and businesses from 16 states with the goal of designating the bison as the National Mammal of the United States. The campaign showcases the American bison's role in our national heritage and emphasizes its economic, cultural and historical significance. Toward that end, U.S. Sens. Mike Enzi (R-WY) and Tim Johnson (D-SD) introduced The National Bison Legacy Act on May 24. The bill attracted bipartisan support from 18 senators.

The day after the legislation was introduced, the Associated Press published a story on The National Bison Legacy Act that was picked up by hundreds of outlets nationwide. *The New York Times* very favorably supported the bill on its editorial page. Additionally, the following outlets covered the campaign launch: *Los Angeles Times*; MSNBC; American Public



[ RIGHT ] WCS Washington Office Director Kelly Keenan Aylward joins U.S. Rep. José Serrano as he is recognized for supporting restoration of the Bronx River.



Radio's *Marketplace*; E&E News; KIAH-TV in Houston, TX; KGWN-TV in Cheyenne, WY; Ag Information Network; and *The Hill*.

WCS expanded the campaign's reach through a series of prominently placed op-eds by WCS Executive Vice President for Public Affairs John Calvelli at National Geographic's *Newswatch* website; WCS Senior Conservationist and Bison Coordinator Keith Aune in the *Houston Chronicle*; and Theodore Roosevelt V in *USA Today*. On July 12, *The New York Times* highlighted the National Bison Campaign in an article about the birth of a white bison in Connecticut, and the story was picked up by media outlets around the country.

On August 2, The National Bison Legacy Act was introduced in the U.S. House by Reps. Lacy Clay (D-MO) and Jeff Fortenberry (R-NE), with 11 additional representatives as co-sponsors.

While the National Bison Legacy Act did not become law during this Congressional session, in a few short months WCS built a remarkable groundswell of bipartisan legislative support for the effort. With this strong backing, hopes are

high that the National Bison Legacy Act will be passed into law during the next Congress.

### Protecting Alaska's Wilderness

WCS has had an interest in conserving the fragile ecosystems of the Arctic since George Schaller's groundbreaking 1950s expedition with Olaus and Margaret Murie that led to the creation of the Alaska National Wildlife Refuge. Sixty years later, WCS is still involved in conserving this unique landscape, through both on-the-ground field work and policy advocacy. For several years, WCS has been engaged in protecting key areas of the National Petroleum Reserve-Alaska (NPR-A).

WCS Species Program Bird Coordinator Dr. Steve Zack and the WCS North America Program team have identified the extraordinary biodiversity value of Teshekpuk Lake, the Colville River Special Areas, and Dease Inlet-Admiralty Bay. That work led WCS to recommend that these areas remain off-limits to drilling in comments provided to the Bureau of Land Management (BLM) related to NPR-A lease sales over the past few years.

[ ABOVE ] 2012 marked the launch of a WCS-led campaign to designate the American bison as our National Mammal.

In April, the BLM released its draft environmental impact statement (EIS) and Integrated Activity Plan (IAP) for the entire NPR-A. WCS responded in support of a balanced management regime that adequately protects the wildlife of the NPR-A while allowing for expanded oil and gas production. To amplify WCS's voice, we issued an online alert that spurred more than 40,000 WCS activists to contact BLM and express support for the balanced alternative.

To showcase WCS's scientific findings in the region and explain our recommendation of a balanced approach between conservation and responsible development, we held a Congressional briefing, featuring Dr. Zack and WCS North America Program conservationist Dr. Joe Liebezeit. WCS repeated this message in news stories placed in regional and environmental media, along with an op-ed piece authored by Dr. Zack. WCS submitted written comments to the BLM in June.

On August 13, the Secretary of the Interior, Ken Salazar, announced the basic elements to be reflected in the final plan. Based on information available at that time, the BLM's plan represented a good balance between wildlife conservation and energy development. On August 14, WCS released a statement from Dr. Cristián Samper, WCS President and CEO, applauding Secretary Salazar's announcement and expressing tentative support. Since then, BLM released the final plan in December. WCS applauded its continued balance between conservation and development needs.

### Protecting Sharks Locally and Globally

Millions of sharks are killed around the globe each year through a practice known as shark

finning, whereby the sharks' fins are removed and their carcasses discarded. The high demand for fins for use in shark fin soup, an Asian delicacy, is driving declines in shark populations worldwide. Despite this threat, the Convention on International Trade in Endangered Species (CITES), the 175-member treaty that regulates international trade of animal and plant species, currently protects a mere handful of sharks and rays.

Oceans 5 donor coalition recently awarded WCS a significant grant to run a global campaign to list several species of sharks and rays for protection under CITES. In September, WCS and a coalition of 35 partners raised awareness of the threat to sharks and rays at the 2012 IUCN World Conservation Congress in Jeju, South Korea. The coalition called for measures to improve fisheries management and conserve sharks and rays, and worked to bolster government and NGO support for increased shark and ray listings at the March 2013 CITES Conference of Parties.

In New York State, WCS is using the shark expertise of its New York Seascape program director Dr. Merry Camhi to inform a legislative campaign to ban the sale, trade and possession of shark fins within the state. Although shark finning is already illegal in federal waters and most state waters (including New York's), the continued legal trade of fins helps to drive shark mortality locally and globally. Efforts to enact a ban come on the heels of similar laws in Hawaii, California, Washington and Oregon. WCS is poised to work with legislative supporters to pass strong legislation next year that will serve as a model for other states and build momentum for a future federal trade ban on shark fins.

### Wildlife Trafficking

WCS has long contended that wildlife poaching and the illegal harvesting of timber are the work of organized crime syndicates, which use the proceeds of these activities to finance the drug trade, terrorism and other illicit actions. WCS and other global conservation organizations have been working to educate and inform the U.S. State Department about the link between wildlife trafficking and national security. Those efforts led Secretary of State Hillary Rodham Clinton to declare that the transnational illegal trade in wildlife and timber products should be considered a national security issue. The State Department followed through with a declaration of December 4, 2012 as Wildlife Conservation Day, during which thousands of people around the world pledged to protect and respect wildlife by not purchasing products made from endangered species and sharing the wildlife pledge with their networks. WCS participated in events at different U.S.

[ BELOW ] WCS staff and supporters at the ribbon-cutting for our new Animal Ambassador and quarantine buildings at the Bronx Zoo's C.V. Starr Science Campus.

[ RIGHT ] In November, WCS President and CEO Cristián Samper (back row, left) joined Secretary of State Hillary Rodham Clinton to highlight the growing illegal trade in wildlife.



embassies around the world, laying a strong foundation for WCS policy positions at CITES in 2013.

As WCS works to advance our current policy goals, we are keeping an eye to the future. As WCS's New York Seascape program grows, so will our engagement in the U.S. marine policy arena. As the United States steps up pressure and key Asian leaders commit to crack down on illegal wildlife trafficking, WCS sees an opportunity to build a public policy campaign to stop wildlife crimes across many fronts. As U.S.-Burma relations open further, we will be advocating for a strong focus on conservation. Finally, as our influence grows in Europe, we hope to bridge U.S. and European interests to further our conservation priorities. We look forward to addressing these conservation policy challenges and opportunities in the year to come.



## SUPPORTING GOVERNMENTS

### NEW YORK CITY AGENCIES

New York City Department of Cultural Affairs  
New York City Department of Design and Construction  
New York City Department of Education  
New York City Department of Parks and Recreation  
New York City Economic Development Corporation

### U.S. STATE AGENCIES

Alaska Department of Fish & Game  
California Department of Fish and Game  
Idaho Department of Fish & Game  
Idaho Department of Transportation  
Montana Fish, Wildlife & Parks  
New York State Department of Environmental Conservation  
New York State Department of Transportation  
New York State Dormitory Authority  
New York State Energy Research and Development Authority (NYSERDA)  
New York State Office of Parks, Recreation and Historic Preservation  
Northeast States Research Cooperative

### U.S. FEDERAL AGENCIES

Agency for International Development  
Bureau of Land Management  
Centers for Disease Control & Prevention  
Department of Agriculture  
Department of Defense  
Department of Education  
Department of Energy  
Department of the Interior

Department of State  
Department of Transportation  
Forest Service  
Fish & Wildlife Service  
Geological Survey  
Institute of Museum and Library Services  
National Aeronautics & Space Administration  
National Institutes of Health  
National Oceanic and Atmospheric Administration  
National Park Service  
National Science Foundation  
Postal Service

### OTHER NATIONAL GOVERNMENT AGENCIES

Agence Francaise de Développement (AFD), France  
AusAID, Australia  
Australian Antarctic Division, Department of Sustainability, Environment, Water, Population and Communities  
Danish International Development Agency (DANIDA)  
Department for International Development (DFID), United Kingdom  
Fonds Français pour l'Environnement Mondial (FFEM)  
German Development Bank (KfW Entwicklungsbank)  
German Federal Ministry for Economic Cooperation and Development (BMZ)  
Japan Ministry of Foreign Affairs  
Japan International Cooperation Agency (JICA)  
Ministry for Foreign Affairs of Finland

Ministry of Environment, Nature Conservation, and Tourism, Democratic Republic of Congo  
Ministry of Foreign Affairs, Norway  
Natural Environment Research Council (NERC), United Kingdom  
Singapore Economic Development Board  
Switzerland Aid Agency (SDC)

### INTERNATIONAL AGENCIES

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)  
Global Environmental Facility  
Great Lakes Fishery Commission, United States and Canada  
International Union for Conservation of Nature  
International Whaling Commission  
Ministry of Tourism, Republic of Mozambique  
Natural Environment Research Council (NERC), United Kingdom  
Norwegian Agency for Development Cooperation (NORAD)  
Singapore Economic Development Board  
The World Bank  
United Nations Children's Fund  
United Nations Convention on Biological Diversity  
United Nations Development Program  
United Nations Educational, Scientific & Cultural Organization  
United Nations Environment Program  
Western Indian Ocean Marine Science Association

# QA

KATHLEEN LAMATTINA



For close to two decades, Kathleen LaMattina has been helping teach students and other guests to the Bronx Zoo about conservation and wildlife through up-close encounters with the zoo's program animal collection. As she describes here, these animals are a wonderful teaching tool and bring out children's innate fondness for nature. And, if they are a certain wallaby, they might even make for a good golf cart companion.

**WHAT IS YOUR ASSIGNMENT WITH WCS?**  
Collections Manager, Program Animals

**HOW LONG HAVE YOU BEEN WITH WCS?**  
It will be 20 years on Valentine's Day!

**WHAT DREW YOU TO ZOOLOGICAL OR CONSERVATION WORK IN THE FIRST PLACE?**  
I always loved nature and being around animals. I also loved teaching. I taught math and science in Brooklyn before coming to the zoo. The job I have now combines the two things I am most passionate about. I really am very lucky.

**WERE YOU INTERESTED IN ANIMALS AS A YOUNG PERSON?**  
Absolutely. I was always way more comfortable around the furred, feathered, and scaled than with members of my own species. My dad would take me to the duck pond so I could watch and feed the ducks. I would catch and release frogs and salamanders during summer break and bring home injured birds, stray animals – it drove my mom crazy!

**WHAT ARE THE BIGGEST CHALLENGES YOU FACE IN YOUR WORK?**  
Some animals, such as various reptile species, spiders and others, are maligned and don't enjoy good reputations with people. It's both a challenge and an opportunity to successfully break down these stereotypes and help people understand that all animals are important, have their place in nature, and deserve protection.

**WHAT ARE PROGRAM ANIMALS?**  
They are animals that serve as our "animal ambassadors." They help inspire and educate people about wildlife, wild places, and conservation.

**HOW DO THESE ANIMALS HELP IN OUR EDUCATION WORK?**  
The one-on-one, up-close, and personal interaction we can provide with our program animals is an incredibly effective teaching tool and allows us to engage with our audience in a really unique and dynamic way. It is an experience that will always be remembered and inspires people to learn more about our conservation mission.

**HOW WILL OUR NEW ANIMAL AMBASSADOR CENTER HELP US TO EXPAND OUR PROGRAM?**  
It is a beautiful new facility designed to provide for the individual species needs of a really diverse collection. It will house mammals, birds, reptiles, amphibians, fish, and invertebrates. The design and space allocations will allow us to incorporate larger and even more charismatic species into our program.

**ARE THERE CERTAIN ANIMALS THAT STAND OUT MOST IN YOUR TIME AT WCS?**  
Each one of them is amazing in their own way and I've loved them all! Nachman, a beautiful little wallaby we raised after he was rejected by his mom, was probably our most famous animal ambassador. He was a very special little guy who had a rough start in life. He was tossed out of his mom's pouch during a thunderstorm. Nachman was less than a pound when we rescued him and he was battling a bad infection. This little joey overcame many obstacles to develop into a happy, healthy wallaby. He was an invaluable member of our collection and helped educate and inspire people of all ages. We often would ride through the zoo together in my golf cart and meet and greet zoo visitors – an unexpected surprise for so many. Nachman was truly one of a kind.

Kevin is our young emu. She was hatched two days after I first saw the movie "Up," which has a tropical bird whose gender is originally mistaken. Just like in the film, our Kevin was thought to be a male, but a part of me always suspected she



**Children believe they can save the world. It's our job to give them the information, tools, and experiences to help them try.**

was female. You can't tell from physical inspection with a newly hatched chick, but a DNA test later confirmed it. She's quite a hit with our course participants and zoo visitors. She hatched on May 19, 2011 at the Central Park Zoo. Today she weighs over 100 pounds, is as sweet as can be, and is quite the crowd pleaser. Having a full-grown emu walk into a classroom is a rare and amazing sight! Kevin is an invaluable resource when discussing all things aves (birds). She is a very unique emu and it's astonishing how bonded she is to her keepers and people in general.

**WHAT ARE STUDENTS MOST SURPRISED TO DISCOVER ABOUT THE WILDLIFE THEY ENCOUNTER?**

I think people are most surprised when seeing the unique relationship that exists between the animal and the educator or keeper. Besides learning about the natural history of the animal, course participants are also very interested in the individual animal's history: its background, its likes and dislikes. Details like these make the experience very personal and many of our visitors see animals as sentient beings for the first time in their lives.

**DO ANIMAL ENCOUNTERS LEAVE A LASTING IMPRESSION ON STUDENTS?**

Yes, a huge one! Children especially have such an innate fondness for nature. It is so empowering to help build upon that and make them feel that they can protect the animals that they have come to learn and care so much about.

**WHAT NEW IDEAS, FEELINGS, OR PERSPECTIVES DO YOU HOPE STUDENTS GAIN AFTER VISITING THE ZOO?**

Caring, interest, wonder, and empathy. So many adults have developed a feeling of helplessness – a “well, there's not much I can do” attitude. It's sad. Children really believe they can save the world. It's our job to give them the information, tools, and experiences to help them try.

**WHAT DO ANIMALS TEACH US?**

They can teach us so much – we just need to observe. Care, compassion, trust. Animals don't judge.

**COULD YOU DESCRIBE THE MOST MEMORABLE EVENT FROM 2012?**

I may be a little biased on this one. The opening of the new Animal Ambassador Center is definitely at the top of my list. It was a great day when we moved these guys into their new digs!

**WHAT MAKES YOU PASSIONATE ABOUT YOUR JOB?**

Every morning I am greeted by an incredibly diverse and amazing group of animals and the equally eclectic staff that helps care for them. It's never boring. It's a great feeling to know that while working with these animals, we are enriching their lives along with the experiences of students and guests.

**WHAT IS YOUR GREATEST WILDLIFE MOMENT DURING YOUR TIME WITH WCS?**

There are so many. My favorite times are when we receive animals from other zoos or rehab facilities. Sometimes these animals were deemed “unworkable,” aggressive, or just not appropriate for a teaching program. I hate labels. It's a wonderful feeling when, after spending time with these animals, they begin to trust you. It's an amazing experience each time you can form a bond with an animal. Often, these guys – like our Indian crested porcupine, our two-toed sloth, and our pied crow – become favorites with our staff and in our programs.

**WHAT IS YOUR PROUDEST ACHIEVEMENT?**

Being part of this team and able to represent the Wildlife Conservation Society. I am very proud to be part of an organization that does so much to save wildlife locally and around the globe.



[ OPPOSITE ] Bronx Zoo Collections Manager Kathleen LaMattina with Stickers the porcupine.

[ ABOVE ] The Bronx Zoo's Program Animal collection helps visiting students develop both empathy and wonder for animals.

# QA

JANET GIBSON



As a child, WCS Belize Country Director Janet Gibson developed an early passion for the sea on fishing excursions with her grandmother. Here, she discusses the connection between fisheries management and sustainable livelihoods, the stunning biodiversity of the Western Hemisphere's largest barrier reef, and how an early encounter with a Hawksbill turtle took her to the Gallows.

#### WHAT IS YOUR ASSIGNMENT WITH WCS?

I am the Country Director for Belize and I've been with WCS for just over 10 years. I also worked for WCS from 1985 to 1992 in marine protected area and coastal zone planning.

#### WHEN DID YOU KNOW YOU WANTED TO DEDICATE YOUR LIFE TO MARINE CONSERVATION?

Belize is my home. I was born here and from an early age I had a fierce pride in our barrier reef. I grew up living by the sea and spent my summer holidays swimming, snorkeling, and playing around in boats. My grandmother was an avid fisherwoman, but on our fishing trips I recall being quite squeamish when seeing fish dangling from the hook, and would secretly throw a few back into the sea. When I went to Kings College in London, I took as many marine courses as possible. After my graduate studies at the University of Newcastle, I returned to Belize in 1976 and went to work at the Fisheries Department, hoping to preserve our precious barrier reef.

#### CAN YOU BRIEFLY DESCRIBE YOUR WORK IN BELIZE?

WCS operates the Glover's Reef Research Station, which provides a critical platform for coral reef research. Our conservation strategy for Glover's Reef employs a threats-based approach. Overfishing was identified as one of the main threats to the atoll's biodiversity, due primarily to increasing numbers of fishers. We are currently piloting a management approach at the Reserve that represents a major paradigm shift—moving from an open-access fisheries situation to one of limited entry. First, we worked to ensure that only traditional fishers received fishing licenses. This year we are attempting to set a sustainable level of lobster catch for the reserve. It is an exciting development and I feel privileged to be a part of it.

#### HOW DID YOU FIRST CONNECT WITH THE WCS BELIZE PROGRAM?

The WCS marine program was started in the early 1980s by Archie "Chuck" Carr III. He'd flown over the Belize barrier reef as a boy when traveling with his father to the green turtle nesting beaches of Tortuguero in Costa Rica. He recruited Jacque Carter, who carried out the early work on the Nassau grouper in Belize. Chuck then approached me to join WCS and develop the management plan for Ambergris Caye, a proposed marine reserve near San Pedro. I enthusiastically agreed, and so began my long relationship with WCS.

#### WHY IS BELIZE'S REEF SYSTEM IMPORTANT TO CONSERVATION?

The Belize barrier reef system is unique for its size and array of reef types within one relatively self-contained area. It is the longest barrier reef system in the Western Hemisphere and a center of marine biodiversity in the Atlantic. Seven of its marine protected areas were declared a World Heritage Site in 1996. It encompasses a 220 kilometer-long barrier reef, three offshore atolls, numerous patch reefs, complex mazes of faro reefs, fringing reefs, and large offshore mangrove cays. It is also home to several endemic, threatened, and endangered species. Belize relies on this biodiversity, with a large part of the nation's economy dependent on the reef through fisheries and tourism.





**Belize depends on its marine biodiversity, with a large part of the nation's economy dependent on the reef through fisheries and tourism.**

**WHAT CHALLENGES HAVE YOU SEEN THE REEF SYSTEM FACE?**

Over the years, the coral cover has declined and there is increasing algal growth on the reefs. Much of this decline is caused by coral bleaching and storm damage. In the early 1980s, key species suffered major die-offs due to disease, significantly impacting our reefs. Fish life has also declined as the fishing industry has increased. Despite these challenges, the health of the reef would be far worse if Belize had not established its network of marine protected areas back in the 1980s and 1990s.

**WHAT ARE THE GREATEST THREATS TO CORALS TODAY?**

Climate change, overfishing, marine pollution, and habitat destruction are the main threats. Negative impacts arising from climate change are basically out of our control, but if we manage our activities sensibly, we can build resilience within the system to cope with these threats.

**HOW HAS FISHERIES MANAGEMENT EVOLVED OVER THE YEARS?**

It has evolved from a species-based approach, with restrictions such as closed seasons and size limits, to an ecosystem-based strategy, which designates marine-protected areas. Presently, the shift is towards encouraging fishers to care for their resources. The idea is to create an incentive – improved catches – for good stewardship. At the same time, if managers restrict the numbers of fishers, they have a responsibility to help transition those who are displaced to other forms of livelihood.

**HAVE LOCAL FISHERS IN BELIZE BEEN RECEPTIVE TO CONSERVATION ACTIONS?**

In the past, fishers have resisted the establishment of marine reserves, but now many see the benefits to their livelihoods. Prior to the introduction of the limited entry program at Glover's Reef, we spent a couple of years building awareness, understanding and trust. From our preliminary surveys, support for the program is very strong. In fact, last fall a federation of fishers publicly congratulated the government on the designation of a new marine reserve.

**WHAT HAS BEEN YOUR GREATEST WILDLIFE MOMENT WITH WCS?**

When I was working with the Fisheries Department and we were visiting an area of the barrier reef morbidly known as Gallow's Point, I had my first underwater sighting of a hawksbill turtle. It was sort of sleeping under a ledge of elkhorn coral. I was completely enchanted by it and its image is still very clear in my mind. We later discovered that Glover's Reef is an important foraging ground for this highly endangered and ancient species and WCS now has a hawksbill turtle monitoring program there.

**WHAT IS YOUR PROUDEST ACHIEVEMENT?**

Setting up the Hol Chan Marine Reserve 25 years ago. It has served as a model for marine reserves in Belize and its success helped lead to the designation of many others. One last goal I hope to see realized is the revision of the Fisheries Act, which was passed in 1948. WCS has played a critical role in developing changes to this outdated legislation, and I remain optimistic that they will be enacted soon and pave the way for many progressive conservation actions in the future.



[ OPPOSITE ] WCS Belize Country Director Janet Gibson.

[ ABOVE ] WCS's Glover's Reef Marine Reserve supports an extraordinarily high biological diversity across 135 square miles.



Pallas cats like this one at the Prospect Park Zoo are native to the Central Asian steppe, from western Russia to the Tibetan plateau.

# WCS CONSERVATION PARTNERS

# 5

**WITH LEADERSHIP AND RESULTS DATING BACK TO 1895, WCS HAS EVOLVED INTO THE WORLD'S MOST COMPREHENSIVE WILDLIFE CONSERVATION ORGANIZATION. THE ADDITIVE STRENGTH DERIVED FROM OUR PARKS, OUR FIELD CONSERVATION WORK, AND OUR GLOBAL HEALTH NETWORK IS UNPARALLELED. YET WE COULD NEVER DO THIS WORK AND ACHIEVE THESE RESULTS WITHOUT THE COLLABORATION AND SUPPORT OF HUNDREDS OF PARTNERS. WITH OFFICES ACROSS THE GLOBE, WCS IS WELL POSITIONED TO ENGAGE WITH REPRESENTATIVES OF GOVERNMENT AND CIVIL SOCIETY WHOSE GOALS ALIGN WITH OUR SCIENCE-BASED CONSERVATION MISSION.**

Throughout our 117-year history, such collaborations have helped us achieve real results – from establishing the Alaska National Wildlife Refuge and some of Latin America's first reserves for penguins and marine mammals, to protecting nearly one-third of all tropical coral species threatened with extinction and supporting alternative livelihoods that supplant the incentive to poach elephants, gorillas, and lions in sub-Saharan Africa. While we cannot feature all of the organizations, institutions, and government bodies with whom we maintain a collaborative strategy, most of our partners are listed below. We remain grateful for the assistance from all those who share in our work to conserve our last wild places and the animals that live there for future generations.

Abantu Foundation  
Academy of Agricultural Sciences  
Aceh Barat Daya District Police  
Action for Wildlife Organisation  
Adirondack Association of Towns and Villages, and numerous local communities  
Adirondack Climate & Energy Action Planning  
Adirondack Common Ground Alliance  
Adirondack Community Trust  
Adirondack Council  
Adirondack Economic Development Corporation  
Adirondack Land Trust  
Adirondack Mountain Club  
Adirondack North Country Association  
Adirondack Park Agency  
Adirondack Park Invasive Plant Program  
Adirondack to Algonquin Conservation Association  
Administration Bureau of Anhui  
Chinese Alligator National Nature Reserve

Administration Bureau of Hunchun Amur Tiger National Nature Reserve  
Administration Bureau of Zhejiang Changxing Chinese Alligator National Nature Reserve  
Advanced Conservation Strategies  
Afghan Conservation Corps (ACC)  
Afghanistan Ministry of Agriculture, Irrigation and Livestock (MAIL)  
Afghanistan Ministry of Economy  
Afghanistan Ministry of Education  
Afghanistan Ministry of Information and Culture  
Afghanistan Ministry of Justice  
Afghanistan Ministry of Transport  
African Alliance for Development Action (AADA)  
African Conservation Fund  
African Development Bank (ADB)  
African Nature Organisation (ANO)  
African Parks Network  
African Union – Interafrican Bureau for Animal Resources (AU-IBAR)

African Wildlife Foundation  
AfriCapacity  
Aga Khan Development  
Aga Khan Rural Support Programme (AKRSP)  
Agence Congolaise de la Faune et des Aires Protégées (ACFAP)  
Agence Française de Développement (AFD)  
Agence National des Parcs Nationaux (ANPN)  
Agence pour la Recherche et la Valorisation Marines (ARVAM)  
Agriculture Department, Gilgit-Baltistan  
Ailan Awareness  
Ailan Foundation  
Akron Zoo  
Alaska Beluga Whale Committee  
Alaska Department of Fish and Game  
Alaska Eskimo Whaling Commission  
Alaska Marine Exchange  
Alaska Nanuuq Commission  
Alaska Wilderness League

Albert Einstein College of Medicine  
 Alberta Conservation Association  
 Alberta Wilderness Association  
 Alcaldía de Laguna de Perlas  
 Alcaldía de San Juan de Nicaragua  
 Alianza Gato Andino  
 All Russia Research Institute of Wildlife Management, Hunting, and Farming  
 All Russian Research Institute for Nature Protection  
 Amazon Conservation Association  
 American Association of Zoo Veterinarians  
 American Farmland Trust  
 American Fisheries Society  
 American International University  
 American Legion – Post 213  
 American Museum of Natural History (AMNH)  
 American Prairie Reserve  
 American Veterinary Medical Association  
 Amicale des Ressortissants de Dibwa (AREDI)  
 Amur Leopard and Tiger Alliance (ALTA)  
 Amur-Ussuri Center of Avian Biodiversity  
 Anchor Club – NYPD  
 Andra Coral Project  
 Andre Vellay  
 Angkor Centre for Biodiversity Conservation  
 Animal and Plant Health Inspection Service  
 Animal Friend Jogjakarta (AFJ)  
 Animal Sanctuary Trust Indonesia (ASTI)  
 Anti-smuggling Unit of the Vietnam Customs Department (Ministry of Finance)  
 Anyuak Recovery Trust (ART)  
 AP Instituto Nacional de Desarrollo Forestal y Gestion del Sistema de Areas Protegidas, Ministerio de Agricultura y Bosques (INDEFOR)  
 Apolobamba National Natural Area of Integrated Management  
 Aquatic Wildlife Conservation Office of Ministry of Agriculture of the PRC  
 ARC – Onderstepoort Veterinary Institute  
 ARC Centre of Excellence for Coral Reef Studies, James Cook University  
 ARC Centre of Excellence for Environmental Decisions, University of Queensland  
 Archie Carr Center for Sea Turtle Research (ACCSTR), University of Florida  
 Arctic Council  
 Arctic Institute of North America  
 Area de Conservación Regional Comunal Tamshiyacu Tahuayo  
 Arizona Game and Fish Department  
 Arizona Zoological Society/Phoenix Zoo  
 Agence pour la Recherche et la Valorisation Marines (ARVAM)  
 Asian Turtle Program  
 Asociación Accidental Comunitaria Paiche Takana II  
 Asociacion Balam  
 Asociacion Civil Armonia  
 Asociación De Canopy De Villa Alcira  
 Asociacion de Comunidades Forestales de Petén  
 Asociación de Mujeres Waorani del Ecuador  
 Asociación De Productores Agroecológicos Tumupasa  
 Asociación De Productores De Cacao Nativo Ecológico Del Municipio De Mapiri  
 Asociación De Productores De Cacao Nativo Ecológico Del Pueblo Leco De Larecaja  
 Asociación De Productores De Café Ecológico Regional Larecaja  
 Asociacion Faunagua  
 Asociación Forestal Integral  
 Asociación Forestal Integral San Andrés  
 Asociación Guyra Paraguay  
 Asociación para la Conservacion de la Cuenca Amazonica  
 Asociación para la Investigación y el Desarrollo Integral  
 Aspinal Foundation  
 Associação de Proprietários de Reservas Particulares do Patrimônio Natural de Mato Grosso do Sul  
 Association Belko'o de Deng Deng (ABDD)  
 Association Megaptera  
 Association of Campesinos Protectors of Bosawás ACAPROBO, Nicaragua  
 Association of Fish and Wildlife Agencies  
 Association of Traditional Marine Mammal Hunters, Chukotka (ChAZTO)  
 Association of Zoos & Aquariums (AZA)  
 Association Ondighi de Kessala  
 Association pour la Promotion de l'Elevage en Savane et au Sahel (APESS)  
 Association pour la protection des mammifères marins autour de Madagascar (CETAMADA)  
 Association Rwandaise des Ecologistes (ARECO)  
 Astella Development Corporation  
 Audubon  
 Audubon Alaska  
 Audubon New York  
 Australian Marine Mammal Commission  
 Aventures Sans Frontières  
 Aves Argentinas  
 AZA Tiger Species Survival Plan Tiger Conservation Campaign  
 Badan Pengelola Pesisir dan Laut Terpadu (BPPLT SULUT)  
 Bahamas National Trust  
 Balai Kawasan Konservasi Perairan Nasional, Kupang  
 Balai Taman Nasional Karimunjawa  
 Band-e-Amir Community Association (BACA)  
 Bangladesh Ministry of Environment and Forests  
 Bappeda Kabupaten Lombok Utara, Nusa Tenggara Barat  
 Bappeda Kota Sabang, Aceh  
 Barnard College, Columbia University, New York  
 Bat Conservation International  
 Bay Islands Conservation Association  
 Bay of Bengal Large Marine Ecosystem (BOBLME)  
 BC Hydro  
 Bear Trust International  
 Belize Audubon Society  
 Belize Coast Guard  
 Belize Fisheries Department  
 Belize Fisherman Federation  
 Belize Fishermen Cooperative Association  
 Belize Tourism Board  
 Belizean Agriculture Department  
 Belmont Business Improvement District  
 Beneath the Sea  
 Bengkulu Provincial Police  
 Berggorilla and Regenwald Direkthilfe  
 Bethany College  
 Better-U Foundation  
 Big Sky Community Corporation  
 Big Sky Natural Resource Council  
 Bighole Watershed Committee  
 Biodiversity Conservation Agency (Ministry of Natural Resources and Environment)  
 Biodiversity Research Institute  
 Biota  
 BirdLife International  
 BirdLife International (Colombia and Argentina)  
 Black Kettle Farm  
 Blackfeet Tribe  
 Blackfoot Challenge  
 BLM  
 Blood Tribe  
 Blue Ocean Institute  
 Blue Ventures  
 Bluefields Indian & Caribbean University  
 Bogani Nani Wartabone National Park Authority  
 Bolivian Network to Combat the Illegal Wildlife Trade (REBOCTAS)  
 Bolshe-Khekhtsirski State Zapovednik  
 Bonobo Conservation Initiative  
 Border Police of Badakhshan, Ministry of Interior  
 Born Free USA  
 Botchinski State Zapovednik  
 Botswana, Department of Wildlife and National Parks  
 Bramble Park Zoo  
 Brazil's TAMAR Sea Turtle Project  
 Breeze Radio  
 Bronx County Historical Society  
 Bronx Museum of the Arts  
 Bronx River Alliance  
 Bronx Zoo Chapter – American Association of Zookeepers  
 Brooklyn Academy of Music  
 Brooklyn Aquarium Society  
 Brooklyn Botanic Garden  
 Brooklyn Children's Museum  
 Brooklyn College  
 Brooklyn Cyclones  
 Brooklyn Museum  
 Brooklyn Public Library  
 Brooklyn V.A. Community Club House  
 Bua Provincial Office  
 Buffalo Wool Company  
 Bukit Barisan Selatan National Park Authority  
 Bunaken Marine National Park Authority  
 Burung Indonesia



Last spring the Bronx Zoo welcomed three black-necked swan cygnets.

Cakaudrove Provincial Office  
 California Department of Fish and Game  
 Cambodia Rural Development Team  
 Cambridge University (Protected areas CCI initiative)  
 Canadian Boreal Initiative  
 Canadian Parks and Wilderness Society  
 Canadian Wildlife Federation  
 Canopy  
 CARE International  
 Caritas  
 Carnegie Hall  
 Cary Institute of Ecosystem Studies  
 Center for Collaborative Conservation  
 Center for Elephant Conservation  
 Center for Large Landscape Conservation  
 Center for the Understanding of Nature (CEN), Nicaragua

Central Adirondack Partnership for the 21st Century  
 Central African Forests Commission (COMIFAC)  
 Central Cooperativa del Valle Sandia  
 Central de Pueblos Indigenas de La Paz  
 Central Indigena del Pueblo Leco de Apolo  
 Central Veterinary Diagnostic and Research Laboratory  
 Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD)  
 Centre de Recherche en Sciences Naturelles (CRSN)  
 Centre de Transfer de Technologies (CTTB)  
 Centre for Applied Social Sciences (CASS), Faculty of Social Sciences, University of Zimbabwe  
 Centre for Development

Orientated Research into Agricultural Systems  
 Centre for Spatial Environmental Research, University of Queensland  
 Centre for Wildlife Studies  
 Centre National de la Recherche Scientifique et Technologique (CENAREST)  
 Centre National de Recherche Oceanographiques (CNRO)  
 Centre National des Données et Informations Oceanographiques (CNDIO)  
 Centre National des Inventaires d'Aménagement Forestière (CNIAF)  
 Centro Ballena Azul, Chile  
 Centro Chaqueño para la Conservación e Investigación  
 Centro de Acción Legal Ambiental y Social de Guatemala  
 Centro de Estudios de Conservación

Centro de Estudios del Hombre Austral  
 Centro de Investigaciones de Ecosistemas Costeros  
 Centro de Investigaciones Marinas - Universidad de la Havana  
 Centro Oriental de Ecosistemas y Biodiversidad  
 Cheetah Conservation Fund (CCF)  
 Chester Zoo, UK  
 Chicago Field Museum  
 Chicago Zoological Society  
 Chimpanzee Sanctuary and Wildlife Conservation Trust (CSWCT)  
 China Environmental Protection Foundation  
 China Wildlife Conservation Association  
 Chittagong University  
 Chukot-TINRO  
 Cibola Farms (VA)  
 CIFOR

CITES Elephant Trade Information System (ETIS)  
 CITES/Monitoring the Illegal Killing of Elephants (MIKE) Program  
 Citizens Campaign for the Environment  
 City of Fort Collins  
 City University of New York (CUNY)  
 Clark's Fork Coalition  
 Cleveland Metroparks Zoo and the Cleveland Zoological Society  
 Clifton Fine Economic Development Corporation  
 Coastal Development Partnership  
 Coastal Zone Management Authority and Institute, Belize  
 Colombian Foundation for Studies on Parasites (FUNCEP)  
 Colorado Parks and Wildlife Department  
 Colorado State University  
 Columbia University, New York  
 Columbia University, Pediatric Gastroenterology, Hepatology, and Nutrition & Center for Infection and Immunity  
 Columbus Zoo & Aquarium  
 Comision Nacional de Areas Naturales Protegidas  
 Comité de Gestion des Ressources Naturelles de Conkouati  
 Committee for Environmental Protection under the Government of the Republic of Tajikistan  
 Communal Government of Kahkabila  
 Community Empowerment for Progress Organization (CEPO)  
 Community Mayors, Inc.  
 Competing Claims on Natural Resources Program  
 Comunidad Marka Copacabana De Antaquilla  
 Coney Island Beach Shop  
 Coney Island Brighton Beach Open Swimmers (CIBBOWS)  
 Coney Island Development Corporation  
 Coney Island History Project  
 Coney Island Polar Bear Club USA  
 Coney Island USA  
 Confederated Salish and Kootenai Tribes  
 Conseil pour la Defense des Droits des Communautés et la Protection de l'Environnement

Conseil pour la Defense Environnementale et pour la Legalite et la Tracabilite  
 Consejo Indigena del Pueblo Takana  
 Consejo Nacional de Areas Protegidas  
 Consejo Regional Autónomo del Atlántico Sur  
 Consejo Regional T'simane-Moseten  
 Conservation Farming Union  
 Conservation Fund  
 Conservation International  
 Conservation Strategy Fund  
 Conservation Through Public Health  
 Consorcio de Gobiernos Provinciales del Ecuador

Coopera  
 Cooperativa Carmelita  
 Cooperativa Payun Matru  
 Co-operative Department of Belize  
 Cooperazione e Sviluppo (Cooperation and Development) (CESVI)  
 Cornell Cooperative Extension  
 Cornell Lab of Ornithology  
 Cornell University College of Veterinary Medicine  
 Cornell University Press  
 Cornell University Sustainable Development Institute  
 Corporación Nacional Forestal  
 Council of Jewish Émigré Community Organizations  
 CPAWS-Wildlands League

Craighead Institute  
 Criminal Investigation Department, Indonesia  
 National Police  
 Critical Ecosystem Partnership Fund  
 Cronulla Fisheries Research Centre  
 Cross River State Forestry Commission  
 Crown of the Continent Conservation Initiative  
 Dakota Territory Buffalo Association  
 Dangriga Fisherman Association  
 Darwin Initiative, UK  
 David H. Koch Theater  
 David Suzuki Foundation  
 Defenders of Wildlife

WCS works with local fishermen in Madagascar to improve livelihood opportunities.



Defensores de la Naturaleza  
Delaware State University  
Demo's Wonder Wheel  
Denver Mountain Parks  
Denver Zoo  
Department for International Development (DFID), United Kingdom  
Department of Animal Health (Ministry of Agriculture and Rural Development)  
Department of Anthropology, Washington University  
Department of Civil & Environmental Engineering, Massachusetts Institute of Technology  
Department of Education, Badakhshan  
Department of Education, Bamyán  
Department of Environment and Conservation, PNG  
Department of Environment, Iran  
Department of Environment. Bangladesh  
Department of Environmental Science, Policy, and Management, University of California, Berkeley  
Department of Environmental Sciences, Emory University  
Department of Fisheries, Ministry of Livestock and Fisheries, Myanmar  
Department of Forests and Non-Renewable Natural Resources Zanzibar (DFNRNR)  
Department of Geography, Simon Fraser University  
Department of Manus Province  
Department of Ministry of Agriculture, Irrigation and Livestock, Badakhshan  
Department of Ministry of Agriculture, Irrigation and Livestock, Bamyán  
Department of Municipality of Wakhan, Badakhshan  
Department of Municipality of Yakawlang, Bamyán  
Department of National Environmental Protection Agency, Badakhshan  
Department of National Environmental Protection Agency, Bamyán  
Department of New Ireland  
Department of Pathology & Immunology Center for Genome Sciences & Systems Biology, Washington University School of Medicine  
Department of Public Health Badakhshan, Ministry of Public Health  
Department of Public Health Bamyán, Ministry of Public Health  
Department of the Environment, Iran  
Department of Town and Country Planning (DTCP), Malaysia  
Department of Veterinary and Livestock Development, Zambia  
Department of Veterinary Services, Botswana  
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)  
Development and Environmental Law Center (DELC)  
Dewan Pengelolaan Taman Nasional Bunaken  
Dialogo Florestal  
Diámer Poverty Alleviation Programme  
Dian Fossey Gorilla Foundation-International  
DINAP-Unidade de Epidemiológica Veterinária  
Dinas Kelautan dan Perikanan Kabupaten Aceh Besar  
Dinas Kelautan dan Perikanan Kabupaten Lombok Utara, Nusa Tenggara Barat  
Dinas Kelautan dan Perikanan Kota Sabang  
Dinas Kelautan dan Perikanan Provinsi Aceh  
Dirección Regional de la Producción de Loreto  
Direction for Biodiversity Conservation, System of Protected Areas (DCBSAP)  
Direction Générale des Pêches, Gabon  
Directorate General of Rural Community Empowerment, Ministry of Home Affairs, Indonesia  
Directorate of Biodiversity and Conservation, Ministry of Forestry, Indonesia  
Directorate of Forest Protection and Nature Conservation (PHKA), Ministry of Forestry  
Directorate of Investigation and Forest Protection, Ministry of Forestry, Indonesia  
Directorate of Veterinary Services, Namibia  
Directorate-General for Maritime Affairs and Fisheries, Gabon  
Direktorat Konservasi Kawasan dan Jenis Ikan, Ditjen KP3K, Kementerian Kelautan dan Perikanan Republik Indonesia  
Disabled American Veterans – Fort Hamilton Chapter 28  
District Administration, Astor  
District Administration, Diámer  
District Administration, Ghizer  
District Administration, Gilgit  
District Administration, Hunza-Nagar  
Ditjen Perlindungan Hutan dan Konservasi Alam, Kementerian Kehutanan Republik Indonesia  
Dogwood Alliance  
Dornod Province Environmental Protection Agency  
Ducks Unlimited Canada  
Duke-NUS Graduate Medical School Singapore  
Durham University (Mongolia Darwin and Tibet grants),  
Durrell Institute of Conservation and Ecology (DICE)  
Dynatec Company-Sherritt (BBOP)  
Earth Institute at Columbia University  
Earthjustice  
East African Community Department of Environment and Natural Resources (EAC)  
East African Wildlife Society  
Eastern Mongolia Protected Areas Administration  
Eastern Mongolian Community Conservation Association (EMCCA)  
EcoAdapt  
EcoAgriculture Partners  
EcoHealth Alliance  
Ecojustice  
Economic Development Board, Singapore  
Ecosystemes Forestiers d'Afrique Centrale - ECOFAC - EU  
Ecotrust  
Ecuadorian Ministry of the Environment  
Eijkman Institute for Molecular Biology  
Eijkman Institute, Jakarta, Indonesia  
El Museo del Barrio  
Elephant Care International – Asia-wide  
Elephant Conservation Network  
Elephant Livelihood Initiative Environment  
Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA)  
Empresa De Ecoturismo De San Miguel Del Bala  
Endangered Wildlife Trust  
Energy Smart Park Initiative  
Enterprise Works/VITAE  
Entreprise HOLCIM  
Environment and Rural Development Foundation (ERuDeF)  
Environment Canada  
Environment Department, Gilgit-Baltistan  
Environment Society of Oman: Whale and Dolphin Research Group  
Environmental Advocates of NY  
Environmental Conservation Trust (ECOTRUST)  
Environmental Crime Division, National Police, Mongolia  
Environmental Defense Fund  
Environmental Investigation Agency  
EnviroVet  
Escuela Agrícola Panamericana Zamorano  
Escuela Agrícola Panamericana Zamorano, Honduras  
Eskimo Walrus Commission  
Estación Costera de Investigaciones Marinas  
Estancia Flandes  
Estancia San Miguel  
Etablissement d'Enseignement Supérieur des Sciences Agronomiques, Université d'Antananarivo  
European Association of Zoos and Aquaria  
Ex-Prisoners of War – Key Chapter  
Faculty of Veterinary Science, University of Pretoria  
Fama Comunicación  
Fauna and Flora International (FFI)  
Fazenda Ecológica  
Federación Comunas Kichwas del Río Napo  
Federal Departments and Ministries in Malaysia  
Fédération des Associations du Parc National de la Lopé (FAPNL)

- FEGS Health and Human Services System
- FHI 360
- Fiji Department of Environment
- Fiji Department of Fisheries
- Fiji Department of Forestry
- Fiji Locally Managed Marine Area Network
- FISHBIO
- Fisheries Administration, Ministry of Agriculture, Forestry and Fisheries, Cambodia
- Fisheries Department, Gilgit-Baltistan
- Flint Hills Discovery Center (KS)
- Flora y Fauna
- Flora y Fauna, Cuba
- Flushing Town Hall
- Fond Français pour l'Environnement Mondial/ Comité Français de l'IUCN
- Fondation pour les Aires Protégées et Biodiversité de Madagascar
- Fondo de las Americas
- Fondo para la Acción Ambiental y la Niñez
- Fonds Française pour l'Environnement Mondial (FFEM), Congo
- Food and Agriculture Organization
- Food and Rural Development (FORUDEV)
- Fordham University
- Forest Department, Belize
- Forest Department, Gilgit-Baltistan
- Forest Department, Wildlife Circle
- Forest Resources and People (FOREP)
- Forestry Administration of Anhui Province
- Forestry Administration of Guangdong Province
- Forestry Administration of Heilongjiang Province
- Forestry Administration of Jilin
- Forestry Administration of Qinghai Province
- Forestry Administration of Tibet Autonomous Region
- Forestry Administration of Zhejiang Province
- Forestry Administration, Ministry of Agriculture, Forestry and Fisheries, Cambodia
- Forina (Indonesian Orangutan Forum)
- Fort Peck Tribe
- Foundation for Maya Cultural and Natural Patrimony
- Foundation for the Americas
- Foundation Tri-National de la Sanga (FTNS)
- Foundations of Success
- FPT Corporation
- Frankfurt Zoological Society (FZS)
- Free the Bears Fund, Inc.
- Freedom to Roam
- Friends for Conservation and Development
- Friends for Conservation and Development, Guatemala
- Friends of Masoala
- Friends of Nature and Environment (WATALA)
- Friends of the Earth
- Fundação Vitória Amazônica
- Fundació Aïnhuê
- Fundación Ambiente y Recursos Naturales
- Fundación Amigos Del Museo
- Fundación Aquamarina
- Fundación Banco de la República
- Fundación Cambio Democrático
- Fundación Chile
- Fundación Desde el Chaco
- Fundación Ecológica
- Fundación Ecológica, Guatemala
- Fundación La Salle de Ciencias Naturales
- Fundación La Salle de Ciencias Naturales, Venezuela
- Fundación Las Mellizas
- Fundación Loro Parque
- Fundación Moisés Bertoni
- Fundación Mundo Puro
- Fundación Para De Desarrollo Del Sistema Nacional De Areas Protegidas
- Fundación para la Autonomía y el Desarrollo de la Costa Atlántica de Nicaragua
- Fundación para la Conservación de los Recursos Naturales y Ambiente en Guatemala
- Fundación para la Conservación del Bosque Seco Chiquitano
- Fundación Patagonia Natural (FPN)
- Fundación Puma
- Fundación Senda Darwin
- Fundación Terram
- Fundación Vida Silvestre Argentina (FVSA)
- Fundamazonía
- Future West
- GalvMed
- Gargiulos
- Gestión y Uso Sostenible de la Diversidad Biológica de Loreto
- Gigi Lend Me a Hand Band
- Gilgit-Baltistan Environmental Protection Agency
- Gili Ecotrust
- Gilman International Conservation
- GiproRybFlot
- Glacier Two Medicine Alliance
- Global Environmental Facility (GEF)
- Global Ocean Biodiversity Initiative (GOBI)
- Global Viral
- Global Vision International (GVI)
- Global Wallace
- Gobierno Comunal Kriol
- Gobierno Regional de Cuzco
- Gobierno Regional de Loreto
- Gobierno Regional de Puno
- Gobierno Territorial Rama y Kriol
- Good Shepherd Services
- Gorilla Organization
- Goulougo Triangle Ape Project (GTAP)
- Grace Dodge Career & Technical High School
- Great Ape Survival Programme (GRASP)
- Greater Yellowstone Association
- Greater Yellowstone Coalition
- Green Action Environmental Association of Guangdong University of Technology
- Green Beagle Environment Institute
- Green Reef
- Greenpeace
- GRET-Professionals for Fair Development
- Guangdong The Best
- Guangdong Forest Public Security Bureau
- Guangdong Sub-Administration of China Customs
- Guangzhou Bureau of Parks and Forestry
- Guangzhou Office of the State Endangered Species Import and Export Management Office
- Gunung Gede Pangrango National Park Authority
- Gunung Halimun Salak National Park Authority
- Gunung Leuser National Park Authority
- Habitat Ecologique et Liberté des Primates (HELP), Congo
- Hanoi University of Agriculture
- HarimauKita - The Sumatran Tiger Conservation Forum
- Harvard Medical School
- Harvard School of Public Health
- Harvard University Center for the Environment
- Health Map
- Healthy Reefs Initiative
- Heart of Brooklyn
- Heilongjiang Forest Industry Bureau
- Henry's Fork Legacy Project
- Herbario Nacional De Bolivia
- Hifadhi ya Mazingira na Utalii Rungwe (HIMARU)
- Hive Digital Media Learning Fund in the New York Community Trust
- Hofstra University
- Hong Kong University
- Hopkins Fisherman Association
- Hornbill Research Foundation
- Houston Zoo (TX)
- Huai Kha Khaeng Foundation
- Human Nature Projects
- Humane Society International
- Humane Society of US
- Hunchun Border Army





Hunchun City Government  
 Hunchun Forest Public Security  
 Bureau  
 Hunchun Tianhe Amur Tiger  
 Conversation Association  
 Hunting the Rez (MT)  
 Ibonga  
 Ice Seal Committee  
 Idaho Department Fish and Game  
 Idaho Transportation Department  
 Independent University  
 Indianapolis Zoological Society, Inc.  
 Indígena del Pueblo Leco de Apolo  
 Indonesian Institute of Sciences  
 (LIPI)  
 Indonesian Veterinary Research  
 Center (Balitvet) Bogor  
 Inspection Tiger  
 Institut Congolais pour la  
 Conservation de la Nature (ICCN)  
 Institut Halieutique et des  
 Sciences Marines (IHSM)

Institute for Tropical Forest  
 Conservation  
 Institute of Applied Science,  
 University of the South Pacific  
 Institute of Biology and Soils, Far  
 Eastern Branch of the Russian  
 Academy of Sciences  
 Institute of Biology, Mongolian  
 Academy of Sciences  
 Institute of Geography, Far  
 Eastern Branch of the Russian  
 Academy of Sciences  
 Institute of Marine Biology  
 Institute of Natural Resources of  
 the University of Natal  
 Institute of Zoology, Academy of  
 Sciences  
 Instituto Balaei Jubarte/  
 Humpback Whale Institute,  
 Brazil  
 Instituto de Antropologia e  
 Historia

Instituto de Antropologia e  
 Historia, Guatemala  
 Instituto De Biología Molecular  
 Biotecnología De La Universidad  
 Mayor De San Andres  
 Instituto de Derecho y Economía  
 Ambiental  
 Instituto de Derecho y Economía  
 Ambiental, Paraguay  
 Instituto de Desenvolvimento  
 Sustentável Mamirauá  
 Instituto De Ecologia De La  
 Universidad Mayor De San  
 Andres  
 Instituto de Investigaciones  
 Agropecuarias, Chile  
 Instituto de la Patagonia  
 Instituto Nacional de Pesquisas  
 da Amazônia  
 Instituto Nacional de Salud, Peru  
 Instituto Piagaçu-Purus  
 Instituto Quinta do Sol

Instituto Socio-Ambiental, Brazil  
 InterAction  
 Interagency Grizzly Bear Study Team  
 Internal Conservation Caucus  
 Foundation  
 International Animal Rescue (IAR)  
 International Conservation and  
 Education Fund (INCEF)  
 International Elephant Foundation  
 International Forestry Resources  
 and Institutions (IFRI)  
 International Fund for Animal  
 Welfare (IFAW)  
 International Gorilla Conservation  
 Programme (IGCP)  
 International Livestock Research  
 Institute  
 International Polar Year (Canadian  
 Federal Government Program)  
 International Rual Poultry Centre  
 (IRPC)/KYEEMA Foundation  
 International Society for  
 Infectious Disease  
 International Union for  
 Conservation of Nature (IUCN)  
 International Whaling Commission  
 (IWC)  
 International YMCA  
 Intertribal Buffalo Council  
 Inuit Circumpolar Council (ICC)  
 Iranian Cheetah Society (ICS)  
 Iringa District Council  
 Island Conservation  
 Island Conservation Chile  
 Islands Foundation  
 iTaukei Affairs Board  
 iTaukei Land Trust Board  
 IUCN (Rio tinto NPI, CCI initiative)  
 IUCN Primate Specialist Group,  
 Great Apes Section  
 IUCN/SSC African Elephant  
 Specialist Group – Africa-wide  
 IUCN/SSC Asian Elephant  
 Specialist Group  
 IUCN/SSC Asian Wild Cattle  
 Specialist Group – Saola  
 Working Group in Laos and  
 Vietnam  
 IUCN/SSC Cat Specialist Group  
 IUCN/SSC Crocodile Specialist  
 Group  
 IUCN/SSC Iguana Specialist  
 Group  
 IUCN/SSC Shark Specialist Group  
 IUCN/SSC Tortoise and  
 Freshwater Turtle Specialist  
 Group  
 IUCN  
 Ixiamas Municipality  
 Izaak Walton League of America



In the summer of 2012, two snow leopards were for the first time captured, fitted with satellite collars, and released back into the wild – by a team of WCS conservationists and Afghan veterinarians.

Jack Creek Preserve Foundation	Lampung Provincial Police	Marine and Coastal Management,	Ministry of Agriculture and
Jackson Hole Conservation Alliance	Land of the Leopard National Park	Rogge Bay, South Africa	Forestry, Laos
Jackson Hole Wildlife Federation	Landscape Management and Development (LAMDEV)	Marine and Fisheries Office,	• Department of Forestry
Jacobi Medical Center	Land Tenure Center at the University of Wisconsin,	Minahasa Utara	• Department of Forest Inspection
Jagannath University	Landcare Research (NZ)	Marine Conservation Institute	• National Animal Health Center
JAGWOOD+, Nicaragua	LaSalle Adams Fund	Marine Ecology Group, University of Western Australia	Ministry of Climate Change, Pakistan
Jahangirnagar University	Lazovskii Zapovednik	Marine Mammal Commission	Ministry of Defense, Laos
Jakarta Animal Aid Network (JAAN)	Le Silo National des Graines Forestières (SNGF)	Marine Science Association of Myanmar (MSAM)	Ministry of Defense, Mozambique
Jakarta Provincial Police	Lehigh Valley Zoo (PA)	Max Planck Institute for Evolutionary Anthropology	Ministry of Education, Laos
Jamaica Center for Arts & Learning	Leuser International Foundation	Mcal. Antonio Jose de Sucre Institute of Technical Scientific Research of the Police University	Ministry of Environment & Forests, Government of India
James Cook University	LightHawk	Lincoln Center for the Performing Arts, Inc.	Ministry of Environment and Green Development, Mongolia
Jane Goodall Institute	Lincoln Institute of Land Policy	Lincoln Park Zoo	Ministry of Environment and Tourism, Namibia
Jaringan KuALA	Literacy Inc. (LINC)	Livestock and Dairy Development Department, Gilgit-Baltistan	Ministry of Environment, Bauchi State
Jilin Wildlife Conservation Association	Local Level Government in PNG	Lola Star Boutique	Ministry of Environment, Cambodia
Joseph Vance Architects	Lola Ya Bonobo, Amis des Bonobos au Congo (ABC)	Lukuru Wildlife Research Project International (CAI)	Ministry of Environment, Direction General Forests, Madagascar
Kabul Municipality	Lutheran Relief Service	Madagascar Ministry of Development and Landuse Planning	Ministry of Environment, Uganda
Kabul University	Madagascar Ministry of Development and Landuse Planning	Madagascar National Parks (MNP)	Ministry of Environment, Water and Forests, Madagascar
Kabul Zoo	Madagascar National Parks Association (PNM-ANGAP)	Madagascar National Parks	Ministry of Finance, Afghanistan
Kadoorie Farm & Botanic Garden	Madidi Natural Area of Integrated Management and National Park	Madison Valley Ranchlands Group	Ministry of Fisheries Development, Kenya
Kanopi Foundation	Maharashtra State Forest Department, Government of Maharashtra	Maharashtra State Forest Department, Government of Maharashtra	Ministry of Fisheries, Madagascar
Kansas Buffalo Association (KS)	Malaysia Nature Society	Malaysia Nature Society	Ministry of Foreign Affairs, Afghanistan
Karnataka State Forest Department, Government of Karnataka	Maliasili Initiatives	Management and Ecology of Malaysian Elephants (MEME)	Ministry of Foreign Affairs, Laos
Kasetsart University • Faculty of Forestry	Management and Ecology of Malaysian Elephants (MEME)	Manaus Center for Zoonosis Control (CCZ)	Ministry of Foreign Affairs, Madagascar
Kelompok Pencinta Laut	Mancomunidad De Municipios Del Norte Paceyño Tropical	Mancomunidad Municipal de la Amazonía de Puno	Ministry of Forestry and Wildlife (MINFOF), Botswana
Kélonia (The Observatory of Marine Turtles)	Mancomunidad Municipal de la Amazonía de Puno	Manga	Ministry of Forestry, Fisheries and Sustainable Development, Belize
Kenya Coast Development Authority	Manhattan College	Manomet Center for Conservation Science	Ministry of Higher Education, Afghanistan
Kenya Marine & Fisheries Research Institute (KMFRI)	Manomet Center for Conservation Science	Manta Marine Pvt Ltd	Ministry of Interior (Provincial & District Police), Mozambique
Kenya Sea Turtle Conservation Trust (KESCOM)	Manus Civil Society Forum	Manus Civil Society Forum	Ministry of Labour, Thailand
Kenya Wildlife Service (KWS)	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	Ministry of Natural Resources and Agriculture, Belize
Khabarovsk Fund for Wildlife	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	Ministry of Natural Resources and Environment, Laos
Khabarovskii Krai Society of Hunters and Fishermen	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	• Department of Forest Resource Conservation
Khentii Province Environmental Protection Agency	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	Ministry of Natural Resources and Environment, Thailand
Khulna University	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	• Department of Environmental Quality Promotion
Kings College London	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	• Department of National Parks, Wildlife and Plant Conservation
Kingsborough Community College	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	• Office of Natural Resources and Environmental Policy and Planning
Kolmarden Fundraising Foundation	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	Ministry of Research and Education, Academy of Sciences, Tajikistan
Kreditanstalt für Wiederaufbau (KfW)	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	
L'École nationale vétérinaire d'Alfort (ENVA)	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	
La Asociación Centro De Custodia De Fauna Silvestre La Senda Verde	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	
LaGuardia College	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	
Lake Champlain Basin Program	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	
Lamont Doherty Earth Observatory - Columbia University	Marine and Coastal Management, Republic of South Africa	Marine and Coastal Management, Republic of South Africa	

Ministry of Science, Argentina  
 Ministry of Sustainable Development, Forest Economy and Environment, Gabon  
 Ministry of the Attorney General, Belize  
 Ministry of Tourism (Directorate of Conservation Areas), Mozambique  
 Ministry of Tourism, Belize  
 Ministry of Tourism, Environment and Natural Resources, Zambia  
 Ministry of Tourism, Uganda  
 Ministry of Wildlife Conservation and Tourism in South Sudan  
 Minnesota Buffalo Association (MN)  
 Minnesota Zoological Garden  
 Minnesota Zoological Society  
 Missouri Botanical Gardens  
 Mongol-American Cultural Association (MACA)  
 Mongolian Customs Agency  
 Mongolian General Agency for Specialized Inspection  
 Mongolian State Border Defense Agency  
 Mongolian State Central Veterinary Laboratory  
 Montana Bison Association  
 Montana Department of Environmental Quality  
 Montana Department of Transportation  
 Montana Fish Wildlife and Parks  
 Montana State University  
 Montana Wilderness Association  
 Montana Wildlife Federation  
 Moscow State University  
 Mote Marine Laboratory  
 Mountain Conservation and Development Programme (MCDP)  
 Mouvement des Indigènes, Autochtones et Pygmées du Gabon (MINAPYGA)  
 Municipal Art Society of New York  
 Municipal Government of Orellana  
 Mural, Mural on the Wall  
 Museo De Historia Natural De Noel Kempff Mercado  
 Museo delle Scienze, Trento  
 Museum of Jewish Heritage  
 Museum of the City of New York  
 Museum of the Moving Image  
 Muyissi Environnement  
 Nacionalidad Sápara del Ecuador  
 Nacionalidad Waorani del Ecuador  
 Nagqu Management Sub-Bureau, Chang Tang National Reserve of Tibet Autonomous Region  
 Naples Zoo at Caribbean Gardens  
 Nathan's Famous  
 National Agricultural Research Institute  
 National Agricultural Research Institute, Papua New Guinea  
 National and Oceanographic and Atmospheric Administration  
 National Audubon Society  
 National Bison Association  
 National Botanical Garden of Belgium (Meise)  
 National Center of Veterinary Diagnostic, Ministry of Agriculture, Tajikistan  
 National Centre for Biological Sciences  
 National Directorate of Veterinary Services (DNSV)  
 National Environment Management Authority (NEMA), Rwanda  
 National Environmental Education Foundation  
 National Environmental Protection Agency (NEPA), Afghanistan  
 National Fisheries Authority, Papua New Guinea  
 National Fisheries College  
 National Forest Authority (NFA), Rwanda  
 National Forestry Authority (NFA), Uganda  
 National Forestry Authority, Papua New Guinea  
 National Geographic Society  
 National Indian Health Board  
 National Institute for Oceanographic Data (CNDIO/CENAREST)  
 National Maritime and Safety Authority, Papua New Guinea  
 National Oceanic and Atmospheric Administration (NOAA)  
 National Office for the Environment (ONE), Madagascar  
 National Parks Board, Singapore  
 National Parks Conservation Association  
 National Research Council of Argentina (CONICET)  
 National Research Institute, Papua New Guinea  
 National Science and Engineering Research Council of Canada (NSERC)  
 National Science Foundation  
 National Service of Animal Health and Food Safety (SENASAG)  
 National Service of Protected Areas (SERNAP)  
 National Tiger Conservation Authority, Ministry of Environment & Forests, Government of India  
 National University of Laos  
 National University of Mongolia  
 National University of Singapore  
 National Wildlife Federation  
 National Wildlife Refuge Association  
 Natural History Museum of the Adirondacks/The Wild Center  
 Natural Resources Conservation Agency (BKSDA Aceh)  
 Natural Resources Conservation Agency (BKSDA Bengkulu)  
 Natural Resources Conservation Agency (BKSDA Central Java)  
 Natural Resources Conservation Agency (BKSDA Central Kalimantan)  
 Natural Resources Conservation Agency (BKSDA Jakarta)  
 Natural Resources Conservation Agency (BKSDA Jambi)  
 Natural Resources Conservation Agency (BKSDA Lampung)  
 Natural Resources Conservation Agency (BKSDA West Java)  
 Natural Resources Conservation Agency (BKSDA West Kalimantan)  
 Natural Resources Conservation Agency (BKSDA Jakarta)  
 Natural Resources Conservation Agency (BKSDA Jambi)  
 Natural Resources Conservation Agency (BKSDA Lampung)  
 Natural Resources Conservation Agency (BKSDA West Java)  
 Natural Resources Conservation Agency (BKSDA West Kalimantan)  
 Natural Resources Conservation Agency (BKSDA West Sumatra)  
 Natural Resources Conservation Agency (BKSDA Yogyakarta)  
 Natural Resources Defense Council (NRDC)  
 Naturaleza y Cultura Internacional  
 Nature and Wildlife Conservation Division, Forest Department, Ministry of Environmental Conservation and Forestry, Myanmar  
 Nature Conservancy Canada  
 Nature Harness Initiatives (NAHI)  
 Nature Protection Team (NPT)  
 Nature Uganda  
 NatureFiji-Mareqeti Viti  
 NatureServe  
 Network (AKDN)  
 Nevada Department of Wildlife  
 New Ireland Province Learning and Training Network  
 New York Blood Center  
 New York Botanical Garden  
 New York City Ballet  
 New York City Center  
 New York City Department of Parks and Recreation  
 New York City Natural Areas Conservancy  
 New York City Opera  
 New York Hall of Science  
 New York League of Conservation Voters  
 New York Natural Heritage Program  
 New York State Adirondack Park Agency  
 New York State Department of Environmental Conservation  
 New York State Department of State  
 New York State Department of Transportation  
 New York State Energy Research and Development Authority  
 New York State Marine Educators Association  
 New York State Museum  
 New York State Olympic Regional Development Agency  
 New York University  
 New Zealand Nature Institute/Initiative for People Centered Conservation (NZNI-IPECON)  
 Newcastle University  
 Newcourse  
 Ngari Management Sub-Bureau, Chang Tang National Reserve of Tibet Autonomous Region  
 Nicaragua Armed Forces  
 Nicaragua National Police  
 Nigeria Conservation Foundation  
 Nigerian Federal Ministry of Environment  
 Nigerian National Park Service  
 Nigerian Police Service Veterinary Division  
 NOAA, Atlantic States Marine Fisheries Commission (ASMFC)  
 NOAA, Bureau of Ocean Energy Management (BOEM)  
 NOAA, Mid Atlantic Fisheries Management Council (MAFMC)  
 NOAA, National Marine Fisheries Service (NMFS)  
 NOAA, Office of National Marine Sanctuaries  
 Nomadic Nature Conservation (NNC)  
 Nomrog Strictly Protected Area Administration  
 North Carolina Museum of Natural Sciences  
 North Carolina Zoological Society  
 North Dakota State University  
 North Sumatra Military Police

North Sumatra Provincial Police  
 Northeastern States Research Consortium  
 Northern New York Audubon  
 North-South University  
 Norwegian Agency for Development Cooperation (NORAD)  
 NY/NJ Baykeeper  
 Nyanga Tour  
 NYC Department for the Aging  
 Ocean Conservancy  
 Ocean Diving Club, Syiah Kuala University  
 Oceana  
 Oceana Chile  
 Oceanic Society  
 Office National de la Chasse et de la Faune Sauvage and Direction de l'Agriculture et de la Forêt, Mayotte/France)  
 Office National des Forêts (ONFI)  
 Office of Climate Change and Development, Papua New Guinea  
 Office of the District Governor of Wakhan (Badakhshan)  
 Office of the District Governor of Yakawlang/Band-e-Amir (Bamyan)  
 Office of the Governor, Badakhshan  
 Office of the Governor, Bamyan  
 Oglala Lakota Sioux Tribes  
 Okapi Conservation Project  
 Oklahoma Bison Association (OK)  
 Oman Ministry of Environment and Climate Affairs  
 Onon Balj National Park Protected Area Administration  
 Ontario Ministry of Natural Resource  
 Ontario Nature  
 Open Space Institute  
 Oregon State University  
 Organisation Concertee des Ecologistes et Amis de la Nature  
 Organisation d'Accompagnement et d'Appui aux Pygmees  
 Organización Indígena de la Cuenca del Caura  
 Organización Indígena de la Cuenca del Caura, Venezuela  
 Organización Manejo y Conservación  
 Organización Quindiana de Ambientalistas "Orquídea"  
 Osmose  
 OSPESCA (La Organización del Sector Pesquero y Acuicola del Istmo Centroamericano)

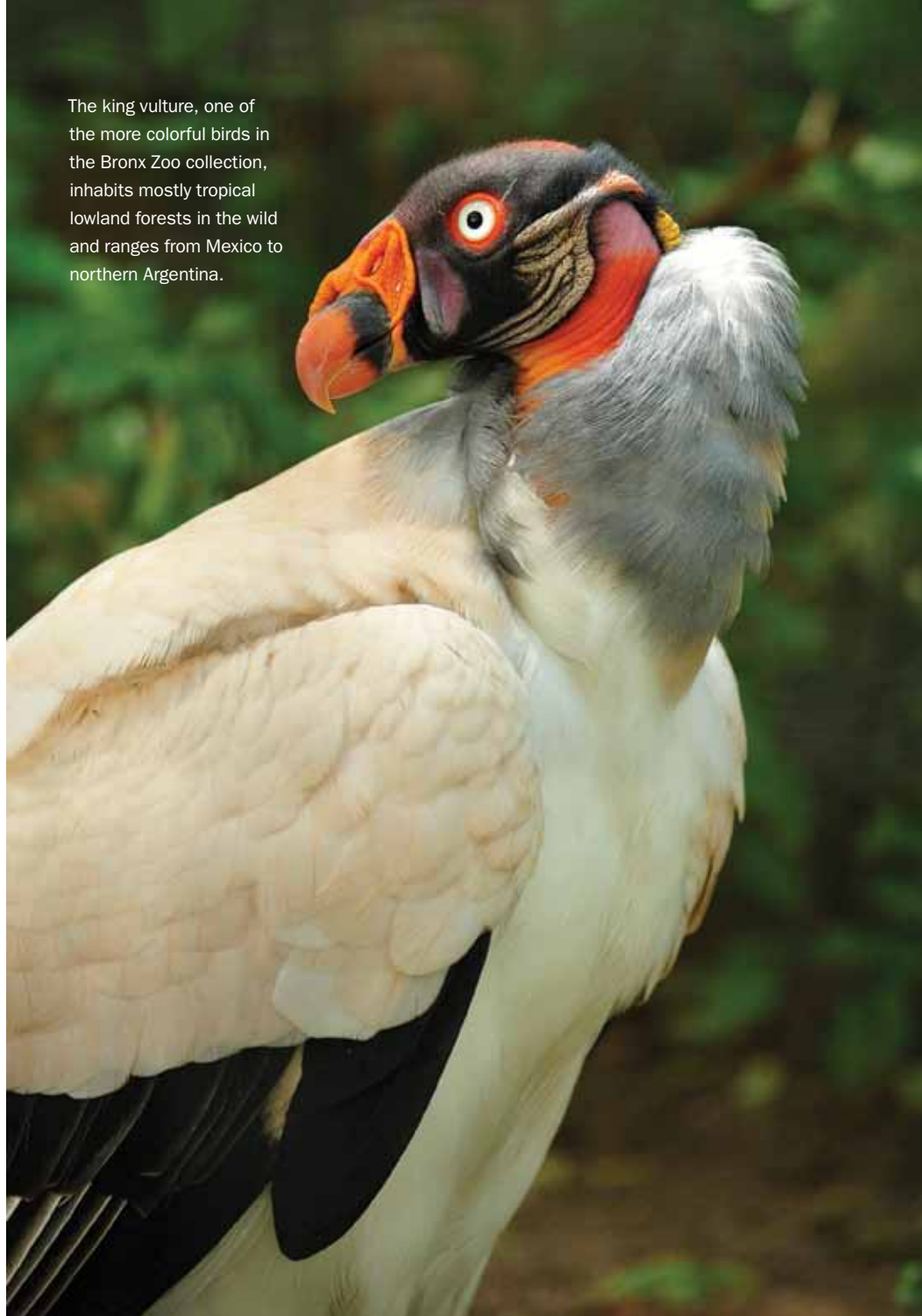
Oxfam International PNG  
 P.S. 1 Contemporary Art Center  
 P.S. 188  
 P.S. 205 Fiorello LaGuardia  
 P.S. 329  
 Pacific Institute of Geography  
 Pact  
 Palung Foundation  
 Pamir Biological Institute  
 PAMS Foundation  
 Panthera  
 Papua New Guinea Centre for Locally Managed Areas  
 Parachute Festival  
 Parks Canada  
 Parque "Acero Marka Rancho Resort"  
 Parque Nacional Bahuaja Sonene  
 Parque Nacional del Manu  
 Partenariat Tortue  
 Partners in Food Solutions  
 Partners of the Forum for the Conservation of the Patagonian Sea and Areas of Influence  
 Partnership for the East Asian-Australasia Flyway (EAAFP)  
 Pasteur Institute  
 Patrimonio Natural  
 PCI Media Impact  
 Peace Parks Foundation  
 Pediatric Gastroenterology, Hepatology, and Nutrition & Center for Infection and Immunity, Columbia University Medical Center  
 People and Carnivores  
 People Centered Conservation Mongolia (PCC)  
 Percy FitzPatrick Institute of African Ornithology, University of Cape Town  
 Perkumpulan Celebio  
 Perkumpulan PETRA  
 Persian Wildlife Heritage Foundation (PWHF)  
 Petén Guatemala  
 Pew Charitable Trust  
 Phoenix Fund  
 Pilon Lajas Biosphere Reserve  
 Plan4theLand  
 Planning and Development Department, Gilgit-Baltistan  
 PNG Eco-Forestry Forum  
 PNG Sustainable Development Program  
 Point Defiance Zoo and Aquarium  
 Police Athletic League  
 Pontifícia Universidade Católica do Rio Grande do Sul, Brazil  
 Potawatomi Zoological Society  
 Prairie Island Indian Community

Primorskii Krai Society of Hunters and Fishermen  
 Princeton University  
 ProdiPan  
 ProFauna  
 Professionals for Fair Development (GRET)  
 Program Konservasi Harimau Sumatera (The Sumatran Tiger Conservation Programme)  
 Programa de Conservación, Perú  
 Programa de Naciones Unidas para el Medio Ambiente (PNUMA)  
 Project AWARE Foundation  
 Projet de l'Application de la Loi Faunique (PALF)  
 Projet Protection des Gorilles (PPG), Aspinall Foundation  
 Projeto Saium de Coleira (Universidade Federal do Amazonas)  
 ProNaturaleza  
 Prosalud/Socios Para El Desarrollo  
 Prospect Park Alliance  
 Protect the Adirondacks  
 Protected Areas Conservation Trust, Belize  
 Protected Areas Secretariat, Belize  
 Provincial Administration Offices of Laos  
 Provincial Government of Orellana  
 Provincial Government of Pastaza  
 Public Theater/New York Shakespeare Festival  
 Pueblo Indígena Leco y Comunidades Orginarias de Larecaja  
 Queens Botanical Garden  
 Queens College, SUNY  
 Queens Museum of Art  
 Queens Theatre in the Park  
 Rachel Carson High School for Coastal Studies  
 RACOMI  
 Rainforest Alliance  
 Rainforest Conservation Fund  
 Rainforest Foundation  
 Rajshaji University  
 RARE  
 Ratel Trust  
 Red Alta Dirección  
 Regions Analanjirifo, SAVA, SOFIA, DIANA, ATSIMO, ANDREFANA  
 Regulations Department of Guangzhou Customs  
 Reid Park Zoo  
 Relief International

Research and Production Agency for Biological Preparations, Academy of Agricultural Sciences State Veterinary Inspection Services, Ministry of Agriculture, Tajikistan  
 Renatura  
 Research and Conservation Foundation of PNG  
 Réseau d'Initiatives pour la Nature et le Développement Régional et Africain  
 Réseau des Aires Protégées d'Afrique Centrale (RAPAC)  
 Reseau des Organisation Locales du Lom et Djerem (ROLOM)  
 Reserva Nacional Pacaya Samiria  
 Reserva Nacional Tambopata  
 Resource Africa  
 Rhino Protection Unit / International Rhino Foundation in Indonesia  
 Rhode Island Zoological Society  
 RINDRA  
 Riverhead Foundation  
 Rocky Mountain Bird Observatory  
 Rocky Mountain Land Use Initiative  
 Rocky Mountain Wild  
 Royal Botanical Gardens (Kew)  
 Rukwa Environmental Youth Organization (REYO)  
 Rungwe District Council  
 Rupantar  
 Rurrenabaque Municipality  
 Russian Marine Mammal Council  
 Russian Ministry of Natural Resources  
 Rwanda Development Board (RDB)  
 Rwanda Environment and Development Organization (REDO)  
 Safari Club International  
 Saint Louis Zoo  
 Sam Veasna Center  
 San Andrés  
 San Francisco Estuary Institute  
 San Francisco Zoological Society  
 Sanctuaire des Bonobos du Congo-Lola Ya Bonobo  
 Sand County Foundation  
 Sansom Mlup Prey  
 Santa Rosa de Yacuma Municipality  
 Saola Working Group  
 Sapienza Università di Roma, Rome (CCI initiative)  
 Sarasota Marine Laboratory  
 Sarteneja Association for Conservation and Development  
 Sarteneja Fisherman Association  
 Save our Species  
 SAVE PNG Inc

Save the Environment of  
Afghanistan (SEA)  
Saving Asia's Vultures from  
Extinction (SAVE)  
Scenic Hudson  
School of Global Environmental  
Sustainability  
Scientists from the Alaska  
Department of Fish and Game  
Scientists of the North Slope  
Borough  
Sea Turtle Conservancy  
Secretaria de Estado do Meio  
Ambiente e Desenvolvimento-  
Centro Estadual de Unidades  
de Conservação (SDS-CEUC)  
Sea to Shore Alliance  
Seatuck Environmental Association  
Secretaría de los Recursos  
Naturales (SERENA)  
Servicio Agrícola y Ganadero  
Servicio Nacional de Areas  
Naturales Protegidas, Perú  
Servicio Nacional de Sanidad  
Agraria  
Shan Shui Conservation Center  
Shanghai Administration  
Department of Afforestation  
and City Appearance  
Shark Advocates International  
Shark Legacy  
Shark Trust (UK based)  
Shingle Shanty Preserve and  
Research Station  
Shorefront YM-YWCA  
Siberut National Park Authority  
Sierra Club  
Sikhote-Alin Zapovednik  
Silicon Valley Community Foundation  
Simon Fraser University  
SIMPONA  
Smithsonian Institution  
Snow Leopard Foundation (SLF)  
Snow Leopard Trust (SLT)  
Snug Harbor Cultural Center &  
Botanical Garden  
Sociedad Peruana de Derecho  
Ambiental  
Society for Conservation Biology  
Society for Marine Mammalogy  
Socio Bosque Program  
SOCP (Sumatran Orangutan  
Conservation Program)  
Soekarno-Hatta Airport Quarantine  
Soekarno-Hatta International  
Airport Customs  
Solicitor General's Office, Belize  
Sonoran Institute  
South African National Parks  
(SANParks)

The king vulture, one of  
the more colorful birds in  
the Bronx Zoo collection,  
inhabits mostly tropical  
lowland forests in the wild  
and ranges from Mexico to  
northern Argentina.



South African Veterinary  
Foundation  
South Brooklyn Youth Consortium  
Southern African Development  
Community (SADC)  
Southern Environmental Association  
Spectrum  
Squalus (German Elasmobranch  
Society)  
Stanford University  
State Departments of Johor,  
Pahang and Sarawak  
State Endangered Species Import  
and Export Management Office

State Forestry Administration,  
PR China  
State University of New York  
College of Environmental  
Science and Forestry  
Staten Island Children's Museum  
Staten Island Historical Society  
Staten Island Museum  
Staten Island Zoological Society  
Staying Connected Initiative  
Partners  
Steppe Forward Programme (SFP)  
Stockholm University  
Stony Brook University

Studio Museum in Harlem  
Suaka Elang (Raptor Sanctuary)  
Sueb Nakasatien Foundation  
Sukhbaatar Province  
Environmental Protection  
Agency  
Sumatran Elephant Forum  
Summit Institute of Development  
Supreme People's Procuracy  
Sustainable Development &  
Biodiversity Conservation  
in Coastal Protection Forest  
(SDBC-Sundarbans, German  
Development Cooperation (GIZ)

Swiss Agency for Development and Cooperation  
 Switzerland Embassy  
 Tanah Karo District Police  
 TANY MEVA Foundation  
 Tanzania National Parks (TANAPA)  
 Tanzania Natural Resources Forum (TNRF)  
 Tanzania Wildlife Research Institute (TAWIRI)  
 Terrapin Bright Green  
 Territorial Authority of Ten Indigenous and Afro-Descendant Communities of the Pearl Lagoon Basin  
 Teton Regional Land Trust  
 Teton Science School  
 Texas Bison Association (TX)  
 The Adirondack Forty-Sixers  
 The Anti-Smuggling Criminal Investigation Bureau of the General Administration of Customs  
 The Biomimicry Institute  
 The Center for Biodiversity and Conservation of the American Museum of Natural History (CBC-AMNH)  
 The Center for Tropical Forest Science of the Smithsonian Tropical Research Institute  
 The Civil Society Coalition for Oil  
 The Congolese Center of Environmental Data Collection  
 The Environmental Conservation Trust Fund of Uganda (ECOTrust)  
 The Greater Yellowstone Coalition  
 The Green Club Green Group of Afghanistan (GGA)  
 The Heart of the Rockies Initiative  
 The Natural Capital Project  
 The Nature Conservancy (TNC)  
 The Nature Conservancy of New York  
 The North Sulawesi Watersports Association (NSWA)  
 The Picture House of Pelham, NY  
 The Southern Institute for Ecology  
 The United Nations Educational Scientific and Cultural Organization  
 The University of Hong Kong  
 The University of Vermont's Gund Institute of Ecological Economics  
 The Vital Ground Foundation  
 The Wild Center  
 The Wilderness Society  
 The Wildlands Network



The Wildlife Society  
 The World Bank  
 The World Bank's Corazón del Corredor Project, Nicaragua  
 Theodore Roosevelt Conservation Partnership  
 Tibet Wildlife Conservation Association  
 Tiger Research and Conservation Trust  
 Titian Foundation  
 Toledo Institute for Development and Environment  
 Toledo Zoo  
 Tom's Diner  
 Towns of Clifton and Fine  
 TRAFFIC  
 Transportation Security Administration (TSA)  
 Tree Talk Foundation  
 Trento Science Museum  
 Troppenbos International  
 Trout Unlimited  
 Trust for Public Land  
 Tug Hill Commission  
 Tug Hill Tomorrow Land Trust  
 Turner Construction  
 Turner Endangered Species Fund  
 Turtle Conservation Fund

Turtle Survival Alliance  
 Two Countries, One Forest  
 Uganda Carbon Bureau  
 Uganda Conservation Fund  
 Uganda Wildlife Authority (UWA)  
 Ujamaa Community Resource Trust (UCRT)  
 Ulaanbaatar City Agency for Specialized Inspection  
 Ulayat Foundation  
 UMPKY Patrol  
 UNEP Convention on Migratory Species  
 UNEP WCMC (CCI Initiative)  
 UNICEF  
 Unidad De Limnologia Del Instituto De Ecologia De La Universidad Mayor De San Andres  
 Union of Beekeepers' Cooperatives of Nyungwe National Park (UBWIZA BWA NYUNGWE)  
 Union of Concerned Scientists  
 United Nations Development Program (UNDP)  
 United Nations Educational, Scientific and Cultural Organization (UNESCO)

United Nations Environment Program (UNEP)  
 United Nations Food and Agricultural Organization Emergency Centre for Transboundary Animal Diseases Regional Office for Southern Africa (FAO-ECTAD)  
 United States Africa Command, Headquarters, U.S. Armed Forces, Africa (AfriCom)  
 United States Agency for International Development (USAID)  
 United States Bureau of Land Management (BLM)  
 United States Coast Guard (USCG)  
 United States Department of Agriculture  
 United States Department of Defense  
 United States Department of Interior  
 United States Environmental Protection Agency  
 United States Fish and Wildlife Service (USFWS)  
 United States Fish & Wildlife Service, Wildlife Without Borders program

The cownose ray, like this one at the New York Aquarium, is found across a large part of the western Atlantic and Caribbean, from New England in the United States down to Venezuela and northern Brazil.

- Universidade Eduardo Mondlane, Mozambique
- Universidade Estadual de São Paulo – Rio Claro
- Universidade Federal ABC
- Universidade Federal de Mato Grosso do Sul
- Universidade Federal do Amazonas
- Universitas Negeri Papua
- Universite de La Rochelle, France
- Universiti Malaysia Sarawak: Institute of Biodiversity and Conservation
- University of Antananarivo, Faculty of Sciences
- University of Belize
- University of California, Berkeley School of Public Health
- University of California, Davis Wildlife Health Center
- University of California, San Diego: Scripps Institution of Oceanography
- University of California, Santa Barbara
- University of California, Santa Cruz
- University of Cape Town
- University of Colorado Boulder (CO)
- University of Dar es Salaam
- University of East Anglia
- University of Exeter’s Marine Turtle Research Group UK
- University of Florence, Italy
- University of Florida, Center for African Studies
- University of Goroka
- University of Kent (CCI initiative), UK
- University of KwaZulu-Natal
- University of Miami
- University of Michigan
- University of Montana
- University of Nevada-Reno
- University of Papua New Guinea
- University of Pretoria
- University of Queensland
- University of Rhode Island
- University of Texas at El Paso
- University of Veterinary and Animal Sciences, Lahore
- University of Virginia
- University of Wageningen Herbarium
- University of Wisconsin
- University of Wyoming
- Upper Green River Alliance
- Uragus, Russia
- Urban Assembly School for Wildlife Conservation
- Urban Neighborhood Services
- US Climate Action Network
- Ussuriski State Zapovednik
- Vermont Center for Ecostudies
- Vermont Natural Resources Council
- VESSWIC (Veterinary Society for Sumatran Wildlife Conservation)
- Veterinarios sin Fronteras Canada
- Veterinary and Animal Breeding Agency, Ministry of Industry and Agriculture
- Viceministry of Environment, Bolivia
- Vietnam CITES Management Authority (Ministry of Agriculture and Rural Development)
- Village Focus International
- Wageningen University - Plant Production Systems Group
- Wakhan Pamir Association (WPA)
- Washington Avenue Merchants Association
- Watamu Turtle Watch (WTW)
- Wave Hill
- Way Kambas National Park Authority
- Wellcome Trust Sanger Institute
- Western Environmental Law Center
- Western Forest Complex Conservation Foundation
- Western Governors Association
- Western Indian Ocean - Consortium (WIO-C)
- Western Indian Ocean Marine Science Association (WIOMSA)
- Western Resource Advocates
- Wetlands International
- Whale and Dolphin Conservation Society
- Whale Conservation Institute Argentina (ICB)
- Wild Team (formerly Wildlife Trust of Bangladesh)
- Wild4Ever Foundation
- Wild4Life
- WildAid
- WildCane
- Wildcat Service Corporation
- Wildlands Network
- Wildlife Alliance
- Wildlife and Parks Department, Gilgit-Baltistan
- Wildlife Clubs of Uganda
- Wildlife Department of Khabarovskii Krai
- Wildlife Department of Primorskii Krai
- Wildlife Division (WD)
- Wildlife Institute of India
- Wildlife Reserves Singapore Pte Ltd
- Wildlife Trust Alliance
- Wildtracks
- Wind River Ranch Foundation
- Winter Wildlands Alliance
- Woodland Park Zoo
- Working Dogs for Conservation
- World Food Organization
- World Organization for Animal Health Sub-Regional Representation for Southern Africa (OIE)
- World Resources Institute
- World Society for the Protection of Animals
- World Wide Fund for Nature
- World Wildlife Fund
- Wyoming Department of Transportation
- Wyoming Game and Fish Department
- Wyoming Land Trust
- Yale University
- Yale University’s Occupational and Environmental Medicine Program
- YAPEKA (Nature Conservation Education Foundation)
- Yayasan Apiculata Manado
- Yayasan Badak Indonesia (Indonesian Rhino Foundation)
- Yayasan Badak Indonesia (Rhino Foundation of Indonesia)
- Yayasan Lam Jabat
- Yayasan Lembaga Analisis Sosial dan Pembangunan (LASP)
- Yayasan Orangutan Sumatera Lestari – Orangutan Information Centre
- Yayasan PUGAR
- Yayasan SEMANK
- Yayasan Swara Perempuan
- Yayasan Terangi
- Yayasan Wahana Liar
- Yellowstone Ecological Research Center
- Yellowstone Safari Company (MT)
- Yellowstone to Yukon Initiative
- You Gotta Believe
- Yukon Environment
- YWCA Coney Island
- Zambia Wildlife Authority (ZAWA)
- Zanzibar Animal Affection Society (ZAASO)
- Zoo Atlanta
- Zoo Boise
- Zoo Zürich
- Zoological Society of London
- Zoological Society of San Diego
- Zov Taiga
- Zov Tigra National Park
- Zshuk Art Initiative

- United States Fish and Wildlife Service - Marine Turtle Conservation Fund
- United States Fish and Wildlife Service (various departments)
- United States Forest Service (USFS)
- United States Marine Mammal Commission (MMC)
- United States National Marine Fisheries Center
- United States National Park Services (NPS)
- United States Geological Survey (USGS)
- Universidad Austral de Chile
- Universidad Católica del Ecuador
- Universidad de Magallanes
- Universidad do Algarve, Portugal
- Universidad Federico Santa Maria
- Universidad Nacional de Guinea Ecuatorial in Spanish -National University of Equatorial Guinea (UNGE)
- Universidad Publica El Alto
- Universidad San Francisco
- Universidad Santo Tomás
- Universidade de Lisboa, Portugal
- Universidade de São Paulo.

# QA

PAT THOMAS



As a boy, WCS Vice President Pat Thomas spent hours buried in *National Geographic*, captivated by legendary conservation biologist George Schaller's writings on his work with African lions. Here, Pat shares the joys and challenges of his work as General Curator at the world's most famous zoo; the thrill of bringing Leo, an orphaned snow leopard, back to New York City from Pakistan; and the moment when he finally met his childhood idol.

#### WHAT IS YOUR ASSIGNMENT WITH WCS?

I am the Vice President & General Curator and Associate Director of the Bronx Zoo. I work closely with all the animal department curators to develop our animal management programs.

#### WHAT ARE THE BIGGEST CHALLENGES YOU FACE IN YOUR WORK WITH WCS?

One of our greatest challenges is maintaining sustainable populations of animals. Our goal is to have genetically diverse, demographically stable populations that are viable over the long term. We want to achieve this by having our five parks manage species cooperatively, and by working with other Association of Zoos and Aquariums (AZA) zoos on Species Survival Plan (SSP) and Taxon Advisory Group (TAG) programs. We currently participate in over 100 SSPs and TAGs.

#### HOW HAS ANIMAL HUSBANDRY CHANGED SINCE YOU STARTED WORKING IN THIS FIELD?

Advances in zoo science and veterinary care over the past 30+ years have improved our ability to meet the myriad challenges we face in caring for a large and diverse collection, and we certainly apply more science in the management of our animals. But there will always be an art to quality animal care. There is also a greater emphasis on formal enrichment programs – providing animals with a variety of stimuli that encourage the expression of species-typical behaviors and allow animals to have more control over their environments and daily experiences.

#### DESCRIBE THE MOST MEMORABLE ANIMAL YOU HAVE WORKED WITH AT WCS.

There have been many, but if I had to choose one it would be Leo, the snow leopard that we brought to New York from northern Pakistan. He was a hand-reared orphan that quickly outgrew facilities to hold him. The Pakistani government and our State Department turned to us because of our long-term success with this species. I was among three WCS staff who traveled to get him. The trip was logistically difficult, but Leo handled it well. Once at the Bronx Zoo, Leo was introduced to a female who helped him learn how to be a snow leopard. Now we hope he will successfully breed and add his valuable genes to the SSP population.

#### HOW DO OUR NEW YORK CITY PARKS ASSIST IN THE CONSERVATION OF THREATENED SPECIES?

Our animals are ambassadors for their wild cousins. We take great pride in creating naturalistic habitats that are stimulating to our animals and encourage activity because we realize that most of our visitors will never have the opportunity to see those species in nature. We want to exhibit our animals in a way that inspires our guests to want to help us conserve them and their homes.

#### WHAT IS THE CONNECTION BETWEEN STUDIES DONE IN OUR PARKS AND WCS'S FIELD WORK?

We design park studies to enhance our knowledge of our animals and provide them with better care. Whenever possible, we try to conduct studies that benefit both our park animals and their counterparts in the wild. One example is the vaccination procedures we've developed for African wild dogs. These procedures can be used to vaccinate our wild dog pack at the Bronx Zoo, but may also be used to protect animals in the wild from disease.





Whenever possible, we try to conduct studies that benefit both our park animals and their counterparts in the wild.

**WHAT IS THE MOST IMPORTANT FUNCTION OF ZOOS TODAY?**

Zoos must educate people about wildlife. Our visitors should learn not only about the biology and behavior of the species they see, but also about the threats they face and what can be done to ameliorate those threats. Zoos should also inspire visitors to care about nature, and encourage them to help protect wildlife.

**HOW DO THE CURATORS AT WCS'S NEW YORK CITY PARKS WORK TOGETHER?**

We have a diverse, talented, and expert staff that works cooperatively across our five parks, meeting twice weekly to discuss issues related to our animals. WCS also has a unified collection plan that provides key data on more than 1,250 species – including censuses, population targets, and future goals – and identifies the role each species plays in our parks. This unified plan enables our individual parks to manage their collections at a facility level, while allowing for the integrated management of species across our four zoos and aquarium.

**WHAT KEEPS YOU PASSIONATE ABOUT YOUR WORK?**

I've been with WCS for over 33 years, and I can think of no better place to work than the Bronx Zoo. Part of what makes my job so appealing is the unlimited opportunity to learn. We have such a large and diverse animal collection, and our staff has great expertise in a wide range of fields. You are constantly exposed to new and different experiences.

**WHAT EVENTS STOOD OUT FOR YOU AT THE BRONX ZOO IN 2012?**

One was the reintroduction of Kihansi spray toads, a species declared extinct in the wild, to their native habitat in Tanzania. The Bronx Zoo played a major role in saving the Kihansi toad. Our herpetology department labored for the past 10 years

to perfect this species' propagation. Working with the Toledo Zoo, we were able to breed enough toads to send back to the Kihansi Gorge.

Another 2012 highlight was the first successful birth of a calf with pure American bison genes through embryo transfer. WCS has a long history in conserving American bison, and is now focused on its ecological restoration. Because so many bison have interbred with cattle, we are looking to create herds of pure-bred American bison at the Bronx and Queens Zoos by rescuing embryos from pure bison and implanting them in surrogate cow bison, which then give birth to American bison calves.

**WHAT INSPIRED YOU TO GO INTO THE CONSERVATION FIELD?**

I've been fascinated with wild animals for as long as I can remember. When I was 11 years old I read an article by George Schaller [then a field biologist for the New York Zoological Society, as WCS was previously known] in *National Geographic* highlighting his work with African lions. From that moment on, I knew I wanted to work with wildlife. When WCS hired me in 1979, I was thrilled to be working at the wonderful Bronx Zoo and to be part of the same conservation organization as my childhood idol. I can still remember the thrill I felt when I received a phone call from George asking me a question about a snow leopard - it was like receiving a call from Bruce Springsteen!

**WHAT IS YOUR PROUDEST ACHIEVEMENT?**

I'm so proud to be a member of the WCS team of curators, managers, animal care staff, and veterinarians. This incredible team continuously tries to advance the high quality care we provide to our animals, conducts studies to expand our knowledge in order to benefit our animals and their wild cousins, and provides opportunities to train the next generation of zoo professionals.



[ OPPOSITE ] Pat Thomas with a bison herd in Genesee Park, Colorado.

[ ABOVE ] Snow leopard Leo thrives at the Bronx Zoo after his arrival from Pakistan as an orphaned cub in 2006.

# WCS STAFF

## OFFICE OF THE PRESIDENT

Cristián Samper, *President and CEO*  
Gail Sheldon, *Chief of Staff*  
Felicia Hamerman, *Senior Liaison*

## ZOOS AND AQUARIUM

James J. Breheny, *Executive Vice President & General Director, Zoos and Aquarium and Jonathan Little Cohen Director of The Bronx Zoo*  
Linda Wied, *Executive Assistant*  
Michelle Midea Lanci, *Administrative Assistant*

## ZOOLOGICAL HEALTH PROGRAM

Paul P. Calle, *Chief Veterinarian & Director Zoological Health*  
Joanne Valletta, *Office Manager*  
Lisa B. Eidlin, *Hospital Manager*  
Jessica Chin, Terria Clay: *Hospital Assistants*  
Santiago Munoz, *Medical Records Specialist*

## CLINICAL DEPARTMENT

Bonnie L. Raphael, *Department Head and The Marilyn M. Simpson Distinguished Veterinarian*  
Robert P. Moore, John M. Sykes, Jean A. Paré: *Associate Veterinarians*  
Kimberly Rainwater, *WCS/Cornell Clinical Resident*  
Meredith M. Clancy, *Zoological Medicine Resident*  
Pamela Manning Torres, *Veterinary Technician Supervisor*  
Karen D. Ingerman, *Lead Veterinary Technician*  
Krysten Marchese, *Senior Veterinary Technician*  
Ihsaan Sebro, *Associate Veterinary Technician*

## PATHOLOGY DEPARTMENT

D McAloose, *Department Head, Schiff Family Distinguished Scientist in Wildlife Health*

Alisa L. Newton, *Senior Pathologist*  
Carlos E. Rodriguez, *Associate Pathologist*  
Kenneth J. Conley, *DVM, Dipl ACVP, Pathology Fellow, Associate Pathologist*  
Tracie Seimon, *Molecular Post-Doctoral Fellow*  
Alfred B. Ngbokoli, *Supervisor, Histology Laboratory*  
Daniel Friedman, *Histotechnician*  
Hermy Guerra, *Pathology Technician*

## CONSERVATION EDUCATION

Donald C. Lisowy, *Director of WCS Education*  
Ilyssa Gillman, *Assistant Director of WCS Education*  
Robyn Charlton, *Director of Professional Development*  
Jessica Bicknell, *Manager of Program Development*  
Kimberly N. Fletcher, *Divisional Administrator*

## Bronx Zoo Education

Kathleen LaMattina, *Collections Manager*  
Leslie Schneider, *Coordinator of Volunteers*  
Erin Prada, *Manager of Education*  
Ronald Griffith, *Senior Instructor*  
Veronica Barnes, *Instructor*  
Christopher MacKay, *Instructor*  
Thomas Frankie, *Education Specialist*  
Francesca Cristofaro-Williams, *Education Specialist*  
Amanda Lindell, *Education Specialist*  
Andrea Drewes, *Education Specialist*

## New York Aquarium Education

Chandra Bennett, *Manager of Education*  
Robert Cummings, *Senior Instructor*

Melissa Carp, *Instructor*  
Kimberly Acevedo, *Coordinator of Volunteers*  
Maria Zampella, *Administrative Support*

## City Zoos Education

Karen Tingley, *Director of City Zoo Education*

## Central Park Zoo Education

Michelle Beach, *Manager of Education*  
Bricken Sparacino, *Program Coordinator*  
Amy Yambor, *Coordinator of Volunteers*  
Philana Otruba, Jennifer Plumber, Jennie Inchausti: *Instructors*  
Lisette Antepara, *Registrar*  
Emilie Hanson, *Instructor*

## Prospect Park Zoo Education

Megan Malaska, *Manager of Education*  
Debbie Dieneman-Keim, *Coordinator of Volunteers*  
Kate Anderson, Emily Stoeth, Allison Hague: *Instructors*  
Ashley Herbolich, *Registrar*

## Queens Zoo Education

Thomas Hurtubise, *Manager of Education*  
Monica Negron, *Coordinator of Volunteers*  
S. Alex Kudroff, *Instructor*  
Anine Booth, *Instructor*  
Alison Plotkin, *Registrar*

## BRONX ZOO

James J. Breheny, *Executive Vice President & General Director, Zoos and Aquarium and Jonathan Little Cohen Director of the Bronx Zoo*  
Patrick R. Thomas, *Vice President & General Curator and Associate Director*

## Assistant Curator Behavioral Husbandry

Melissa Nelson

## Administrative Assistant, Animal Departments

Carolyn Rezckalla

## Mammalogy

Colleen McCann, *Curator*  
Joshua Charlton, David Powell: *Assistant Curators*  
Penny Kalk, Claudia Wilson: *Collection Managers*  
Bryan Robidas, *Operations Supervisor*  
Brenda Kramer, Jessica Moody, Brandon Moore, Jason Rowe, Jose Vasquez: *Assistant Supervisors*  
Robert Terracuso, Kris Theis: *Primary Wild Animal Keepers*  
Ralph Aversa, Michelle Blatz, Kitty Dolan, Loraine Hershonik, Florence Klecha, Kathleen MacLaughlin, Douglas Mase, Joan McCabe-Parodi, Jeffrey Munson, Phillip Reiser, Gerard Stark: *Senior Wild Animal Keepers*  
Alexis Amann, Avril Armstrong, Adele Barone, Taryn Beasty, Anthony Buffill, Dana Caton, Lacy Clifford, Kelly Cochran, Katherine D'Andrea, Dawn Davis, Jessica Demarco, Brian DiGirolamo, Linda Edge, Juliet Elkins, David Fernandez, Carlos Flores, Joel Forgione, Mary Gentile, Amy Golden, Mary Gremler, Carol Henger, Danielle Hessel, Vanessa Jones, Liana Kabrel, Sara Koplisch, Ashley Kulbacki, Melissa Liggio, Jennifer Loveless, Kathryn Markisz, Jennifer Macina, Lacy Martin, Cindy Maur, Joanne McGillycuddy, Kathleen McMahan, Michelle Medina, Elizabeth Mills, Douglas Morea,

Joseph Nappi, Keri Nugent,  
Jonathan Perez, Noel Perriello,  
Rebecca Raymond, Daphne  
Revie, Chris Salemi, Sabrina  
Squillari, Danielle Steele,  
Monika Stroeber, Heather  
Tassler, Nate Thompson,  
Christine Vela, Patricia-Ann  
Vierling, Lisa Walker, Tiffany  
Warno, Mike Wrubel, Rebecca  
Yee: *Wild Animal Keepers*  
Matthew Vara, *Supervising  
Maintainer*  
James Musano, *Maintainer*  
Lawrence D'Arasmo, *Maintainer*

#### **Ornithology**

Nancy Clum, *Curator*  
Juan Cornejo, *Curatorial Science  
Fellow*  
Mary Iorizzo, *Collection  
Manager*

Ken Huth, Mark Hofling: *Assistant  
Supervisors*  
Patricia Cooper, Gigi Giacomara,  
Nancy Gonzalez, Tasha Hook,  
Susan Leiter, Alana O'Sullivan,  
Yvette Pokorny, Jeremy Sanders,  
Brian Tierney: *Senior Wild  
Animal Keepers*  
Jeannine Correa, Elaina Crocuitto,  
Myra Dremeaux, Tim Mohl,  
Kristin Schaumburg, Kim Smith,  
Leigh Smith, Ramsay Thom,  
Melanie Weber, Elizabeth  
Wetherhold: *Wild Animal  
Keepers*

#### **Herpetology**

Donal Boyer, *Curator*  
Christopher Hutson, *Collections  
Manager*  
Valorie Titus, *Curatorial Science  
Fellow*

Megan Baumer, Alyssa Borek,  
William Orrico, Ryan Dumas:  
*Wild Animal Keepers*

#### **Special Animal Exhibits: Children's Zoo, Butterfly Garden, Camel Rides, Tractable Animals**

John Scarola, *Operations  
Supervisor*  
Ruth Iannuzzi, Diana Belich:  
*Supervisors*  
Mia Alomar, Kirsty Mae-Black,  
Jason Castro, Aubrey Crowley,  
Shakira Paula: *Assistant  
Supervisors*  
Julio Aquino, Kira Babuska,  
Leonard Bille, Mary Bynon,  
Sara Gonzalez, Gilbert  
Geehern, Melanie Lumba,  
Tyrone Nickens, Patricia Ortiz,  
Luke Torres, Roxana Watts:  
*Wild Animal Keepers*

**Animal Management Services**  
Nilda Ferrer, *Curator and Registrar*  
Anne Rockmore, Diana Tancredi:  
*Animal Records Specialists*  
Mariluz Vazquez, *Data and  
Technical Support Assistant*  
Carmen Guzman, *Animal Shipping  
Coordinator*  
Gail Bonsignore, *Records Assistant*

#### **Life Support Systems**

Jason Wagner, *Life Support  
Technician*

#### **Animal Commissary**

Joseph Briller, *Animal Commissary  
Manager*  
Moruf Egbo, Michael Marano:  
*Senior Wild Animal Keepers*  
Quincy Banks, Michael Cruz,  
Guillermo Guzman, John King:  
*Wild Animal Keepers*

Toco toucans pass a grape  
at the Bronx Zoo's World  
of Birds.





[ ABOVE ] WCS President and CEO Cristián Samper (3rd row, center) and WCS Executive Vice President and Zoos and Aquarium General Director Jim Breheny (rear) pose with Queens Zoo Director Scott Silver (3rd row, far right) and his staff.

Jim Lo, *Store Keeper*  
Patricia Peters, *Team Leader*

**Bronx Zoo Facilities**  
Robert J. Gavlik, *Executive Director*

**Pest Control**  
Sergio Rivera, *Manager*

Azaad Gaffar, *Assistant Manager*  
Joseph White, *Pest Control Applicator*  
Thomas Corr, *Part-time Pest Control Applicator*

**Security**  
Edward Cooney, *Manager of Security*  
Raynor Mattson, *Assistant Manager*  
Steve Condon, Dave Gallart, Kennedy Samuels: *Supervisors*  
Luis Barreto, Steven Carr, Gregory

Upshaw, James Williams, Jimmy Barreto, Weston Hill, Ivonne Collazo, Ralph Zamboli, Haseeb Baksh: *Zoological Park Maintainers*

Jesus Padilla, Maribel Perez, Robert Rosario, Donald Thompson, Evelyn Torres: *Assistant Zoological Park Maintainers*  
Shanea Byrd, *Provisional Assistant Park Maintainer*

**Operations**  
John Duke, *Director*  
Michael Santomaso, *Assistant Director*  
Laurel Toscano, *Administrative Assistant*

— **Operations Shops**  
Gregory Kalmanowitz, Robert Santarelli, Marconi St. Hill, Robert Stillwell, Nathaniel Torres: *Supervising Park Maintainers*

Walter Almodovar, James Byrne, Benedetto Cardillo, Francis Cushin, Joseph Corry, Robert Gonzalez, Alfred Hart, John Illenye, Anthony Laino, Ramon Mendoza, Alison Modeste, Winston Newton, Nicholas Perrone, Nelson Prado, Frank Sausto, Edward Scholler: *Zoological Park Maintainers*

**Maintenance**  
Dominick Caputo, *Manager*  
John Sperlongano, *Assistant Manager*  
Johnnie Ferreira, *Supervising Park Attendant*  
Anthony Corvino, *Supervising Park Maintainer*  
Raquel Camacho, *Administrative Assistant*

John Tralongo, *Zoological Park Maintainer*

Rafael Adorno, Harry Basdeo, William Castro, Jr., Carlos Figueroa, Orlando Figueroa, Gabriel Gomez, Santos Gonzalez, Othniel Gulley, Laino Zachary, Mary Martin, Anthony Petrone, Jose Raul Rivera, Michael Sbarbori: *Assistant Zoological Park Maintainers*  
Maria Maldonado, *Senior Attendant*

John Bruno, Jr., Migdalia Cordero, Maria Estrada, Roberto Figueroa, Gilbert Green, Porfirio Gutierrez, Stephanie Jackman, Keith Harris, Sonia Kalmanowitz, Angela Limardo, Louis Landi, Miguel Monclova, Carmen Montalvo, Manuel Moura, Gerard Palinkas, Rubin Pineiro, Raymond Quaglia, Niurka Ramos, Williams Sochor, Pedro Velez, Eduardo Vidal, Raymond Zelenka: *Attendants*  
Jeffrey Taylor, *Supervising Motor Vehicle Operator*

Joel Annunziato, Luigi Marricco, Michael Locascio: *Motor Vehicle Operators*

### **Cogeneration**

Michael Henry, *Manager of Electric Services and Cogeneration*

Mark Anderson, *Supervisor*  
Steve Amatrudo, Dave Bailey, Farouk Baksh, Hervin Brown, Steven Kozy, Parman and Kesraj, Keith Reynolds, Sanjeev Seodas, Justin William: *Zoological Park Maintainers*

### **Horticulture**

James Coelho, Robert Herkommer, David Hyde: *Gardeners*  
Paul Fialkovic, David Rosenthal: *Zoological Park Maintainers*  
Kevin Bermeo, Ivonne Lopez, Lloyd Pearson: *Assistant Zoological Park Maintainers*

### **CENTRAL PARK ZOO**

Jeffrey K. Sailer, *Director of City Zoos, Facility Director and Curator CPZ*  
Stephen Carey, *Assistant Facility Director*

Beverly J. Moss, *Executive Assistant*

Charles Cerbini, *Research Assistant*  
Noemi Medina, *Receptionist/ Department Assistant*

### **Animal Programs**

Susan Cardillo, *Assistant Curator of Animals*  
Anthony Brownie, *Collection Manager*  
Dave Austry, *Animal Supervisor*  
Joshua Sisk, *Assistant Animal Supervisor*  
Bernadine Leahy, *Senior Veterinary Technician*  
Robert Gramzay, Melissa Mason, Juan Romero, Nora Berine: *Senior Wild Animal Keepers*  
Celia Ackerman, Veronica Correa, Tumeca Gittens, Shanna Dempsey, Luis Jimenez, Diana Major, Bill Robles, Jeff Schmidt, Gretchen Stoddard, Joshua Sisk, Brian Lassegard, Kyle Germano, Karen Pedevillano, Angel Ocasio, Veronica Thomas, Elias Venetsanos: *Wild Animal Keepers*

### **Operations & Maintenance**

Igor Laboutov, *Director of Operations, City Zoos*  
Edwina Jackson, *Administrative Assistant*  
Mong Lee, *Assistant Manager/ Systems Specialist*  
Michael Nedd, Marlon Ragbir: *Supervisors*  
Arkady Gutman, Alistair Johnson, Jose Torres, Nasrali Hosein, Richard Deonarine, Rabindranath Lowtoo: *Zoo Park Maintainers*  
Robert Brinson, Wayne Martin: *Attendant Supervisors*  
Eusebia Alvarez, Joshua Doval, Ramdhannie Dwarka, Crystal Kinlaw, Geraldo Peralta, Lakisha Terry, Robert Veerapen, Santa Alequin, Irma Rodriguez, Harry Basdeo: *Attendants*

### **Horticulture**

Todd John Comstock, *Curator of Horticulture, City Zoos*  
Rafael Fernandez, *Assistant Horticulturist*

### **Security Admissions & Membership**

John Geist, *Manager of Security, Admissions & Membership*  
Jolanta Lewinska, *Assistant Manager*  
Fitzroy Neufville, *Maintainer*  
John Bohan, Carlton Davidson, Evelyn Torres, Alberto Gonzalez, John Joseph, Marilyn Maldonado, Frederick Miller, Nestor Morera, Nixon Nedd, Jaime Pagan, Everton Pearson, Antonio Nunez, Ramanen Veerapen: *Assistant Zoo Park Maintainers*  
Sonia Colon, Joanne Kittler, Sookiah Maharaj: *Ticket Agents/Cashiers*

### **NEW YORK AQUARIUM**

Jon Forrest Dohlin, *Vice President and Director*  
Joan Shovlin, *Executive Assistant to Director*

### **Animal Programs**

David DeNardo, *General Curator and Director of Animal Operations*  
Richard Blankfein, *Dive Safety Officer, Volunteer Dive Program and Animal Husbandry Volunteer Coordinator*  
Martha Hiatt, *Supervisor, Behavioral Husbandry*  
Guenter Skammel, *Senior Trainer*  
Angela Coccoma, Cristina Mendonca: *Trainers*  
Michael Morgano, Hans Walters: *Supervisors, Animal Department*  
Frank Greco, Leslie Leffler, Ellen Spencer, Wayne Stempler: *Senior Keepers*  
Kayla Bergman, Nicole Ethier, Stephanie Mitchell, Lora Murphy, Nicole Pisciotta, Sal Puglia, Andrea Reimold, Veronica Smith, Karen Wallack: *Keepers*  
Miranda Feldmann, *Administrative Assistant*

### **Aquatic Health and Living Systems**

Catherine McClave, *Curator of Aquatic Health Science and Living Systems*  
Marisa Ostek, Patricia Toledo: *Veterinary Technicians*

Mary Messing, *Project Assistant*

### **Plant Engineering**

Dennis Ethier, *Director of Plant Engineering*  
Melvin Pettit, *Manager of Facilities*  
John Moore, Kenneth Prichett, Ralph Ramos, William Sheehan, David Scheurich, Michael Tine: *Supervising Park Maintainers*  
Richard Bullen, Richard DiStefano, Alfred Escalera, Rucaldeau Renodeau, Tony Vargas: *Park Maintainers*  
Christopher Hackett, *Project Assistant*

### **Park Services**

Rodney Rollins, *Director of Park Services*  
Carlos Martinez, *Security Supervisor*  
Samuel Black, Richard Jarus, Owen Mayhew: *Park Security Maintainers*  
Diana Barreto, Carlos Emiliano Louis Parker, Christopher Quiles, Hector Weir: *Assistant Park Security Maintainers*  
Patti Blydenburgh, *Supervisor, Buildings*  
Vanessa Campos, Raul Domenech, José Gonzalez, William Green, Peter Inesti, Raquel Jimenez, Jonathon Jules Eldwin Lebron, Alicia Shannon, Keith Trowell: *Attendants*

### **PROSPECT PARK ZOO**

Denise McClean, *Facility Director*  
Ann Soobrian, *Administrative Assistant*

### **Animal Programs**

Terry Webb, *Collection Manager*  
Hulya Israfil, Katelyn Massarone, Nichole Shelmidine: *Assistant Supervisors*  
Rebecca Carbin, *Veterinary Technician*  
Jennifer Greig, Frances Verna: *Senior Wild Animal Keepers*  
Gwen Cruz, Crystal Dimiceli, James Gottlieb, Astra Kalodukas, Atu Marshall, Denielle Muoio, Justine Wilber, Tom Anderson, Brittany Murphy, Allison Shaw: *Wild Animal Keepers*

## Operations & Maintenance

Anthony Boodoo, *Manager*  
Rafael Ramirez, *Assistant Manager*  
Oscar Ceron, *Supervising Maintainer*  
Reginald McKenzie, Chaitram Singh, Shivanand Sookdeo, Terrie Francis: *Zoological Park Maintainers*  
Selwyn Ramnaidu, *Assistant Zoological Park Maintainer*  
Jason Fung, *Senior Attendant*  
Luis Cruz, Stacey Cummings, Eisha Johnson, Angelita Rivera, James Savastano, Takquan McGill: *Park Attendants*

## Security & Admissions

Ken Norris, *Manager*  
Eddie Wright, *Assistant Manager*  
Joanne Carrillo, *Supervisor*  
Michael Fazzino, Vincent Ferguson, Kadeshia Brown, David McPhearson, Yolanda Smith, Jennifer Soto, Romualdo Vasquez, Milton Williams, Rosa Ellis, Marvin Toribio: *Assistant Zoological Park Maintainers*  
Lola Chung, Brenda Martinez, Nicole Smith, Suheilee Vasquez: *Ticket Agents*

## QUEENS ZOO

Scott C. Silver, *Facility Director and Curator of Animals*

## Animal Programs

Craig Gibbs, *Assistant Curator of Animals*  
Monica Negron-Cottle, *Administrative Assistant and Volunteer Coordinator*  
Donna-Mae Graffam, *Supervisor*  
Mark Hall, *Assistant Supervisor*  
Marcy Wartell Brown, Marcos Garcia, Dana Vasquez, Raul Vasquez: *Senior Wild Animal Keepers*  
Kelly Carmen, Barbara Fung, Ira Goldman, Susan Makower, David Morales, Robin Sutker, Christopher Scoufaras, Erin Rosebrock, Thomas Seals, Aaron Springer, Margaret Doutre, Sosha Fusco: *Wild Animal Keepers*  
Melissa Ortiz, *Veterinary Technician*

## Operations & Maintenance

Jeffrey Blatz, *Manager*  
James Wohlmaker, *Supervisor*

Rafael Genao, Bo Yang Tian: *Zoo Park Maintainers*  
Orlando Colon, Eugene Texeira: *Assistant Zoo Park Maintainers*  
Carol White, *Supervising Attendant*  
Carolina Becker, Alexis Ogando, Johanny Salcedo, James Williams: *Attendants*

## Horticulture

John McBride, *Assistant Horticulturist*

## Security & Admissions

Vincent Capobianco, *Manager*  
Richard Godas, *Assistant Manager*  
Paul Fairall, *Supervisor*  
Leonard Golino, Dannis Graham, Anthony Mark, Noel Martinez, Garfield McEachron, Carlton Nelson, Rafael Nieves, William Rosado, Dhando Shankar, Vilson Zeko: *Assistant Zoo Park Maintainers*  
Tina Anderson, Joanne Crespo, Augustella Zeko: *Ticket Agents*

## GLOBAL CONSERVATION

John G. Robinson, *Executive Vice President for Conservation and Science*, Joan O. L. Tweedy *Chair in Conservation Strategy*  
Josh Ginsberg, *Senior Vice President*  
Sandra Comte, *Executive Assistant*  
Matthew Hatchwell, *Chief Executive, WCS Europe, Martin Callow*  
William Conway, Holly Dublin, Eric Sanderson, George Schaller: *Senior Conservationists*

## CONSERVATION OPERATIONS

Leticia Orti, *Director*  
London Davies, Alfred DeGemmis, Kate Mastro, Emily Sahl, Todd Olson

## CONSERVATION SUPPORT

David Wilkie, *Director*  
LiLing Choo, Karl Didier, Lynn Duda, Kim Fisher, Christina Imrich, Danielle LaBruna, Nalini Mohan, Timothy O'Brien, Rob Rose, Samantha Strindberg

## GLOBAL INITIATIVES

Todd Stevens, *Executive Director*  
London Davies, Andres Gomez,

Carter Ingram, Damien Joly, Helen Lee, Steve Osofsky, Michael Painter, Marcela Uhart, Ray Victorine, James Watson: *Directors & Leads*

Glenda Ayala Aguilar, Mark Atkinson, Shirley Atkinson, Rosario Barradas, Pablo Beldomenico, Kenneth Cameron, Andrea Caselli, Nancy Caverro, Leanne Clark, Carlton Chotalal, Pablo de Diego, Martin Gilbert, Zoe Greatorex, Rodolfo Nallar Gutierrez, Losloo Jambal, Lucy Keatts, Kongsy Khammavong, Michael D. Kock, Melissa Manhas, Patricia Mendoza, Melvin Merida, Sireeda Miller, Flavia Miranda, José Luis Mollericona, Wivine Mouellet, Yovana Murillo, Baudelaire Zorine Nkouantsi, Daniel O'Rourke, Tammie O'Rourke, Sarah Olson, Alain Ondzie, Stephani Ostrowski, Catia de Paula, Alberto Pérez, Paulina Ponce de Leon, Maria Virginia Rago, Ali Madad Rajabi, Patricia Reed, Erika Alandia Robles, Joey Rosario, Celina Roy, Dan Segan, Enktuvshin Shiilegdamba, Soubanh Silithammavong, Fabiola Suárez, Nguyen Thi Thanh Nga, Herminio Ticona, Jim Tolisano, Hebe del Valle Ferreyra, Nguyen Van Long, Stephanie Wang, Wendy Weisman, Michael Westfall, Angela Yang, Hafizullah Ziauddin

## PROGRAM DEVELOPMENT

Susan Tressler, *Vice President*  
Liz Lauck, *Director*  
Annie Mark, Elizabeth McDonald, Alicia Srinivas

## SPECIES CONSERVATION

Elizabeth Bennett, *Vice President, Species Conservation*  
Simon Hedges, Brian Horne, Elizabeth Macfie, John Polisar, Howard Rosenbaum, Joe Walston, Steve Zack

## Ocean Giants

### —Marine Mammals

Benazir Ahmed, Boris Antaininaina, Zahangir Alom, Norbert Andrianarivelo,

Salvatore Cerchio, Tim Collins, Elisabeth Fahrni-Mansur, Rubiyat Mansur Mowgli, Brian Smith

### —Sea Turtles

Rodolpho Chang Bennett, Angela Formia, Victor Huertas, Cynthia Lagueux, William McCoy

### —Sharks

Rachel Graham, Sarah Pacyna, Hilmar Salazar



## AFRICA

James Deutsch, *Executive*

*Director*

Graeme Patterson, Kirstin Siex:

*Deputy Directors*

Fiona Maisels, Nick Mitchell,

David Moyer, Alastair Nelson,

Amy Pokempner, Mandy

Tshibangu

## Cameroon

Anthony Nchanji Chifu, Albert

Ekinde, Indah Kuchambi

Eni, Bernard Fosso, **Roger**

**Fotso**, Romanus Ikfuingei,

Christopher Jameson, Marie

Odile Kabeyene, Pius Awungjia

Khumbah, Gwendoline

Kwankam, Joseph Liwongo

Mulema, Mbalhoudji Ngodjo

Ndodjim, Josiane Armele

Ngalamo, David Nzouango,

Jean Bosco Pouomegne,

Olivier Sene, Andre Hilaire

Siko, Eleonore Mewambe

Tchameni

## Central Africa Republic

Andrea Turkalo

## Chad

Ben Evans

## Democratic Republic of Congo

Joelle Badesire, Arcel Bamba,

Stephanie Bofua, Leonard

Chihenguza, Floribert Bujo

Dhego, Corneille Ewango,

Benjamin Ntumba Kaciela,

Baby Ngungu Kasareka,

Isabelle Kasongo,

Emmanuel Kayumba,

Deo Gracias Kujirakwinja,

Innocent Liengola, Jacob

Madidi, Jean-Remy

Makana, Crispin Mahamba,

Joel Masselink, Robert

Mwinyihali, Boni Nyembo,

Solange Osako, Baraka

Othep, Raymond Paluku,

Papy Shamavu, **Richard**

**Tshombe**, Alain Twendilonge,

Peter Umunay



One of 53 community resource committees in Pakistan. Rangers supported by WCS have helped local Markhor sheep populations to expand by close to 60 percent.

## Gabon

Rostand Aba'a, Gaspard Abitisi, Michel Owono Assoumou, Helene Blanchard, **Romain Calaque**, Martin Hega, Hector Koumakoudi, Ian Lafferty, Franck Lepemangoye, Quevain Makaya, Elise Mazeyrac-Audigier, Modeste Mengue, Pierre Mintsu, Yves-Eric Moubagou, Narcisse Moukougou, Sandra Nse Esseng, Caroline Pott, Tim Rayden, Jeannick Le Rouzic-Berthelot, Olivia Scholtz, Malcolm Starkey, Ruth Starkey, Mike Zue

## Kenya

Margaret Kinnaird (*seconded to Mpala Research Station*)

## Madagascar

Solofo Andriamaharavo, Valina Lalavola Andriamaholy, Lantoniaina Andriamampianiana, Razafimpahanana Andriamandimbisoa, Abdoul Andriamiravo, Aristide Andrianarimisa, Vonjy Andrianjakarivelo, Ambroise Brenier, Christian Burren, Raberirina Dokolahy, **Christopher Holmes**, Olga Horace, Jean Jacques Jaozandry, Tiana Rahagalala, Nantenaina Raharison, Stevens Ramaroson, Césaire Ramilison, Bemahafaly Randriama, Nalisoa Randriambololona, Mireille Randriankinasa, Luccianie Raonison, Félix Ratelolahy, Santisy, Judicael Zafindrandalana

## Nigeria

Emmanuel Basse, **Andrew Dunn**, Jonathan Eban, Inaoyom Imong, Celestine Mengnjo, Louis Nkonyu, Ogechi Nwachukwu, Gilbert Nyanganji, Francis Okeke, Mark Otu

## Republic of Congo

Rene Aleba, Patrick Boundja, Thomas Breuer, Ange Doubis, Hilde van Leeuwe, Richard Malonga, Nazaire Massamba, Jerome Mokoko, David Morgan, Aline Ndombi, Tomo Nishihara, Nirina Rakotomahefa, Tim

Rayden, Crickette Sanz, Vince Smith, **Paul Telfer**, Felin Twagirashyaka, Ashley Vosper, Moise Zoniaba

## Rwanda

David Baligomwa, Mediatrice Bana, Jean Pierre Bayavuge, Innocent Buvumuhana, Jean Baptiste Gakima, Venuste Gakuru, Gratien Gatorano, Alex Gerard, Claude Habimana, Jacques Hakizimana, Vincent Hakizimana, Samuel Harelimana, Gratien Kamarompaka, François Kamatari, Charles Karangwa, **Michel Masozera**, Camille Mpogazi, Emmanuel Mpumuje, Silvestre Mulindankaka Celestin Mugegngango, Pierre Mukeshimana, Felicien Mulindagwe, Félix Mulindahabi, Joseph Munyarukaza, Jean-Bosco Mureritesi, Felicien Musonera, Berthe Mutirabura, Robert Mwunvaneza, Gratien Ndiramiye, Joseph Ngango, Ferdinand Ngayabahiga, Venerand Ngirababyeyi, Abraham Ngiruwonsanga, Gerard Ngizwenumwe, Francois Nkurunziza, Aaron Nicholas, Vedaste Nsanzumuhire, Andre Nsengiyunva, Barakabuye Nsengiyumva, Augustin Ntamunozu, Nicolas Ntare, Theoneste Nzabonimana, Eraste Nzakizwanayo, Innocent Nzaramba, Fidele Ruzigandekwe, Celestin Sebashyitsi, Pierre Sebishihe, Innocent Semahoro, Anastase Semana, Védaste Sentama, Claude Senyenzi, Martin Sindikubwabo, Claudine Tuyishime

## South Sudan

Paul Peter Awol, Charles Lopoyok Augustino, Adam Beh, Oling Bush, Robert Craig, Harriet Drici, **Paul Elkan**, Falk Grossman, Dave Henson, Christine Ifuho, Atia Joseph, Juan Juliet, Thomas Kamau, Joyce Kilonzi, Michael Lopidia, Amy Millican, Moses Taban, John Moi Venus

## Tanzania

Husna Ally, Sharifa Aziz, Claire

Bracebridge, John Chapile, Zacharia Charles, Edmund Chota, Emmanuel Chota, **Tim Davenport**, Daniela De Luca, Sarah Durant, Said Fakhil, Jonas Farasi, Charles Foley, Lara Foley, Machaku Geni, Hilal Hakiba, Rama Simeon Hare, Felix Hombe, Shaaban Imani, Mather John, Raphael Julius, Emanuel Juma, Ayubu Kajigili, Laizer Katiti, Iddi Khamis, Salim Khamis, Sylvanos Kimiti, Paul Kirway, Elisipha Kivuyo, Meshack Laizer, Bahati Litwande, Jane Lugome, Elizabeth Luvanga, Amani Lwila, Sophy Machaga, Habib Abdul Majid, Nuru Mbanu, Vicky Mbofu, Joseph Mbombwe, Amnoni Mbubha, Ali Mbugi, Fredy Mdemu, Ramadhani Mduruma, Michele Menegon, Linus Mgohamwende, Clara Mjinja, John Mkindi, George Mkorongo, Richard Mlangalila, Grayson Mlugale, Noah Mpunga, Joseph Mshana, Sanane Msilikali, Rogasian Mtana, Michael Munisi, Peter Mvungi, Baton Mwabongole, Bakar Mwadini, Atupakisye Mwaibanje, Juma Mwaipungu, Obadia Mwaipungu, Lusajo Mwakalinga, Charles Mwakasele, Gidion Mwakila, Daud Mwalolesa, Willy Mwalwengele, Michael Mwambala, Buto Mwambuneke, Christopher Mwamposa, Christopher Mwampetele, Shaban Mwankinga, Mapambano Mwaselela, Elish Mwasoye, Leonard Mwatusubila, Ali Ndolela, Ibrahim Ngailo, Yohna Ngorika, Verdiana Nkana, Joshua Nsagaje, Boniface Osujaki, Matatizo Philimon, Guy Picton Phillipps, Paulo Issaya Pongo, Saitoti Pongo, Mwakiro Rajabu, Almas Ramadhan, Festo Ramsi, Hamisi Sadallah, Madawa Sagaja, Leba Sambilimwaya, Shambo Sanga, Haruna Sauko, Joyce Simon, Petro Wilson

## Uganda

Sam Ayebare, Ben Beinomugisha,

Carol Bogezi, Jan Broekhuis, Ivan Buyondo, Asaph Byamukama, Miriam van Heist, Sophie Jingo, Bosco Kirama, Ben Kirunda, Scovia Kobusingye, Beatrice Kyasiimire, Miguel Leal, **Alastair McNeillage**, Tutilo Mudumba, Hamlet Mugabe, Wilson Muhumuza, Geoffrey Mwedde, Simon Nampindo, Grace Nangendo, Mustapha Nsubuga, Edward Okot, Robert Okumu, Wilbroad Owor, Juliet Owor, Andrew Plumpre, Sarah Prinsloo, Douglas Sheil, Richard Ssemmanda, Warren Turinawe, Juraj Ujhazy

## Zambia

**Dale Lewis**, Mike Matokwani

## ASIA

Joe Walston, *Executive Director*  
Peter Clyne, Peter Zahler: *Deputy Directors*  
Rose King, Erika Reuter, Lisa Yook

## Regional

Ullas Karanth, Antony Lynam, Steve Platt, Emma Stokes, Martin Tyson

## Regional Conservation Hub-Singapore

**Colin Poole**, Bee Choo Ng, Madhu Rao

## Afghanistan

Mohammad Abas, Najeeb Ahamadi, Nisar Ahmad, Ahmad Ahmadi, Faizuddin Akbari, Basir Akseer, Ayub Alavi, Baber Ali, Dad Ali, Hussain Ali, Inayat Ali, Mohammad Aminuddin, Fridoon Amiri, Mohammad Amruddin, Jawid Ansari, Sadaf Arif, Mohammad Assadullah, Karim Bakhtiyaree, Mujtaba Bashari, Mehdi Bayat, Peter Bowles, David Bradfield, Mohammad Dawood, Zabihullah Ejlassi, Sabir Estanikzai, Walayat Habibi, Tariq Hamidi, Sediqa Hussaini, Muhammad Ismael, Ghulam Jilani, Kabir Karimzada, Khwaja Khalilullah, **David Lawson**, Ali Madad, Gul Makai, Noor Mohammad,



Zalmai Moheb, Sweeta Mohmand, Qaseem Nabi, Sayed Naqibullah, Hafizullah Noori, Stephane Ostrowski, Sweeta Qaderi, Mohammad Rahim, Arif Rahimi, Hafizullah Rahmani, Haqiq Rahmani, Rozama, Tamkeen Sadaat, Qais Sahar, Hamidullah Sahibi, Sayed Salauddin, Ghulam Sediq, Khwaja Sediq, Seemin, Mohammad Shafiq, Hussain Shohib, Anthony Simms, Farooq Soree, Naseem Sultani, Saboor Sultani, Sheraqa Tamasi, Malik Twakulzada, Abdul Wahid, Abdul Wali

#### Cambodia

Hong Chamnan, Song Chansocheat, An Dara, Tom Evans, **Mark Gately**, Nhem Sok Heng, Ashish John, Long Kheng, Simon Mahood, Nut Menghor, Daniel Morawska, Karen Nielsen, Hannah O'Kelly, Pet Phaktra, Suon Phalla, Hugo Rainey, Tao Sarath, Tan Setha, Ea Sokha, Men Soriyun, Heng Sovannara, Sun Visal

#### China

Cirenbaizhen, Cirenbaizhen, Minfang Gan, **Aili Kang**, Fengliang Li, Ying Li, Xuchang Liang, Bin Liu, Jing Liu, Peiqi Liu, Tong Liu, Shunqing Lu, Yi Ren, Fuping Sun, Jirong Tang, Zhikang Wan, Donna Xiao, Yi Xiaohua, Yan Xie, Mingxia Zhang, Huaidong Zhao, Xiaoyan Zhao, Linreng Zuo

#### India

Vidya Athreya, Prerna Bindra, Arjun M. Gopalaswamy, Ajith Kumar, N. Samba Kumar, M.C. Vinay Kumar, P. M. Muthanna

#### Indonesia

Dwi Nugroho Adhiasto, Herovan Alfin, **Noviar Andayani**, Putri Anindita, Fitri Ariyanti, Bambang P. Bharoto, Agus W. Boyce, Bonie F. Dewantara, Akbar Ario Digdo, Patih Fahlapie, Giyanto, Donny Gunaryadi, Agung Hawari Hadi, Novi Hardianto, Herwansyah,



[ LEFT ] To conserve turtles in Ecuador's Yasuni National Park, WCS works with the Waoroni indigenous group to protect egg nests from hunters.

#### Malaysia

Lukmann Haqeeem bin Alen, Yugees a/p Anandarao, Azima Azmi, Melissa Bilong, Eunice Chia, **Melvin Gumal**, Muhammad Munir bin Idris, Muhamad Asri bin Isa, Saidatul Nadiah binti Jalaluddin, Norolhuda binti Jamaluddin, Kamilia binti Jasrizal, Ngumbang anak Juat, Norhidayati Khalid, Mohd Amir Hashimi bin Hashim, Khing Su Li, Song Horng Liang, Tey Kiat Loong, Chee Pheng Low, Noraisah binti Majri, John Mathai, Chiew Lin May, Wegess anak Midok, Eling Ng, Sylvia Ng, Nuradila binti Norddin, Leong Shen Nyan, Zahratul Akmar binti Noordin, Joshua Pandong, Rozaini binti Abd Rahman, Nur Iadiah binti Mohd Saat, Now anak Sidu, Lam Kai Sin, Mufeng Voon, Lam Wai Yee, Thai Poh Yen, Liew Lee Ying, Zulaika binti Zamzuri, Nurul Aida binti Zawakhir

Ian M. Hilman, Iwan Hunowu, Silfi Iriyani, Munawar Kholis, David Kosegeran, Usman Laheto, Leswarawati, Lusiana, Edyson Maneasa, Koen Meyers, Athaya Mubarak, Muslim, Imam Najib, Meyner Nusalawo, Cep Dedi Permadi, Maya D. Prasetyaningrum, Lilik Prastowo, Agus Teguh Prihartono, Wulan Pusparini, Amir Hamzah Ritonga, Danny Albert Rogi, Edward E. Rumapea, Frida Mindasari Saanin, Indra Sakti, Adnun Salampessy, Agus Hadi Santoso, Ester Situmorang, Synthia Soputan, Sugiyono, Ade Kusuma Sumantri, Rudianto Surbakti, David Susanto, Yonata M. Syarif, Irsan SZ. Thayeb, Rusli Usman, Waktre, Endang Widodo, Deni Sukri Wijaya, Agustinus Wijayanto, Hariyo Wibisono

#### Lao PDR

Keophithoune Bounnak, Phaivone Chanlaunphome, Mattiphob Douangmyxay, Sivilay Duangdala, Khamdee

Ernthavanh, Paul Eshoo, John Goodrich, Jeremy Ferrand, Zoe Greatorex, Chris Hallam, **Troy Hansel**, Kongsy Khamavong, Xaisavanh Khiewwongphanchan, Phonphasong Louangaphaiyalath, Alex McWilliam, Singkeo Milasack, Colin Moore, Phakham Outhanehone, Soudalath Phasavath, Bounthavy Phommachanh, Houmphanh Phompanya, Sinthone Phoumkhanouane, Sengphet Pinsouvanh, Steve Platt, Sue Pretty, Akchousanh Rasaphone, Santi Saypanya, Soulinphone Saysinghan, Daovanh Senghalath, Sisomphane Sengthavideth, Soubanh Silithammavong, Siphakhone Singhalath, Bouavanh Sinpaseuth, Phouthone Sisavath, Ben Swanepoel, Phet Sysanavongxay, Dtouy Tavanh, Soukdavanh Thilakhoun, Oudomxay Thongsavath, Maikain Vilayvanh, Chanthavy Vongkhamheng, Sithon Vongphavanh, Sithon Vongphothong, Vad Vongphothong, Muas Yachithor

#### Mongolia

Buuveibaatar Bayarbaatar, Turkhuu Bilegt, Tanyatuya Demberel, **Amanda Fine**, Bat-Erdene Gomsuren, Losolmaa Jambal, Ochirkhuyag Lkhamjav, Odonchimeg Nyamtseren, Bolortsetseg Sanjaa, Enkhtuvshin Shiilegdamba, Vandandorj Sumiya, James Tallant, Narantsatsral Urtnasan

#### Myanmar

U Aung Myo Chit, Daw San San Htay, U Saw Htun, U Win Ko Ko, U Kyaw Thinn Latt, U Naing Lin, U Kyaw Moe, **U Than Myint**, Daw Khin Myo Myo, U Hla Naing, U Thet Zaw Naing, Daw Myint Myint Oo, U Saw Htoo Tha Po, Robert Tizard, Daw Nan San San Win, U Naing Win, U Than Zaw

## Pakistan

Muhammad Akbar, Mubashar Ali, Muhammad Gufran, Mohammad Jamil, **Mayoor Khan**, Munir Ahmed Mir, Sher Muhammad, Nasimullah, Nasirullah, Abdul Raqeeb, Inayatullah Shah, Mohammad Wali, Zahidullah

## Papua New Guinea

Arison Arihafa, Daniel Charles, John Par Karl, Bensolo Ken, John Kuange, Marzella Maniwavie, Marygrace Puri, Mellie Samson Junior, **Ross Sinclair**, Lily Ugi, Nathan Whitmore, Tanya Zeriga-Alone

## Russia

Andre Dotsenko, Evgeny Gishko, Michiel Hotte, Sergei Hromylev, Natalia Karp, Lubov Klyga, Igor Kolodin, Denis Korchargin, Vladimir Melnikov, **Dale Miquelle**, Marina Miquelle, Katya Nikolaeva, Fiona Pamplin, Tanya Perova, Alexander Reebin, Nikolai Reebin, Anton Semyonov, Jon Slaght

## Thailand

Nikom Borriboonnanakom,

Thongbai Charoendong, Donroman Chatson, Ratchanee Chokcharoen, Kamon Faengbubpha, Manat Inchum, Puwanard Inchum, Nutthinee Jerachasilp, Sitthichai Jinamoy, Pornkamol Jornburom, Thongjia Kaewpaitoon, Chai Kamkaew, Malee Kamkaew, Pairote Limcharoen, Angkana Makvilai, Chanchai Ontea, Supoj Pannoi, Panomporn Patithus, **Anak Pattanavibool**, Manoon Pliosungnoen, Chaksin Praiket, Yossawadee Rakpongpan, Chution Savini, Suitpatee Siethongdee, Wisoot Supong, Wittaya Teuktao, Jutamas Tifong, Mayuree Umponjan, Kwanchai Waitanyakarn

## Vietnam

Leanne Clark, Duong Viet Hong, Hoang Kim Thanh, Le Minh Thao, Nguyen Thi Nhung, Nguyen Thi Thu My, Nguyen Thi Thanh Nga, Nguyen Van Long, Pham Thi Minh, **Scott Robertson**, James Tallant, Tran Xuan Viet, Vu Minh Huyen

## LATIN AMERICA & THE CARIBBEAN

Julie Kunen, *Director*

Mariana Varese, *Director, Perú & Amazon*

Jennifer Blaha, Carlos Fajardo, Sebastian Heilpern, Martín Mendez, Natalia Piland, Jeremy Radachowsky, Natalia Rossi

## Argentina

Ricardo Baldi, Dee Boersma, Mauricio Failla, Valeria Falabella, Esteban Frere, Martín Funes, Patricia Gandini, Alejandro Gonzalez, **Graham Harris**, Patricia Harris, Lara Heidel, Margaret Kay, Carolina Marull, Juan Masello, Patricia Marconi, Julia Medina, Andrés Novaro, Claudia Pap, Julio Prados, Flavio Quintana, Adrian Schiavini, Alejandro Vila, Susan Walker, Pablo Yorio, Carolina Zambruno

## Bolivia

Erika Alandia, Guido Ayala, Nuria Bernal, Zulema Lehm, Oscar Loayza, Guido Miranda, **Lilian Painter**, Ariel Reinaga, Linda

Rosas, Damián Rumiz, Elvira Salinas, Robert Wallace

## Brazil

**Jean Boubli**, Annie Cooper, Cátia Dejuste, **Karl Didier**, Pollyanna Figueira, Ana Garrido, Alexine Keuroghlian, Marcelo Lima, Reinaldo Lourival, Flavia Miranda, Fabio Rohe, Sebastião Sales

## Chile

Susan Arismedi, Eduardo Arroyo, Mauricio Chacón, Rubén Delgado, Daniela Droguett, Francisca Farias, Gemita Molina, Ricardo Muza, Fiorella Repetto, **Bárbara Saavedra**, José Talma, Viviana Urbina, Alejandro Vila, Sharon Zegarra

## Colombia

William Cardona, Isabel Estrada, **Padu Franco**, Catalina Gutierrez, Laura Jaramillo, Robert Marquez, Jesus Martinez, Carlos Ríos, Vladimir Rojas, Nestor Roncancio, Manuela Ruiz, Carlos Saavedra

## Ecuador

Walter Andy, Edison Araguillín, Gosia Bryja, **Adriana Burbano**,



WCS Vice President and New York Aquarium Director Jon Forrest Dohlin (on right) with aquarium General Curator and Director of Animal Operations David DeNardo.

Ruben Cueva, Gloria Figueroa, Edison Molina, Diego Naranjo, Erika Olmedo, Jaime Palacios, Belen Pazmiño, Efen Tenorio, Victor Utrera, Natalia Valarezo, Galo Zapata

#### Falkland Islands

Rob McGill

#### Mesoamerica

Raiza Barahona, Maria Bautista, Miriam Castillo, Marcial Córdova, Pedro Diaz, Diana Escobar, Peter Feinsinger, Rony García Anleu, Eleazer Gonzalez, Mariano Gonzalez, Rosario Guerra, Manuel Lepe, Angel Luna, Rolando Monzon, Roan Balas McNab, Melvin Mérida, Julio Morales, Juan Pablo Noriega, Ramon Peralta, Guery Polanco, Gabriela Ponce, Victor Hugo Ramos, America Rodriguez, Luis Romero, Nery Solis, Kender Tut, Geovany Zetina, Julio Zetina

#### Paraguay

Florencia Arano, Angel Brusquetti-Rolon, Juana De Egea, **María del Carmen Fleytas**, Delia Raichakowski

#### Peru

Christopher Albarran, Miguel Antunez, Paul Ascona, Angelica Benedetti, Richard Bodmer, Laura Cancino, Ebert Canayo, Oscar Castillo, Nancy Caverro, Marilla Escobedo, Amanda García, Lucy Gonzáles, Michael Goulding, Andrea Harman, Katia Isla, Alicia Kuroiwa, Leo Maffei, Patricia Mendoza, Armando Mercado, Mariana Montoya, Yovana Murillo, Renzo Piana, Pablo Puertas, Monica Quispe, Steven Sevillano, Milagros Silve, Katherine Uehara, Zina Valverde, **Mariana Varese**, Micaela Varese-Zimic, Carlos Vilchez, Akira Wong, Raizha Yuivilca

#### Venezuela

Carolina Bertsch, Elso Espinoza, Isaac Goldstein, Nirson Gonzales, Marianela La Grave, Francis Mass, Zulima Palma, **Lucy Perera**, Orlando Rodríguez, Williams Sarmiento

#### MARINE

Caleb McClennen, *Director*, *Marine Conservation*  
Howard Rosenbaum, *Director*, *Ocean Giants*  
Amie Bräutigam, Victoria Cordi, Lina Fan, Elizabeth Matthews, Kaitlyn Sephton

#### Global/Regional

Andrew Baker, Tim McClanahan

#### Argentina

Claudio Campagna, Valeria Falabella, Victoria Zavattieri

#### Belize

Alva Arana, Virginia Burns, Delcia Cacho, Rodrick Castillo, David Chan, Robin Coleman, Natalyia Dennison, Angelino Dominguez, Paulita Fabro, Nathaniel Forbes, **Janet Gibson**, Roy Herrera, Julio Maaz, Claudette Montes, Haleam Nicholas, Charles Noralez, Norman Pinks, Pollin Requena, Dolores Sho, Andrew Stockbridge, Danny Wesby, Sandra Zelaya

#### Beringia

Martin Robards

#### Fiji

Ged Acton, Natalie Askew, Akanisi Caginitoba, Akuila Cakacaka, Sirilo Dulunaqio, Margaret Fox, **Stacy Jupiter**, Kini Koto, Waisea Naisililili, Yashika Nand, Nischal Narain, Ingrid Qauqau, Rebecca Weeks

#### Gabon-Congo

Johanna Polsenburg

#### Indonesia

Stuart Campbell, Tasrif Kartawijaya, Susy Djuwita Mawarwati, Yudi Herdiana, Agus Hermansyah, Jamaluddin, Ahmad Mukminin, Efin Muttaqin, Kiagus M Hasbi, Shinta Trilestari Pardede, RR Wulung Dian Pertiwi, Rian Prasetia, A. Besse Rimba, Ripanto, Fakhri Setiawan, Sonny Tasidjawa, Irfan Yulianto

#### Kenya

C. Abunge, J. Dena, C.K. Kirinya, J. Mariara, T.R. McClanahan, J. Mulu, N. Muthiga

#### Madagascar

Solofo Andriamaharavo, Pierson Rodolph Andrianilaina, Aubin Aoemba, Huyghènes Rock Behanarina, Ambroise Brenier, Raoul Olivier Jaonazandry, José Maro, Bebe Jean Furoze Raharinosy, Francisco Ramananjatovo, Bemahafaly Jean De Dieu Randriamanantsoa, Irindray Nambinina Jean Forunat Razafindretsity, Moana Roland, Andriamiravo Abdoul Santisy, Jean Wilfrid Velonantenaina, Toky Nirimamy Voajanahary

#### New York

Merry Camhi, Hans Walters, Carolyn Hall, Claire Hoey, Tiffany Smythe

#### Papua New Guinea

Jasmine Duadak, **Katherine Holmes**, Evelyn Huvi, Modi Pontio, Tau Morove, George Samson, Sai Ugufa

#### NORTH AMERICA

Jodi Hilty, *Director*  
Keith Aune, Eva Fearn, Darren Long, Darby Pieroni, Melissa Richey, Shannon Roberts, Kathryn Socie, Heidi Clark

#### Canada

**Justina Ray**, *Director*  
Mohammed Ashamli, Andrea Bake, Biz Agnew, Cheryl Chetkiewicz, Hilary Cooke, Todd Heakes, Damien Joly, Marilyn Katsabas, Jenni McDermid, Melissa Manhas, Megan Mitchell, Sarah Olson, Tammie O'Rourke, Don Reid, Celina Roy, Joshua See, John Weaver, Gillian Woolmer

#### United States

##### —Adirondacks

Michale Glennon, Jerry Jenkins, Leslie Karasin, Heidi Kretser, Zoë Smith Alan Belford, Brian McAllister, Melanie McCormack, Carriane Pershyn, Levi Sayward, Chad Seewagen, Jamie Hogberg, Colleen Hujar, Aaron Grade, Ashley Jackson, John Wojcikiewicz, Jenny Marotto, Kevin Mink, Jordan Shypinka

##### —Great Plains

Kevin Ellison, Erin Fairbank, Jamie Hogberg, David Laufenberg, Luke Campillo, Caitlin Laughlin, Eric Wilson, Julie Breeden, Katie Yoder, Mayn Hipp, Stacey Baker, Katie Rasmussen

##### —Pacific West and Alaska

Joel Berger, Joe Liebezeit, Sean Matthews, Steve Zack, Mike Fay, Ashley (Nicole) Cook, Mckenzie Mudge, Kevin Pietrzak, Jay Wright, Laurel Ann Curry, Elizabeth Ames, Stephen Kolbe, Cameron Rutt, Brian Long, Athina Catherine Pham, Jonathan Lautenbach, Julie Webber, Erica Escajeda, Amanda Klehr

##### —Yellowstone Rockies

Bryan Aber, Jon Beckmann, Scott Bergen, Joel Berger, Jeff Burrell, Molly Cross, Bob Inman, Kris Inman, Heidi Kretser, Tatjana Rosen, Erika Rowland, Wesley Sarmiento, Renee Seidler, Nick Sharp, Bradley Shepard, Quinn Shurtliff, Andra Toivola, Nicole Walker, Zachary Buck, John Weaver, Sarah Reed

## GLOBAL RESOURCES

Bertina Ceccarelli, *Executive Vice President*  
Marguerite Durret, *Executive Assistant*

## GLOBAL CORPORATE LEADERSHIP

Sebastian Teunissen, *Executive Director*  
Renee Ring, *Director*  
Kathryn Thompson, *Senior Manager*  
Amy Harclerode, *Senior Development Officer*  
Chase Cecil, *Development Associate*  
Caroline Dukmejian, *Development Associate*

## FOUNDATION RELATIONS

Carolyn Gray, *Senior Director*  
Michael Brown, *Assistant Director*  
Liam McCarthy, *Assistant Director*  
Ken Shallenberg, *Senior Development Officer*  
Sylvia Alexander, *Senior Development Officer*

Catherine Grippo, *Development Officer*  
 Monika Szymurska, *Development Officer*  
 Libby Whitney, *Development Officer*  
 Eliza Berry, *Manager*  
 Shanna Keown, *Development Associate*

#### INDIVIDUAL GIVING

Sergio Furman, *Vice President*

#### Conservation Patrons Program

Win Trainor, *Director*  
 Megan Sanko, *Senior Development Officer*  
 Allison Bottomley, *Development Associate*

#### Cultivation and Special Events

Tiffany Reiser-Jacobson, *Director*  
 Michelle Petrone, *Senior Development Officer*  
 Jordana Newler, *Senior Development Officer*  
 Rachel Noel, *Manager*  
 Elizabeth Benham, *Development Associate*

#### Major Gifts and Planned Giving

Valerie Kind, *Senior Director*  
 Christy Burkart, *Assistant Director*  
 Catherine Durand-Brault, *Assistant Director*  
 Renée Levesque, *Senior Development Officer*  
 Melissa Richey, *Senior Development Officer*

Matthew Richter, *Senior Development Officer*  
 Margaret Curran, *Manager*  
 Regina Liferi, *Senior Development Associate*  
 Kimberly Chua, *Development Associate*  
 Maisel Mazier, *Development Associate*  
 Anna Byers, *Development Assistant*

#### Principal Gifts

Kathryn Heintz, *Director*  
 Christine Westphal, *Development Associate*

#### Membership & Small Donor Program

Gale Page, *Director*  
 Deborah Frey, *Assistant Director*  
 Joseph Brescia, *Assistant Manager*



Arthur Bruso, *Production Coordinator*  
 Tal Aviezer, *Communications and Fundraising Associate*  
 Theresa Barry, *Membership Associate*

#### STRATEGIC PLANNING, OPERATIONS & RESEARCH

Ashley Alexander, *Senior Director*

#### Donor Communications & Marketing

Mary Deys Brandão, *Senior Manager*

#### Operations

Joan Doris, *Assistant Director*  
 Gillian Schumacher, *Coordinator*  
 Christine Deem, *Development Associate*

#### Research

Hadley Iacone, *Senior Development Associate*  
 Emma Montgomery, *Development Associate*

#### WCS Conservation Resources Library & Archives

Kerry Prendergast, *Director*  
 Madeleine Thompson, *Librarian and Archivist*

#### FINANCIAL, ADMINISTRATIVE & BUSINESS SERVICES

Patricia Calabrese, *Executive Vice President for Administration and Chief Financial Officer*  
 Dalma Crisostomo-Ward, *Executive Assistant, Administration and Finance*

#### BUDGET AND FINANCIAL PLANNING

Laura Stolzenhaller, *Vice President Budget & Financial Planning*  
 Carolyn De Sena, *Director, Capital Planning*  
 Cecile Koehler, *Director, Budget Operations*

Kelly Cavanaugh, *Director, Global Conservation Budgets*  
 Christine Davy, *Manager, Operating Budget*  
 Wahid Joel, *Budget Coordinator*  
 Edwin Ocampo, *Manager, Capital Construction Finance*  
 Enid Hernandez, *Manager, Capital Budget*

#### FINANCIAL SERVICES

Robert Calamo, *Vice President and Comptroller*  
 Gwendolyn Cleary, *Assistant Comptroller*  
 Albert Corvino, *Director of Financials and Financial Services*  
 Peggy O'Shaughnessy, *Director, Global Financial Services*  
 Julia Grant, Alicia Wyatt: *Senior Accountants*  
 Lori Bueti, *Executive Secretary*

#### ERP Project

Thomas LoProto, *ERP Project Manager*



[ LEFT ] Students in Bokalum, on the edge of Nigeria's Mbe Mountains, give a warm welcome to WCS staff working to promote awareness and conservation of Cross River gorillas – the rarest subspecies of this endangered great ape.

Christina Lancet, *Assistant Manager, NY Aquarium*  
 Kenny Woo, *Ticket Agent, NY Aquarium*  
 Christopher Filomio, *Director, Rides & Parking Operations*  
 Kevin Franqui, *Manager, Bronx Zoo, Rides & Parking Operations*  
 James Fitzgerald, Frank Parco, Joseph Power: *Assistant Managers, Bronx Zoo Rides & Parking Operations*  
 Sarah Jane Witchell, *Director, Group Sales*

**BUSINESS SERVICES**

Robert A. Moskovitz, *Senior Vice President, Business Services*  
 Niko Radjenovic, *Executive Director, Business Operations*  
 Tricia Taylor, *Training Manager, Business Operations*  
 Belén Aranda-Alvarado, *Director, Marketing & Promotion*  
 Gina Talarico, *Manager, Marketing & Promotion*  
 Judy Klein Frimer, *Director, Guest Programming & Creative Services*  
 Danielle Scire, *Manager, Guest Programming & Creative Services*  
 John Chohey, *Assistant Director, Business Services Technology*  
 Robert DiCesare, *Manager, Point of Sale Systems*  
 Michael Cipriani, *Manager, Point of Sale Systems*  
 Janet Brahm, *Nurse Practitioner & Manager, Human Health Services*

**Restaurant Services**

Adam Millman, *Director*  
 John Lipari, *Supervising Chef*  
 Melanie Otero, *Manager, Dancing Crane Café*  
 Virgen Colon, *Unit Manager, Dancing Crane Café*  
 Michelle Madera, *Cashier, Dancing Crane Café*  
 Angella Modeste, *Manager, Bronx Zoo Satellite Restaurants*  
 Victorina Sierra, *Assistant Manager, Bronx Zoo Satellite Restaurants*  
 Cache Rodriguez, Immanuel Sidabutar: *Unit Managers, Bronx Zoo Satellite Restaurants*  
 Oliver Morton, *Storekeeper, Bronx Zoo Commissary*

Komlan Lonergan, Susan Manasse: *Assistant Project Manager*

**Global Service Center**

Carlos Hornillos-Dalisme, *Director – GSC And Grants Management*  
 Lillian Bonilla-Ortiz, *Finance Manager*  
 Raquel Diaz, *Finance Manager*  
 Lisa Muenichsdorfer, *Finance Manager*  
 Ileana Rios, *T&E Comp Plan Coordinator*  
 Canada Gahwita Karongo, *Africa Financial Coordinator*

**Grants Management Unit**

Laura Perozo-Garcia, *Deputy Director, Government Grants Compliance*  
 Jalila Aissi, *Grants Manager*  
 Jacklyn Bui, *Grants Manager*  
 Judith Lantigua, *Grants Manager*  
 Buenafe Manongdo, *Grant Coordinator*  
 Aaron Yuen, *Financial Analyst*

**Treasury & Investment Operations**

Sean Cover, *Director, Treasury and Investment Operations*  
 Bankanthony Ezeilo, *Assistant Director, Cash Control and Guest Services Accounting*  
 Vivian Villa, *Cashroom, Senior Clerk*  
 Stephanie Casado, Patrice Charlier: *Cashiers*  
 Danielle Li, *Accounts Receivable Manager*

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Assistance from WCS ornithologists and veterinarians has improved survival rates for scarlet macaw chicks in Guatemala's Maya Biosphere Reserve.

WE PRESENT HERE  
A LOOK AT OUR WORK  
IN NEW YORK CITY  
AND AROUND THE  
GLOBE IN 2012.







## ANIMAL CENSUS

(as of June 30, 2012)

Facility/Class	Species (On-site and In-on-loan)	Births (Includes non-viable)	Specimens (On-site and In-on-loan)
<b>BRONX ZOO</b>			
Mammals	169	317	1,536
Birds	266	96	1,496
Reptiles	152	25	499
Amphibians	49	1,671	2,531
Invertebrates	28	2,400	3,886*
Pisces	43	20	955
<b>TOTAL</b>	<b>707</b>	<b>4,529</b>	<b>10,903</b>

<b>CENTRAL PARK ZOO</b>			
Mammals	27	396	787
Birds	100	83	480
Reptiles	33	0	607
Amphibians	15	5	201
Invertebrates	6	57	179
Pisces	6	0	570
<b>Total</b>	<b>187</b>	<b>541</b>	<b>2,824</b>

<b>QUEENS ZOO</b>			
Mammals	28	6	83
Birds	53	48	368
Reptiles	9	0	59
Amphibians	1	0	11
Invertebrates	1	0	25
Pisces	5	0	13
<b>Total</b>	<b>97</b>	<b>54</b>	<b>559</b>

<b>PROSPECT PARK ZOO</b>			
Mammals	40	32	159
Birds	39	54	172
Reptiles	29	0	87
Amphibians	18	0	87
Invertebrates	5	0	224
Pisces	26	0	828
<b>Total</b>	<b>157</b>	<b>86</b>	<b>1,557</b>

<b>NEW YORK AQUARIUM</b>			
Mammals	6	1	16
Birds	1	1	16
Reptiles	8	1	34
Amphibians	4	0	11
Invertebrates	136	94	7,721
Pisces	271	167	4,270
<b>Total</b>	<b>426</b>	<b>264</b>	<b>12,068</b>

<b>Grand Total (all facilities)</b>	<b>1,574</b>	<b>5,474</b>	<b>27,911</b>
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\* Invertebrate numbers do not include approximately 58,000 Madagascar hissing cockroaches

## PAPER

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The Trustees of the Wildlife Conservation Society recommend that, for estate planning purposes, members and friends consider the following language for use in their wills:

“To the Wildlife Conservation Society (“WCS”), a not-for-profit, tax-exempt organization incorporated in the state of New York in 1895, having as its principal address 2300 Southern Boulevard, Bronx, New York 10460, I hereby give and bequeath \_\_\_\_\_ to be used as determined by WCS for the general purposes of WCS.”

In order to help WCS avoid future administration costs, we suggest that the following paragraph be added to any restrictions imposed on a bequest: “If at some future time, in the judgment of the Trustees of the Wildlife Conservation Society, it is no longer practical to use the income and/or principal of this bequest for the purposes intended, the Trustees have the right to use the income and/or principal for whatever purposes they deem necessary and most closely in accord with the intent described herein.”

If you wish to discuss the language of your bequest and other planned giving options, please contact the Office of Planned Giving at 718-741-1632.

For information on how you can support the Wildlife Conservation Society, please call our Global Resources Division at 718-220-5090. A copy of this annual report may be obtained by writing to the Office of the Chairman, Wildlife Conservation Society, 2300 Southern Boulevard, Bronx, New York 10460. In addition, a copy of WCS's annual filing with the Charities Bureau of the Office of the New York State Attorney General may be obtained by writing to the Charities Bureau, New York State Attorney General's Office, 3rd Floor, 120 Broadway, New York, New York 10271.



**WCS**

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**WILDLIFE CONSERVATION SOCIETY**

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