

Wildlife Conservation Society

ANNUAL REPORT 2011



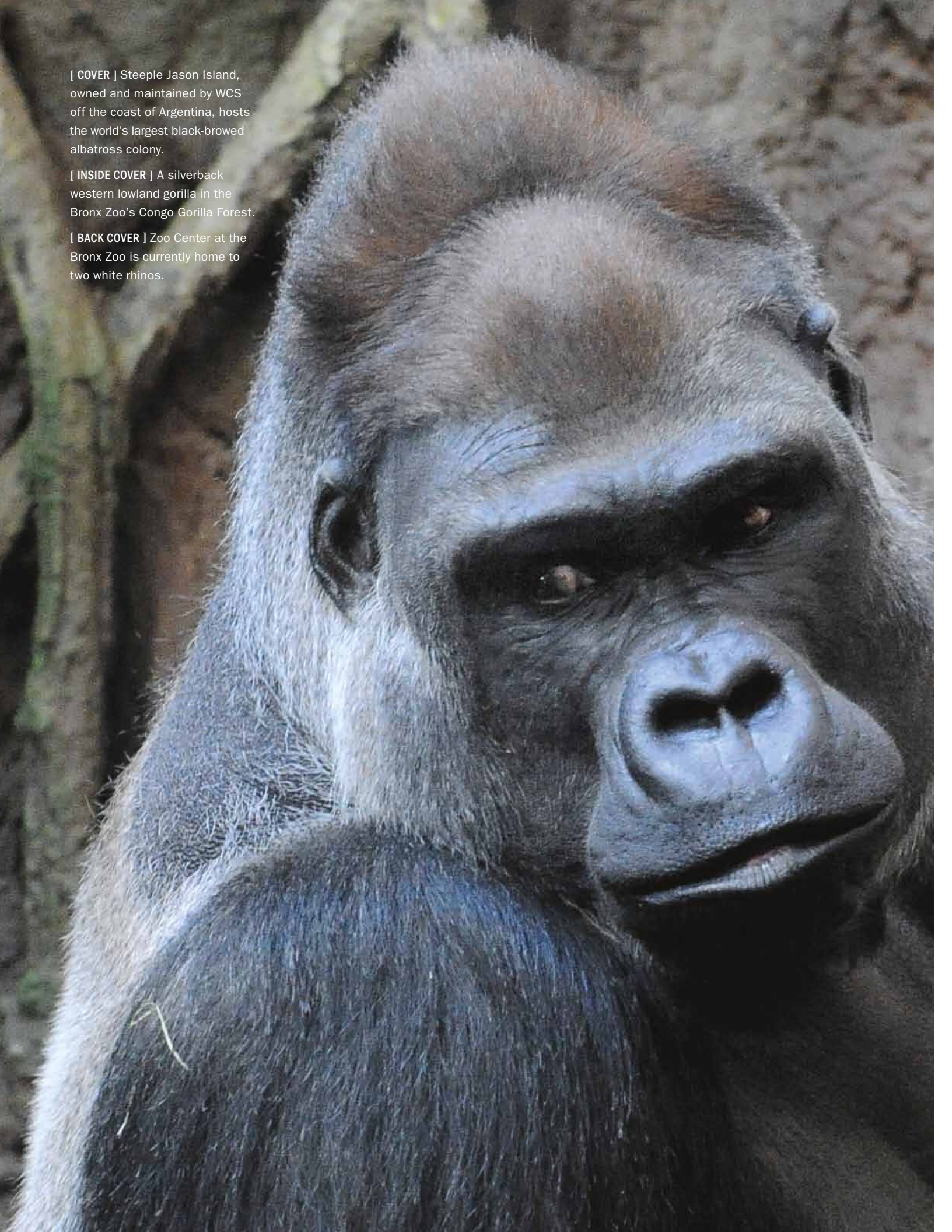
WILDLIFE
CONSERVATION
SOCIETY

SAVING WILDLIFE AND WILD PLACES

[COVER] Steeple Jason Island, owned and maintained by WCS off the coast of Argentina, hosts the world's largest black-browed albatross colony.

[INSIDE COVER] A silverback western lowland gorilla in the Bronx Zoo's Congo Gorilla Forest.

[BACK COVER] Zoo Center at the Bronx Zoo is currently home to two white rhinos.





ANNUAL REPORT 2011

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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[Left] Ward Woods and Steven Sanderson at the Central Park Zoo.

DEAR FRIENDS,

2011 has been a tumultuous year, even by the dramatic standards of the last decade. Macroeconomic and political crises have led to greater uncertainty in the world, making conservation more difficult. Leading investors have pointed out the incredible tax on nature imposed by human demands and the potential for neo-Malthusian collapse in the natural resource base. Volatile food and energy prices have changed the economics of commodity production, putting many fragile small producers at great risk. Governments have abandoned or softened environmental safeguards to save on expenditures. The rivers of the Western Amazon are threatened with an enormous network of dams, re-plumbing the largest alluvial network in the world. A bottomless appetite for ivory worldwide has led to the highest rates of poaching in Africa in a generation. Elephant losses have surged to levels not seen since the 1989 ivory ban.

Yet we end the year with great hope. There is much cause for optimism in the Global Tiger Initiative, the expansion of wilderness parks in Western Canada, the discovery of previously unknown populations of wildlife in the Bay of Bengal, South Sudan, and the Congo Basin. South Sudan has begun as a new country with clear devotion to the conservation of its wildlife and wild places. The Government of Tanzania has published an ambitious national elephant

conservation strategy. Cameroon, Nigeria, and the conservation community have designed a plan for the region's chimpanzees. The future is by no means lost.

WCS continues to show its unique capacity to integrate our century of wildlife husbandry, global wildlife health and field-based conservation, all in the service of wildlife and wild places. From our zoos and aquarium we are planning a coastal conservation strategy for the near-shore marine environment of New York, a Southeastern Asian strategy for freshwater turtles, a consortium effort to implement a worldwide flamingo conservation plan, and more. Around the world we hope to devise multi-scale regional strategies for Coastal Patagonia, East Africa and the Congo Basin, which promise to replicate the range- and species-wide commitments we have secured for tigers.

So, the quest for conservation in a world of use continues. The short-term economic and political difficulties must not discourage us, as we enter a new year that surely will provide us with new surprises and new mission opportunities.

Ward Woods
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[OPPOSITE] American bison
at the Bronx Zoo.

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[ABOVE] WCS's Board of Trustees at the Bronx Zoo.

QA

MELVIN GUMAL



From his dreams of working in the forestry industry to his efforts to protect some of Malaysia's wildest places, Melvin Gumal has constantly updated his outlook on conservation. As WCS country director for Malaysia since 2003, Melvin works to help elephants and farmers co-exist and to instill a respect for nature in the hearts of young people. Here, he discusses being introduced to confiscated wildlife by his mother, implementing WCS's new tiger source site protection strategy, and his chance sighting of the elusive golden cat.

WERE YOU INTERESTED IN WILDLIFE FROM AN EARLY AGE?

I suppose I was, without knowing it. My mum was a clerk in the Forestry Department in Sarawak when George Schaller came to conduct the first nest-count surveys for orangutans there. She would show us confiscated wildlife on the ground floor of her office. Among the animals often taken in as pets were lesser adjutant storks, orangutans, gibbons, and even clouded leopards. This was in the early to mid-1970s.

HOW DID YOU FIRST GET INVOLVED IN CONSERVATION WORK?

You could say that I was a convert. I studied forestry in Australia at the University of Melbourne, with the aim of working in the logging industry. There were a bunch of conservationists in the program. They'd go fishing, camping, swimming, and would volunteer to identify trees on the campus for students. They always released the fish they caught and were very passionate about their work. They argued with each other, but despite their differences would work together toward a common conservation goal. They took me out on the weekends, and I slowly started volunteering with them. When I came back home, international interest in conservation was rising. I was lucky enough to get a job riding on this crest of interest.

DESCRIBE WHERE YOU WORK IN MALAYSIA. WHAT ARE THE CONSERVATION CHALLENGES THERE?

We work in three principal areas. The Endau-Rompin Landscape is important for tigers, elephants, leopards, tapirs, otter civets, hairy-nosed otters, and sambar deer, among others. The Batang Ai/Lanjak Entimau Landscape is important for orangutans, clouded leopards, hornbills, and bay cats. The Upper Baram has a suite of animals, the most charismatic being Hose's civets and

clouded leopards. Working in the Upper Baram means that we look at several species of wildlife as indicators of the impact of logging.

WHAT ARE THE ELEMENTS OF EFFECTIVE CONSERVATION?

When I started, I had always thought that conservationists should keep up with science. But we can always learn and do the current science. In the last decade, my biggest challenge has been on the human side, pushing the political administration not only for legislation but also for its implementation. We can have laws, policies, or action plans, but if they're not implemented, they are mere book-ends. The challenge is to create redundancies to ensure that conservation happens. If it means getting management to have auditors who check on the work being done, we have to do it. If the administration won't act, we look for other avenues to get it done—including outside the system. We cannot afford to be negligent or apathetic. Our negligence and apathy means wildlife or habitat loss.

THE ILLEGAL TRADE IN IVORY HAS ESCALATED RECENTLY. HOW IS MALAYSIA CONFRONTING THAT PROBLEM?

In October and November 2011, we were asked by the government to help facilitate the MIST Patrolling Programme throughout Malaysia and also to work with government departments and agencies on an Inter-Agency Illegal Wildlife Trade Awareness. The latter involves all the major enforcement agencies in Malaysia and promises to help curb Malaysia's being a transit point for ivory trade. MIST is a programme that promotes greater efficiency in field enforcement patrols. The programme is conducted in a transparent and accountable manner and uses standardized protocols for data collection. The data can also be analysed and patrol routes and hot spots can be shown graphically.



There are three globally significant protected areas for tigers in Malaysia. There must be a will to ensure that these animals survive and flourish.

HOW ARE MALAYSIA'S LOCAL COMMUNITIES ENGAGED IN CONSERVATION?

Local communities often legally or technically own part of the lands where we conduct our field research and conservation interventions. If they're keen on conservation, they can be our eyes and ears to help us protect the wildlife and their habitat. However, if they're poachers (especially when the value of the wildlife is high), or if the wildlife causes great damage to their crops, this then becomes much more challenging. WCS-Malaysia is keen to engage communities to protect wildlife. For instance, in response to crop-raiding by elephants, we use low-cost sirens, low-cost fences, and watch-towers staffed by villagers. The siren fences function as a trip-wire alarm. Any intruding elephant that pushes against the wire will trip the circuit. The piercing loud sirens then wake up the sentries in the watchtowers, informing them where the breaks are. They then head out to the area where the elephants have intruded and chase them back with noise, lights, etc.

HOW ARE TIGERS FARING IN MALAYSIA CURRENTLY?

There are three globally significant protected areas for tigers in Malaysia: the Belum-Temengor Landscape, Taman Negara National Park, and the Endau-Rompin Landscape. Unfortunately, tigers are under siege in some of these landscapes due to poaching. In general, tigers are not doing great. But with better enforcement they will have a much better chance of survival and in fact could flourish. There must be a will to ensure that these animals survive. We have been successful in protecting tiger breeding areas in the Endau-Rompin. We are well toward achieving our targets in the state of Johor and making good progress in the state of Pahang.

WHAT KEEPS YOU PASSIONATE ABOUT YOUR JOB?

When I first came back to Sarawak from Australia, not a lot of local people cared about conservation. Animals were hunted, land was developed, and there was quite a bit of apathy. I wanted to confront the apathy and give conservation a chance. Through the years, the challenges have changed and I've needed to keep up with those changes. I had to go back to school and learn to adapt. Being in school again allowed me to interact with fellow-minded conservationists. That gave me a shot in the arm to want to do more. Now, I have my family, who ask the hard questions at dinner time, "What are you doing to save the wildlife?" I'm proud to have had a hand in creating new national parks (one of which includes my old Ph.D. field site), nurturing a greater passion for wildlife in young people, and creating a structure where they can have a conservation career and be recognized for their work.

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

Once in Endau-Rompin, I was out with my New York colleagues John Robinson and Peter Clyne, and we saw a golden cat jumping across the road during the daytime. I had never seen this rare animal before.



[OPPOSITE] Melvin Gumsal.

[ABOVE] The golden cat sighted by Melvin faces growing habitat pressure from deforestation.

WCS efforts have helped to expand blue iguana numbers in Grand Cayman.



WCS 2011 REVIEW:

ACHIEVEMENTS IN CONSERVATION

DISCOVERY

- WCS camera traps reveal a healthy snow leopard population in Afghanistan and are the first to photographically document the species in the country.
- A WCS census identifies a population of between 300-500 western lowland gorillas in Cameroon's Deng Deng National Park.
- WCS conservationists find a 211-foot natural stone arch in Afghanistan's highlands. The Hazarchishma Natural Bridge is the 12th largest of its kind.
- WCS conservationists help uncover how an African-crested rat uses a plant toxin to defend itself from predators.

FIRSTS

- Santa Fe Province regulates lead gunshot for the first time in Argentina, where WCS conservationists are studying the impact of toxic ammunition on wetland ecosystems.
- Climbers ascend Afghanistan's highest peak, Mount Nushaq, for the first time in decades in the wake of WCS efforts to nurture ecotourism in the area.
- WCS and partners conduct the first genetic study confirming that Cuban and American crocodiles interbreed in the wild.

INNOVATION

- WCS study uncovers a new approach of assessing coral reef health via fish biomass rather than coral cover.

- WCS and partners launch a web-based, open-access map to help governments and health agencies track emerging infectious diseases across the world.

NEW PROTECTED AREAS

- WCS marine conservationists help declare Fiji's Totoya Island reef "sacred" on World Oceans Day.
- Chile bans salmon farming off Tierra del Fuego, where WCS works with the government on coastal management.

SUPERLATIVES

- A WCS information sharing network tracks a wild dog 250 miles between Botswana and Zimbabwe, the longest journey recorded for this critically endangered species.
- A WCS genetic study finds that Marco Polo sheep in Afghanistan travel between three countries, over very steep, mountainous terrain.
- WCS camera traps capture a record number of jaguars in Bolivia, identifying 19 individual cats.

SECOND CHANCES

- The Bronx Zoo helps raise some 40 juvenile hellbenders, hatched at the Buffalo Zoo, in an effort to repopulate western New York with these large salamanders.

- Two injured bald eagles from Wyoming find refuge at the Bronx Zoo.
- Bronx Zoo vets help release blue iguanas back into the wild in Grand Cayman, where they nearly became extinct in 2002.
- WCS conservationists help the Laos Zoo successfully hatch 20 rare Siamese crocodiles for eventual release into the wild.
- WCS helps create conservation plan to protect the world's rarest chimp, the Nigeria-Cameroon chimpanzee.
- WCS and partners in Tanzania facilitate the return to the wild of three cheetahs captured for trade on the black market.

DEBUTS AND ANNOUNCEMENTS

- WCS's Rachel Graham wins the Whitley Gold Award for her shark conservation work in Belize.
- WCS opens a European office in Brussels, Belgium.
- The U.S. Postal Service "Save Vanishing Species" stamp makes its debut in support of international conservation programs.
- The New York Aquarium unveils its new Conservation Hall and Glover's Reef exhibits.
- WCS ecologist Jerry Jenkins receives multiple honors for contributions to science, sustainability, and quality of life in the Adirondacks, including the Harold K. Hochschild Award and the Adirondack Achievement Award.



Award-winning image of lioness in Queen Elizabeth National Park, Uganda, by WCS Staff Photographer Julie Larsen Maher.

THE 2011 WCS STORY

A CULTURE OF HUSBANDRY

ESSAYIST WENDELL BERRY HAS WRITTEN ABOUT A CULTURE OF HUSBANDRY, A PHILOSOPHY HE APPLIES TO “ALL PRACTICES THAT SUSTAIN LIFE BY CONNECTING US CONSERVINGLY TO OUR PLACES AND OUR WORLD.” WCS STAFF, WHETHER IN OUR PARKS IN NEW YORK CITY OR AT ONE OF OUR 500-PLUS PROJECTS AROUND THE GLOBE, BRING THAT NOTION DAILY TO THEIR WORK. EVEN IN CHRONICALLY TROUBLED REGIONS, SUCH AS AFGHANISTAN AND SOUTH SUDAN, OUR STAFF REMAIN UNDAUNTED AS THEY PRACTICE THIS CULTURE OF HUSBANDRY TO DIMINISH CONFLICT, PROMOTE CONSENSUS, AND PROTECT WILDLIFE AND HUMAN POPULATIONS.

In Afghanistan, WCS and its compatriots have shown how the protection of wildlife and wild places can be a source of peace and stability, even in time of war. Building on the creation of Band-e-Amir, Afghanistan’s first national park, WCS conservationists helped lead an expedition this year to the top of Mount Nashaq, which re-opened to the public after decades of regional conflict. Though Afghanistan’s future lies in the hands of greater forces than ours, conservation has lit a lamp of hope.

In South Sudan, 2006 aerial surveys by WCS conservationists revealed that a rich variety of charismatic species and the world’s second largest wildlife migration had survived a decades-long civil war. WCS conservation assessment activities accorded us a kind of diplomatic status to work with the provisional government. As South Sudan gained independence in 2011, WCS celebrated its efforts to integrate wildlife conservation, sustainable natural resource management, and environmentally friendly ecotourism into one nation-building process.

Elsewhere, conservation connects us to wild places and the world across national boundaries. There can be no starker example than the multi-billion dollar illegal wildlife trade. Its practitioners are violent enemies of conservation and stanching its flow has become a strategic priority in our global efforts.

At the same time, our wildlife health program has now converged with international public health priorities, as the importance of zoonotic diseases to human and wildlife wellness are more broadly recognized.

The WCS narrative for 2011 includes our work in 65 nations, in all the world’s oceans, and at our local zoos and aquarium. Many of the stories that follow show the deep ties between our park and field efforts. Taken together, this work powerfully demonstrates Wendell Berry’s great insight that a true culture of husbandry is one in which people and wild places are intimately connected.

WORKING THROUGH CONFLICT/AFGHANISTAN

2011 was a busy year for WCS’s programs in Afghanistan. Despite the political conflict that has engulfed parts of the nation for many years, WCS conservationists documented the survival of several important species in the mountainous forests of Nuristan. In the only study to examine the Afghan conflict’s impact on wildlife since 1977, conservationists confirmed the presence of palm civets (a first for the country), Asiatic black bears, gray wolves, markhor goats, and leopard cats. The USAID-supported study mirrored results from other parts of Afghanistan

showing that wildlife continues to survive despite deforestation, habitat degradation, and decades of political instability.

WCS conservationists have discovered a surprisingly healthy population of rare snow leopards living in the mountains of the Wakhan Corridor. Camera traps set by community rangers trained by WCS confirmed the rare cat's presence. While the snapshots offer new hope for the viability of snow leopard populations in Afghanistan, this animal continues to face many threats, such as poaching for the animals' beautiful pelts and the illegal pet trade. WCS is applying a community-based management approach to protect this wild cat. The rangers patrol and enforce local and national laws against poaching of the snow leopard and its prey (ibex and Marco polo sheep). Also in the Wakhan, WCS made progress toward two new protected areas, to be co-managed by local communities. The areas will conserve snow leopards and other wildlife found among these mountains.

In yet another exciting story out of Afghanistan, WCS helped to confirm that Mount Noshag, Afghanistan's highest peak, is safe for the international mountaineering community. Regional instability had kept the mountain closed for decades. Located in the Hindu Kush Mountains, Mount Noshag rises close to 24,580 feet above sea level and hosts a variety of species, including Marco Polo and urial sheep, ibex, and snow leopards. To raise awareness and demonstrate the accessibility of the peak, a team that included WCS conservationists led an expedition to the summit.

Finally, in Afghanistan's central highlands, WCS conservationists discovered a massive stone arch spanning 210 feet. Named the Hazarchishma Natural Bridge, the spectacular geological formation is the 12th largest natural arch in the world.

ACHIEVING RESULTS FOR GORILLAS/ DEMOCRATIC REPUBLIC OF CONGO

A census team led by the Wildlife Conservation Society and the Institut Congolais pour la Conservation de la Nature (ICCN) in the Democratic Republic of Congo announced in April encouraging news from this nation plagued by warfare and insecurity: a small population of Grauer's gorillas had survived and increased since the last census. The census, conducted in late 2010 in the highland sector of Kahuzi-Biega National Park, revealed the presence of 181 individual Grauer's gorillas, up from 168 individuals detected in the same sector in 2004.

A "cousin" to the more famous mountain gorilla, the Grauer's gorilla is the largest subspecies of gorilla in the world, growing up to

500 pounds. The Grauer's gorilla (also known as the eastern lowland gorilla) is the least known subspecies, due in large part to the 15 years of insecurity in the eastern Democratic Republic of Congo. The gorilla is listed as "Endangered" on the International Union for Conservation of Nature's (IUCN's) Red List and may number fewer than 4,000 individual animals.

"We had several close calls with armed militias during the survey," says Deo Kujirakwinja, WCS's Albertine Rift Coordinator in DRC. "Thankfully, no one was hurt, and our census result is positive news for the conservation community."

FIGHTING WILDLIFE TRADE/INDONESIA

In February, 2011, Indonesian authorities arrested a suspected illegal wildlife trader and recovered hundreds of items, including elephant ivory, sun bear parts, tiger bones, skins, and teeth. The suspect had been trading from an art shop and using the Internet to advertise illegal wildlife parts to domestic and foreign buyers. Wildlife items from across Indonesia were shipped using courier services. Working with WCS's Wildlife Crime Unit and local partners, the Indonesian Police and the forestry department's Directorate-General for Forest Protection and Nature Conservation (PHKA) conducted the raid.

The Internet is a growing medium for the sale of illegal wildlife parts and with 30 million users in Indonesia, Indonesia's illegal wildlife cyber-trade will likely increase. The raid was the result of an investigation, conducted by WCS and partners, into Web advertisements for protected wildlife that originated in Indonesia. The investigation identified a number of suspects and the eventual arrest represented the start of effective enforcement by the authorities.

The raid shows the importance of working closely with local law enforcement in the fight against the illegal wildlife trade. Hunters kill tigers to supply the demand for tiger parts, desired as souvenirs, as talismans, and in traditional medicine. Elephants are killed for their ivory, used in jewelry and ornaments. Sun Bears are killed for their gall bladders and bones, used in traditional Chinese medicine. While the illegal wildlife trade threatens iconic animals like tigers, bears, and elephants and many other protected species of animals and plants, the Jakarta arrest demonstrates how Indonesia has become a leader in safeguarding wildlife.

SAVING SIAMESE CROCODILES/LAO PDR

In 2011, WCS worked with local communities, the government of Lao PDR, and partners to successfully hatch a clutch of 20 Siamese

crocodiles—a species threatened across its range by hunting, habitat fragmentation and loss, and other factors. Classified as “Critically Endangered” by IUCN, the Siamese crocodile grows up to 10 feet in length. The species has been eliminated from much of its former range through Southeast Asia and parts of Indonesia.

Launched in 2008, the Crocodile Resource Management Plan applies community-based approaches to crocodile conservation as a means of protecting both crocs and the larger landscape. The project’s first phase focused on surveys of crocodiles, the wetlands they inhabit, and the livelihoods of local communities in Lao PDR’s Savannakhet Province. Survey teams located small numbers of crocodiles in several sites in the province’s river systems and wetlands. Eggs from wild nests were transported to the Laos Zoo, where they were artificially incubated in order to boost the number of healthy hatchlings. The project will release the crocs as second-year juveniles, when the young crocs are large and robust enough to survive in the wild.

The baby crocodiles represent a success for a new program that works to simultaneously save the Siamese crocodile, the Savannakhet wetlands and the biodiversity living within them. Supported by the Savannakhet Province Agriculture and Forestry Office and funded by MMG, a mining company with operations in the province, this integrated project promotes the conservation of an entire landscape by highlighting the critical connections between an endangered species and local livelihoods. Communities provide input and will help promote the recovery of this threatened crocodile, upon whose habitat many incomes rely.

PROTECTING BOG TURTLES/NEW YORK STATE AND MASSACHUSETTS

In the spring of 2011, WCS health experts from the Bronx Zoo responded to a crisis facing one of North America’s smallest turtles. Bog turtles, which grow to just 4.5 inches in length, live in meadows and marshes, at woodland edges, and, true to their name, in bogs. Wildlife managers

[BELOW] WCS vets work to better understand health threats to North America’s diminutive bog turtle.





[ABOVE] Seven Chinese merganser ducklings hatched in 2011 at the Central Park Zoo.

working in a few known bog turtle habitats in the Northeast reported higher mortality rates for these threatened reptiles in recent years. In New York and Massachusetts, where the turtles are now considered endangered, WCS health staff went into the field to investigate potential culprits.

WCS veterinarians are widely recognized as turtle health experts for their work in the field and within our zoos. The team was led by Bonnie Raphael (see Q&A, page 76), head of wildlife medicine for WCS. Raphael and her colleagues searched for and examined the tiny bog turtles, which weigh a mere four ounces. To get an idea of the population's health, the check-ups included tests of the turtles' blood and feces, swabs of their cloacae (which includes part of their intestinal tract), and in some cases, shell biopsies. Experts hope this will pinpoint whether the recent losses stem from infectious diseases, environmental disturbances, or other factors.

Although there are no reliable population estimates for bog turtles, the species is protected at the state, national, and international level. WCS has been studying and working to protect the species since 1973. A bog turtle research project conducted by Alison Whitlock, northeast

region coordinator for the U.S. Fish & Wildlife Service, was one of the first conservation initiatives funded by WCS's North America program in 1995.

WORKING TOWARD RECOVERY OF BLUE IGUANAS/GRAND CAYMAN

Health experts from the Bronx Zoo traveled to the Caribbean island of Grand Cayman in 2011, as they have for the last 10 years, to assist efforts to save the blue iguana from extinction. This work represents a rarity in conservation: a chance for the complete recovery of a species.

The Grand Cayman blue iguana is the island's largest native species, growing to more than five feet in length and sometimes weighing more than 25 pounds. The iguana formerly ranged over most of the island's coastal areas and the dry shrub lands of the interior, before becoming endangered through a combination of habitat destruction, car-related mortality, and predation by dogs and cats. In 2002, estimates placed the entire island's wild iguana population at less than 24 individuals.

Since that time, the Blue Iguana Recovery Program—a consortium of local and international partners—has successfully released more than

500 captive-bred reptiles. Recovery efforts have focused on three reserves. After their hatching and two years or more in a captive breeding facility, each iguana receives a complete health assessment. The iguanas return to the wild after the lab results give them a clean bill of health.

In a few years, Program Director Fred Burton expects the population to reach its recovery goal of 1,000 iguanas in the three protected areas. The program will then monitor the iguanas to ensure they reproduce well enough to maintain the wild population.

HATCHING ENDANGERED CHINESE MERGANSERS/CENTRAL PARK ZOO

Seven critically threatened Chinese merganser ducklings hatched at the Central Park Zoo in 2011. The hatchlings were the first of this species, also known as scaly-sided mergansers, within a North American zoo. The Central Park Zoo maintains the largest public collection of sea ducks and the continent's only zoo-kept Chinese mergansers, which are native to eastern Asia.

The IUCN Red List considers the Chinese merganser "Endangered." Their estimated population lies between 1,000 and 2,500 and is falling due to habitat destruction, pollution, illegal hunting, and human disturbance of breeding territory. Jeff Sailer, Director of City Zoos for WCS, hopes that by breeding the ducks in captivity, we may be able to ensure a future for this species in the wild.

Mergansers are one of several waterfowl species (including storks, swans, and flamingos) that are found in WCS's New York City zoos and aquarium. With these hatchlings, WCS and its Central Park Zoo demonstrate the vital role that zoos play in wildlife conservation.

RAISING HELLBENDERS/BRONX ZOO

The Bronx Zoo is working to save from extinction one of the world's largest species of salamander, the two-foot eastern hellbender. Native to western New York, hellbenders—also known as devil dogs, Allegheny alligators, and snot otters—face threats such as habitat loss and alterations (especially dams), disease, pollution, and over-collection for use as fish bait and for the pet trade. Studies show there are insufficient numbers of young hellbenders to sustain the species in the wild.

Working with partners, the Bronx Zoo is raising 41 juvenile hellbenders. The amphibians hatched at the Buffalo Zoo in October 2009 from eggs collected by the New York Department of Environmental Conservation from the Allegheny River drainage. The animals now live in an off-exhibit, bio-secure room in the

Bronx Zoo's Amphibian Propagation Center where they will remain until they are mature enough for their release back into the wild in 2013. Adult hellbenders face fewer predators, allowing the "graduates" of our program to better survive and thrive in western New York.

TRACKING EMERGING INFECTIOUS DISEASES/GLOBAL INTERNET-BASED MAP

In February, 2011, WCS health experts and partners launched an Internet-based, open-access map to help governments and health agencies track emerging infectious diseases across the world at HealthMap.org. The map is a project of PREDICT, a global early warning system created in 2009 as part of the USAID Emerging Pandemics Threats Program. Designed to anticipate and prevent the spread of emerging infectious diseases from animal to human populations, PREDICT delivers real-time intelligence from a multitude of sources, providing users in 20-plus countries a comprehensive view on the current global state of infectious diseases.

HealthMap.org enables governments and allied organizations worldwide to implement a more holistic approach to detecting emerging diseases and disseminate critical information on the emergence of pathogens to health officials around the world. The new website uses an automated process to monitor more than 50,000 Internet sources an hour. The data helps health experts implement and modify PREDICT field surveillance activities in places where wildlife and humans come together. As a part of our global health work, WCS studies the international illegal trade in wildlife and wildlife parts and the role it may play in the spread of infectious diseases.

LEADING POLICY REDUCING LEAD POLLUTION/ARGENTINA

WCS research on the impact of lead pollution on wildlife and human communities led one province in Argentina to limit the amount of lead ammunition allowable for hunting waterfowl. In Argentina, thousands of pounds of spent lead ammunition are deposited into wetland ecosystems, where the metal is ingested by waterfowl foraging for food.

Although lead causes severe adverse health effects in animals and people and can permanently pollute the environment, regulating its use in ammunition has proven difficult. The United States banned lead for waterfowl hunting in 1991, but lead remains common in the U.S. and throughout the world for upland hunting, shooting sports, and fishing tackle. The regulation in Argentina, the first action of its kind in the

nation, requires hunters in Santa Fe Province to reduce usage of lead shot by 25 percent.

Working in collaboration with several of Argentina's national universities, WCS has been examining the density of lead ammunition pellets in ducks' stomachs and in the wetlands where hunting occurs. They have found significant levels of the metal in the blood, stomachs and

tissues of the animals, as well as in the soil and vegetation. Provincial government officials in Santa Fe used this data to successfully push for policy change.

Both hunters and local businesses rely on hunting revenues, and they can be strong advocates for conservation. While conservationists emphasize that the legislation's success may rely on its implementation, Santa Fe serves as a model for other provinces of Argentina.



PROTECTING WORLD'S MOST ENDANGERED CHIMPANZEE/ NIGERIA-CAMEROON

The world's most endangered chimp got a much-needed boost of support in June, 2011. WCS conservationists joined government officials, scientists, and other groups in designing an action plan to bolster the Nigeria-Cameroon chimpanzee's ranks. The subspecies, first identified in 1997, is restricted to pockets of forested habitat in Nigeria and Cameroon. Between 3,500 and 9,000 remain in the wild, clinging to a region with high human population density and plagued by habitat destruction, fragmentation, and poaching. Such factors have contributed to the extinction of the chimp across much of its former range.

The action plan calls for region-wide efforts, including improved trans-boundary collaboration

[ABOVE] Globally organized crime syndicates are penetrating secure wildlife populations.

WCS: ORGANIZED CRIME WIPING OUT WILDLIFE

A paper by noted WCS conservationist Elizabeth Bennett was released in 2011, emphasizing that sophisticated illegal trade in wildlife parts conducted by organized crime, coupled with antiquated enforcement methods, are decimating the world's most beloved species – including rhinos, tigers, and elephants – on a scale never before seen.

The paper, published June 7, 2011, on the online issue of the journal *Oryx*, says that much of the trade is driven by wealthy East Asian markets that have a seemingly insatiable appetite for wildlife parts.

According to the report, organized crime syndicates using sophisticated smuggling operations have penetrated even previously secure wildlife populations. Some of the elaborate methods include: hidden compartments in shipping containers; rapidly changing smuggling routes; and the use of e-commerce, the locations of which are difficult to detect.

"We are failing to conserve some of the world's most beloved and charismatic species," said Bennett, who began her career in conservation more than 25 years ago in Asia. "We are rapidly losing big, spectacular animals to an entirely new type of trade driven by criminalized syndicates. It is deeply alarming, and the world is not yet taking it seriously. When these criminal networks wipe out wildlife, conservation loses and local people are denied the wildlife on which their livelihoods often depend."

For example, South Africa lost almost 230 rhinoceroses to poaching from January to October, 2010; and fewer than 3,500 tigers roam in the wild, occupying less than 7 percent of their historic range.

Bennett says an immediate short-term solution to stave off local extinction of wildlife is the enforcement of wildlife laws, and the commitment of resources necessary to supersede those of the criminal organizations involved.

and law enforcement, conservation research, participation and support of local people, recruitment and training of rangers, and support for community livelihoods. Implementation of the plan would protect more than 95 percent of the remaining Nigeria-Cameroon chimpanzees over the next five years. The strategy would also safeguard other primate species sharing the same habitat, such as the critically endangered Cross River gorilla, Preuss's monkey, and Preuss's red colobus.

HIGHLIGHTING THREATS TO WILDLIFE MIGRATIONS/NORTH AMERICA

In October, a WCS paper called attention to an emerging crisis: the loss of great wildlife migrations in the western United States. The effects of climate change—including the timing of insect emergences and flower blooms and the amounts of rainfall and snowpack—are affecting the migrations of several species. The report identified increased development, habitat loss, and human-made obstacles as other common threats to migrations.

Of the five mammal migrations profiled in the report, three involve separate caribou populations that spend a majority of their lives in Alaska. For caribou, deeper winter snow and increased insect harassment will mean less access to food, decreased body fat, less reproductive success, and increased vulnerability to predators. Other terrestrial migrations profiled include those of pronghorn between northern Montana and Saskatchewan, as well as mule deer and pronghorn in western Wyoming. Key threats to these migrations include cattle grazing, agriculture, fencing, highways, railroads, housing development, and energy development.

Threats to aerial (primarily bird) migrations include loss of grassland habitat, exurban development, and the spread of invasive plant species into nesting sites. The report highlighted additional stresses on pollinator bat populations, including fragmentation of desert habitat and herbicides. The paper credits the advent of new technologies like GPS collars and geolocators for the great strides made recently in understanding animal movements and the impediments to migration. GPS collars affixed to pronghorn helped WCS and the National Park Service document the longest known mammal migration corridor in the contiguous United States. The Path of the Pronghorn became the first federally designated migration corridor in 2008.

The study drew the attention of conservationists, lawmakers, and the public to these rapidly disappearing ecological wonders. By demonstrating the tremendous cultural, economic, and biological value of wildlife migrations,



WCS fosters support in the U.S. and Canada for on-the-ground activities and policy initiatives necessary for their conservation.

INSPIRING AVIAN CONSERVATION/BRAZIL

This year WCS helped publish *Birds of Brazil*, an illustrated book showcasing 740 species of birds within the Pantanal and the Cerrado. The regions are among the world's largest freshwater wetlands and the most endangered grassland ecosystems, respectively. The work was the brainchild of the late José Márcio Ayres, former director of WCS's Brazil program and a legendary conservationist who devoted his life to protecting Amazonian ecosystems. John A. Gwynne, WCS's Emeritus Chief Creative Officer, served as one of the authors and artists of the guide. Co-authors included famed neo-tropical bird expert Robert Ridgely, equally renowned bird artist Guy Tudor, and Brazilian ornithologist Martha Argel.

Published in Portuguese and English, the series uses graphics, illustrations, and text to highlight the bird life of some of the greatest wild places on Earth. More importantly, the guide strives to inspire a nation of potential conservationists to enjoy Brazil's vibrant ecosystems and natural heritage. The first in a series of five regional field guides (to include more than 1,830 known species), *Birds of Brazil* promotes conservation through the passion of birding. In addition to sparking increased environmental awareness in Brazil, the book aims to stimulate ecotourism in the nation's parks and wild places for the benefit of creating jobs and boosting local economies.

[ABOVE] A new bird guide, *Birds of Brazil*, features the contributions of WCS Emeritus Chief Creative Officer John Gwynne.



CONFRONTING PENGUIN FEATHER LOSS/SOUTHERN HEMISPHERE

In the spring of 2011, WCS conservationists confronted a perplexing wildlife mystery: penguin chicks in the Southern Hemisphere are losing their feathers. The appearance of “naked” penguins—afflicted with what is known as feather-loss disorder—in colonies on both sides of the South Atlantic in recent years has left scientists puzzled.

First observed at a rehabilitation center in Cape Town, South Africa in 2006, the disorder affected African, or black-footed, penguins. The featherless chicks took longer to grow to a size deemed suitable for release into the wild but eventually grew new feathers.

In 2007, on the other side of the South Atlantic in Argentina, conservationists from WCS and researchers from the University of Washington observed the disorder in the chicks of wild Magellanic penguins, which are closely related to African penguins. These affected chicks grew more slowly than feathered chicks. Featherless chicks were smaller in size and weight, likely due to the increased energy spent in thermoregulation in the absence of insulating feathers and down.

So far, conservationists have identified several possible causes, including pathogens, thyroid disorders, nutrient imbalances, and genetics. As oil pollution and climate change increasingly compromise penguin habitat, WCS conservationists work hard to keep disease from an already long list of threats that penguins face.

DEBUTING A RENOVATED CONSERVATION HALL AND GLOVER'S REEF/NEW YORK AQUARIUM

The New York Aquarium unveiled in 2011 its renovated Conservation Hall and Glover's Reef. The spectacular 4,000-square-foot building is now home to 100-plus species of aquatic animals—from corals and eels to African freshwater fish. The renovations are the first steps of A SEA CHANGE, a 10-year, \$150 million-plus, public-private capital initiative that will transform the aquarium and contribute to the re-birth of Coney Island in Brooklyn.

The refurbished exhibits give visitors a glimpse into some of the world's most fragile underwater ecosystems. The new Conservation Hall contains three habitats: The Coral Triangle of the Indo-Pacific, Africa's Great Lakes, and Brazil's Flooded Forest. Adjacent to these exhibits is a 167,000-gallon tank that replicates Belize's Glover's Reef coral system, where WCS has been hard at work for several years.

Conservation Hall is a captivating attraction that serves as an opportunity for visitors to learn about marine science. The Malagasy Fish Lab uses compelling graphics to explain how the aquarium staff maintains several species of Madagascar fish that are now extinct in the wild. The lab is a fully functioning research space where visitors see our keepers at work.

Graphics and a new interactive coral kiosk provide information about environmental threats facing reef systems, such as global warming and pollution. By putting guests in close contact



with some of the world's most exotic marine animals, WCS hopes to inspire aquarium visitors to become wildlife stewards and advocates for ocean-based and freshwater ecosystems.

PRESERVING THE CROWN OF THE CONTINENT/NORTH AMERICA

The Crown of the Continent between the U.S. and Canada holds dramatic landscapes, pristine water sources, and diverse wildlife. The ecosystem stretches more than 250 miles along the Rocky Mountains from Glacier National Park in Montana north to the Canadian Rockies. Since 1910, when Glacier was established, citizens and government representatives have worked hard to protect the Crown. Unfortunately, those efforts may not be keeping up with emerging threats like climate change according to a WCS study assessing the conservation value of roadless, public lands there.

The investigation synthesized the work of 30 biologists and close to 300 scientific papers examining how climate change and other pressures may be affecting species in 1.3 million acres of the Crown. The resulting report highlighted the importance of certain areas for habitat connectivity and for the future of iconic species, such as wolverines, trout, bighorn sheep, and grizzly bears. The study mapped the species' distribution and identified their current and future habitats and the connections between them.

To guarantee the most secure protection for local species, WCS proposed that 880,000 acres

(67 percent of the roadless lands) be added to the National Wilderness system. Another 310,000 acres (23 percent) would be managed as 'backcountry' for non-motorized recreation and conservation. The report is a first and essential step in conserving one of the world's greatest remaining wild landscapes.

ALERTING THE WORLD TO THE PLIGHT OF FOREST ELEPHANTS/CENTRAL AFRICA

New development and access points are threatening the survival of African forest elephants, according to WCS conservationists and partners. The construction of roads and infrastructure in the Central African countries where forest elephants live typically fails to coincide with adequate anti-poaching efforts. Thus these majestic, intelligent, and highly sociable animals have been decimated by attacks in recent years, putting the elephant's very future in peril.

The WCS study looked at distances to settlements, roads, and rivers in five different national parks in Cameroon, Central African Republic, Gabon, the Republic of Congo, and the Democratic Republic of Congo. Building upon previous work, the conservationists systematically counted and mapped the location of elephant dung across large landscapes. The counts provide a good general estimate of the elusive animal's numbers. To protect forest elephants, WCS recommends the strategic development of the central African interstate highway system to maximize benefits to people

[OPPOSITE PAGE]
WCS conservationists work to better understand feather-loss disorder in Magellanic penguin chicks.

[ABOVE LEFT] WCS staff grow a variety of exotic coral at the New York Aquarium.

WCS'S BRONX ZOO TEEN EDUCATION PROGRAM WINS TOP HONORS

In 2011, the Association of Zoos and Aquariums awarded its top honor for excellence in diversity in the field of education to the Bronx Zoo's Wildlife Career Ladder program for Bronx teens. The zoo's education department received the Angela Peterson Excellence in Diversity Award at a ceremony at the 2011 AZA Annual Conference in Atlanta, Georgia. The award recognizes the most significant innovative, productive, far-reaching program to promote diversity in institutions throughout AZA.

Established in 2008-09, the Wildlife Career Ladder is a multi-year program that engages minority students from the beginning of their sophomore year in high school to their junior year. Approximately 25 young people participate in the program at any given time. Many of these students come from some of the lowest income communities in the country.

The Wildlife Career Ladder program includes afterschool, weekend, and summer components during which students receive instruction in topics such as animal health, wildlife science, and conservation biology. An Explainers Program trains students to interpret exhibits for guests at the Bronx Zoo. The Career Ladder Internship places students in part-time internships across WCS, in areas ranging from Environmental Education and Public Affairs to Information Technology and Business Services.

For more than 80 years, the WCS Education Division has advanced science education and ecological literacy to change attitudes and cultivate an informed community of conservation stewards. The division serves more than 100,000 students and 3,000 teachers annually and works across New York City to provide science, technology, engineering, and math education to underserved students. WCS partners with the Urban Assembly School for Wildlife Conservation in the Bronx and offers subsidized and free programs to thousands of students from across the city each year.

while reducing ecological risks, such as habitat fragmentation and poacher access points.

Increased access to Central African forest elephants appears to have been a driving force for a wave of brazen new attacks by ivory poachers in 2011. Last April in Gabon, aerial surveys revealed the slaughter of 30 elephants in the Wonga Wongué Reserve, only miles outside of the nation's capitol of Libreville. Desired in Asia for use in Chinese carving and statuary, the hard ivory of forest elephants is particularly valued in Japan for use in traditional seals and as plectrums for stringed instruments. WCS research suggests that time is running out to expand local infrastructure in a way that minimizes wildlife impacts.

STUDYING DISTEMPER IN TIGERS/ BRONX ZOO AND RUSSIA

Canine distemper infects domestic dogs worldwide, as well as wild species such as lynx and bobcats in Canada, Baikal seals in Russia, lions in the Serengeti ecosystem in Africa, and raccoons in the United States.

In September, a team of health pathologists from the Bronx Zoo, working with Russian veterinary colleagues, conducted diagnostic work to better understand how this disease is now impacting Amur tigers. Working at WCS's Molecular Diagnostic Laboratory in the Wildlife Health Center at the Bronx Zoo, the conservationists used DNA sequencing and other tests to confirm and characterize the infection in two wild Amur tigers from the Russian Far East.

One of the tigers—Galia, studied by WCS conservationists for close to a decade—had walked into a village, displaying abnormal neurologic signs. Appearing gaunt and seemingly unfazed by the new environment, the tiger searched for dogs as an easy meal. Police shot her after several capture attempts failed. In November 2003, a similar event occurred when an otherwise healthy looking wild tiger walked incautiously into another village. Preserved tissue samples from the tigers tested positive for canine distemper. Whether the tigers picked up the virus from local dogs is unknown. Canine distemper in domestic dogs is controlled through vaccination. In Africa, massive vaccination campaigns of dogs in villages surrounding the Serengeti have appeared effective in reducing the disease's impact on lions.

With poaching and habitat loss greatly threatening tigers, relatively little research exists on diseases that afflict this animal. The canine distemper diagnosis provides important genetic confirmation of this illness, which appears to be a relatively new threat. The health team

presented its results at a widely-attended international symposium on wildlife diseases in the Russian Far East city of Ussuriysk. The symposium underscored the growing recognition of the importance of the health sciences to successful wildlife conservation efforts.

UNITING TO PROTECT THE WORLD'S 25 MOST ENDANGERED TURTLES/GLOBAL

Decimated by habitat loss and illegal hunting, many turtle species are likely to go extinct in the next decade unless drastic protection measures are taken, according to WCS conservationists in a 2011 study. A report by the Turtle Conservation Coalition, which includes WCS, the Turtle Survival Alliance, and Conservation International among other groups, identified the 25 most endangered turtle and tortoise species in the world, some of which number fewer than five individuals.

Of the 25 species, 17 are native to Asia, 3 to South America, 3 to Africa, 1 to Australia, and 1 to Central America and Mexico. The list includes “Lonesome George,” the only remaining Abington Island giant tortoise. Though scientists disagree as to whether he is a recognized species or a subspecies of Galápagos tortoise, all agree that he is the last of his kind. Another species on the brink is the Yangtze giant soft shell turtle, with just four known individuals. WCS veterinarians have been working with Chinese officials and other partners to breed the last known male-female pair of these giant turtles, which currently reside at China’s Suzhou Zoo.

What is driving turtles to extinction? Illegal hunting in Asia is a particular problem. Hunters are trapping and killing turtles unsustainably throughout the continent for food, pets, and traditional medicines. The international trade in turtles and turtle products affects every tortoise and turtle species in Asia. In just one market in Dhaka, Bangladesh, close to 100,000 turtles were butchered in the past year for consumption during a religious holiday. WCS knows of at least three other such markets within the city. Enforcement of existing trade laws, habitat protection, and captive breeding help bolster turtle populations and are essential to preventing the extinction of many of these species.

PROTECTING A CRITICAL NURSERY FOR THE WORLD'S BIRDS/ALASKA

A WCS-led study released last March revealed how critically important Alaska’s Teshekpuk Lake region is to tens of thousands of birds breeding in the western Arctic during its brief but productive summers. The four-year study was the first to look at the full range of bird



species from around the world that descend on the area. Results showed that the landscape contains some of the highest nesting bird densities and nest productivity across Alaska’s Arctic, indicating that the Teshekpuk area is a crucial nursery for global bird populations. This is especially noteworthy because Teshekpuk Lake falls within Alaska’s National Petroleum Reserve (NPR-A).

The area around the lake has long been recognized as an important wildlife site. Tens of thousands of geese migrate to the lake to molt in the summer and a 70,000-strong caribou herd—essential to native Alaskans for subsistence hunting – calves its young there. The study site exists within a portion of the petroleum reserve that was temporarily withdrawn by the Bureau of Land Management (BLM) from oil and gas leasing in July of 2010 over concerns for wildlife. Currently, the BLM is evaluating how best to balance wildlife protection and future energy development in the NPR-A. The WCS study makes a strong case for long-term protection of the area.

ADVANCING ANIMAL HUSBANDRY SCIENCE/BRONX ZOO

After more than a year of careful animal husbandry science by the Bronx Zoo’s mammal curators, the zoo’s okapi family grew by one. The calf, named M’bura, was born on June 2, 2011 and made her public debut in the Congo Gorilla Forest’s Robert Wood Johnson Jr. Okapi Jungle and Ituri Field Camp.

[ABOVE] WCS gives local students a chance to gain experience in wildlife science.

Okapis are closely related to giraffes and native to the Ituri Forest in the Democratic Republic of Congo (DRC). They live in a large range on both sides of the Congo River. Listed as “Near Threatened” by the IUCN, they are susceptible to habitat loss and human encroachment. Wild populations are relatively stable in protected areas, however, owing in part to the work of the Wildlife Conservation Society to protect okapi and other wildlife in DRC’s Okapi Faunal Reserve and Maiko National Park.

The Bronx Zoo has a long tradition of excellence in animal husbandry science and the arrival of the most recent okapi calf was a testament to that leadership. In 1992, an okapi breeding program was initiated, resulting in the birth of 12 calves in the last 20 years. Few zoos have achieved comparable success with the species. There are approximately 146 okapi in zoos around the world, and the IUCN estimates that 10,000 to 35,000 remain in the wild.

Jim Breheny, WCS Zoos and Aquarium Executive Vice President & General Director and Bronx Zoo Director, notes, “The Bronx Zoo’s okapi program has been a tremendous success and has helped the zoo community better understand the reproductive biology of these beautiful creatures.”

USING DIGITAL CAMERA TRAPS TO HELP IDENTIFY JAGUARS/BOLIVIA

WCS conservationists announced in October they had identified more individual jaguars in Bolivia than ever before with a camera trap survey. Using technology first adapted to identify tigers by stripe patterns, we identified 19 jaguars. The images come from the Alto Madidi and Alto Heath, a region at the headwaters of the Madidi and Heath Rivers inside Bolivia’s outstanding Madidi National Park.

The survey included Ixiamas Municipal Reserve, created following a previous WCS survey in 2004 along the Madidi River. That study revealed a high abundance of jaguars and other species such as white-lipped peccaries, spider monkeys, and giant otters. WCS will use these images to find out more about this elusive cat and its ecological needs. The data gleaned from these images can provide insights into the lives of individual jaguars and will help us generate a density estimate for the area.

The study was noteworthy in its use of digital camera traps, which replaced the traditional film units used in the past. The cameras are strategically placed along pathways in the forest (in particular the beaches of rivers and streams) for weeks at a time, snapping pictures of animals that cross an infrared beam. Conservationists returning to the traps can now download the

images in seconds, rather than waiting days for film to develop.

“The preliminary results of this new expedition underscore the importance of the Madidi landscape to jaguars and other charismatic rainforest species,” says Dr. Julie Kunen, Director of WCS’s Latin America and Caribbean Program. “Understanding the densities and ranging habits of jaguars is an important step in formulating effective management plans for what is arguably the most biodiverse landscape on the planet.”

GIVING SCARLET MACAWS A HELPING HAND/GUATEMALA

WCS’s Guatemala Program, the Bronx Zoo, the National Park Service of Guatemala, and other groups reported in November a major victory from Central America: a bumper crop of magnificent scarlet macaw fledglings that had taken flight over the forests of Guatemala. The fledged birds totaled 29 – a big success for



conservationists working in the Maya Biosphere Reserve. They had hoped to record at least one fledgling from each monitored nest (24 nests in total) during the 2011 season.

The monitoring program focused on helping weak and at-risk chicks—some of which were removed from tree cavity nests and hand-reared in a jungle hospital—with guidance from the Bronx Zoo’s Department of Ornithology and veterinarians from the WCS Global Health Program. The rehabilitated chicks were then fostered back in nests with chicks of the same age, a procedure that greatly increased the chances of survival for these rare birds.

With a total estimated population of only 300 macaws in the country, each successfully fledged bird is critical for the survival of the species. The high number of surviving fledglings in the 2011 season stands in stark contrast to the 2003 season, in which only one fledgling resulted from 15 nests.

HEADING INTO OUR 117TH YEAR...

The New York Zoological Society’s story began in 1895 with a mandate to prevent North American bison from extinction, create a great zoological garden, educate and entertain the public, and explore the great landscapes of Alaska. A century later we had become the Wildlife Conservation Society, befitting our global conservation mission and our deployment worldwide. As we enter our 117th year, our five New York City zoos and aquarium remain the wellspring of our international efforts, and the Bronx Zoo our headquarters. We remain strongly committed to our early work in North America and to wildlife and wild places across the globe. Our mission of global conservation, wildlife health, husbandry, and research enhances our prospects for success in meeting the challenges facing wild nature and humanity.



[LEFT] A WCS action plan is designed to stabilize populations of the endangered Nigeria-Cameroon chimp.



Bronx Zoo tigers Pepino,
left, and Bumi, right.

2011 FINANCIAL REPORT

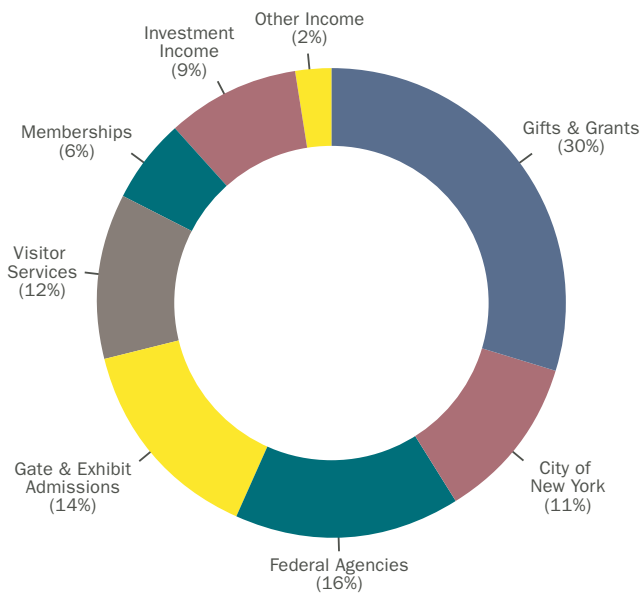
THE WILDLIFE CONSERVATION SOCIETY CLOSED THE 2010-11 FISCAL YEAR WITH A SMALL OPERATING SURPLUS, THE EIGHTH CONSECUTIVE YEAR OF POSITIVE FINANCIAL RESULTS. OUR OPERATING REVENUES AND PROGRAMS AND OUR BALANCE SHEET CONTINUE TO RECOVER FROM THE 2008 FINANCIAL CRISIS. REVENUES GREW 4% AND TOTALED \$208.3 MILLION FOLLOWING THE DECLINE SEEN IN FISCAL YEAR 2010, AND OUR JUNE 30TH BALANCE SHEET SHOWED TOTAL ASSETS OF \$796.6 MILLION, A \$30.7 MILLION IMPROVEMENT, THANKS TO POSITIVE INVESTMENT PERFORMANCE.

WCS's programmatic support benefits from a highly diversified revenue base. Contributions and grants from individuals and foundations, federal and state agencies, foreign aid and multilateral organizations totaled \$94.8 million, a healthy 7% increase from the prior year. These sources provided 45% of all operating revenue. Federal grant support of our global programs through the United States Agency for International Development, the U.S. Fish and Wildlife Service and other agencies attained a record high of \$32.8 million, nearly eight times funding from these sources a decade ago.

Very poor weather—a very hot summer, an intensely cold winter and a rainy spring—had a negative impact on zoo and aquarium attendance, which totaled an aggregate 4.04 million visitors, 10% lower than last year's 4.5 million visitors. Despite the weather our audience driven revenues—income from gate admissions and exhibits, membership and income from visitor services—food, merchandise and parking activities—grew 4% and totaled nearly \$68 million. This success is the product of many efforts tied to on-line marketing and discounting and promotion of higher value tickets and memberships. These audience-driven revenue sources provided one third of total operating income in 2010-11.

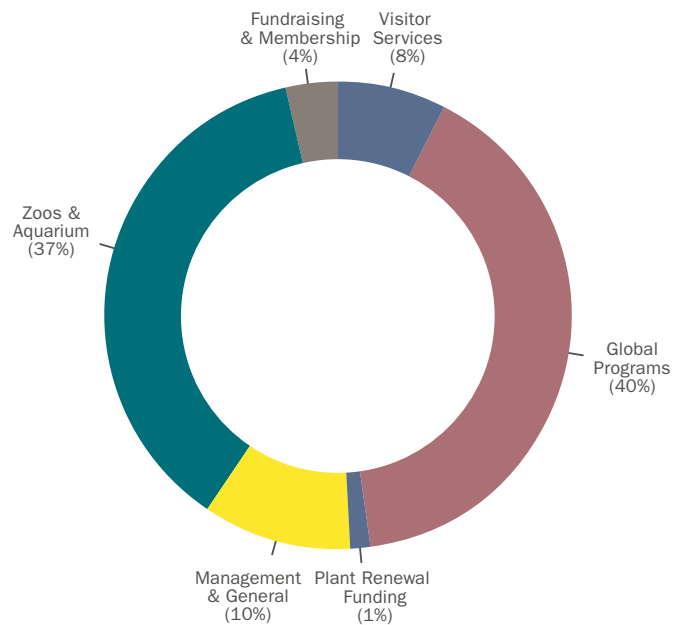
In the aggregate the City of New York appropriated \$23.7 million for zoo and aquarium operations, less than the prior year. The overall reduction in city support was the consequence of a cut in general operating support for the Bronx Zoo and the New York Aquarium through the Department of Cultural Affairs and lower reimbursement for City Zoos' operations through the Department of Parks and Recreation, offset in part by higher City-funded heat, light and power expense. Improved earned income at the City Zoos has reduced the Department of Parks and Recreation's reimbursement commitment over time. Total support from the City of New York has dropped 25% in real terms over the last five years, so our success in capitalizing on other revenue opportunities is vital to WCS's continued financial health.

Investment income for operations totaled \$19.1 million in Fiscal Year 2010-11, little changed from the prior year but \$7 million lower than income from this source in Fiscal Year 2008-9, when support from endowment and other investments totaled nearly \$26 million. Spending from endowment is governed by WCS's endowment spending policy which requires that endowment payout be reduced over time to account for the 29% investment loss experienced during the late 2008 market crash.



2011 OPERATING REVENUE

(\$208 million)



2011 OPERATING EXPENSES AND PLANT RENEWAL FUNDING

(\$208 million)

WCS operating expenses reached \$208.2 million in Fiscal Year 2010-11, \$9 million or 4% higher than the prior year which suffered from sharp budget cuts made at the end of Fiscal Year 2008-9. Programmatic activity at our zoos and aquarium and our global programs totaled just over \$160 million. Within this total our global programs reached a new high of \$84 million, funded by a combination of restricted gifts, grants and contracts from individuals, foundations and governmental sources. It is important to note that WCS is the beneficiary of a generous renewal of the Wilson Trust Challenge. The Wilson Challenge is a \$25 million match designed to motivate other donors to raise their level of commitment to WCS's global activities.

Zoo and aquarium expenses also grew from the prior year as a result of the provision of staff raises and increases in head count that were grant funded or essential to support revenue raising activities and other operational priorities. However, expenses and head count for our New York-based programs remain substantially below 2008 levels as WCS reduced fixed costs by 15% in reaction to the global economic crisis. Selected investments were made in fundraising and other support services in Fiscal Year 2010-11. Still management and fundraising expenses make up a lean 13.7% of our expenditure base. WCS continues the commitment to set aside a portion of restricted income for a

facilities renewal fund for our infrastructure needs and this past year \$2.8 million was set aside for this purpose.

Capital expenditures totaled \$13.5 million in Fiscal Year 2010-11. The first phase of our ambitious plan to revitalize the New York Aquarium was achieved with the opening of new exhibits at Main Hall, the completion of the Oceanic Deck, and a new utility hub to service the aquarium now and in the future. We continue work on the design for the next phase of aquarium redevelopment—*Ocean Wonders: Sharks!* At the Bronx Zoo, ground was broken on the next phase of the CV Starr Science Campus: the LaMattina Wildlife Ambassador Center and a new isolation-quarantine special care unit at the Wildlife Health Center. The City of New York continues to be our most generous funding partner for exhibit and other physical plant needs.

In addition to staying focused on good management of our operating and capital budgets, we pay strict attention to our balance sheet and cash management. Total assets were \$796.6 million, up from \$765.9 million at the end of the prior fiscal year. WCS enjoys a high degree of liquidity with operating cash and cash equivalents totaling nearly \$67 million on June 30, 2011. Through the work of the Trustees' Investment Subcommittee, the restructuring of WCS's investment portfolio is complete and fully invested. Our endowment continues its climb back from the investment losses incurred at the end of calendar year 2008.

CONSOLIDATED BALANCE SHEETS

June 30, 2011 and 2010, in thousands

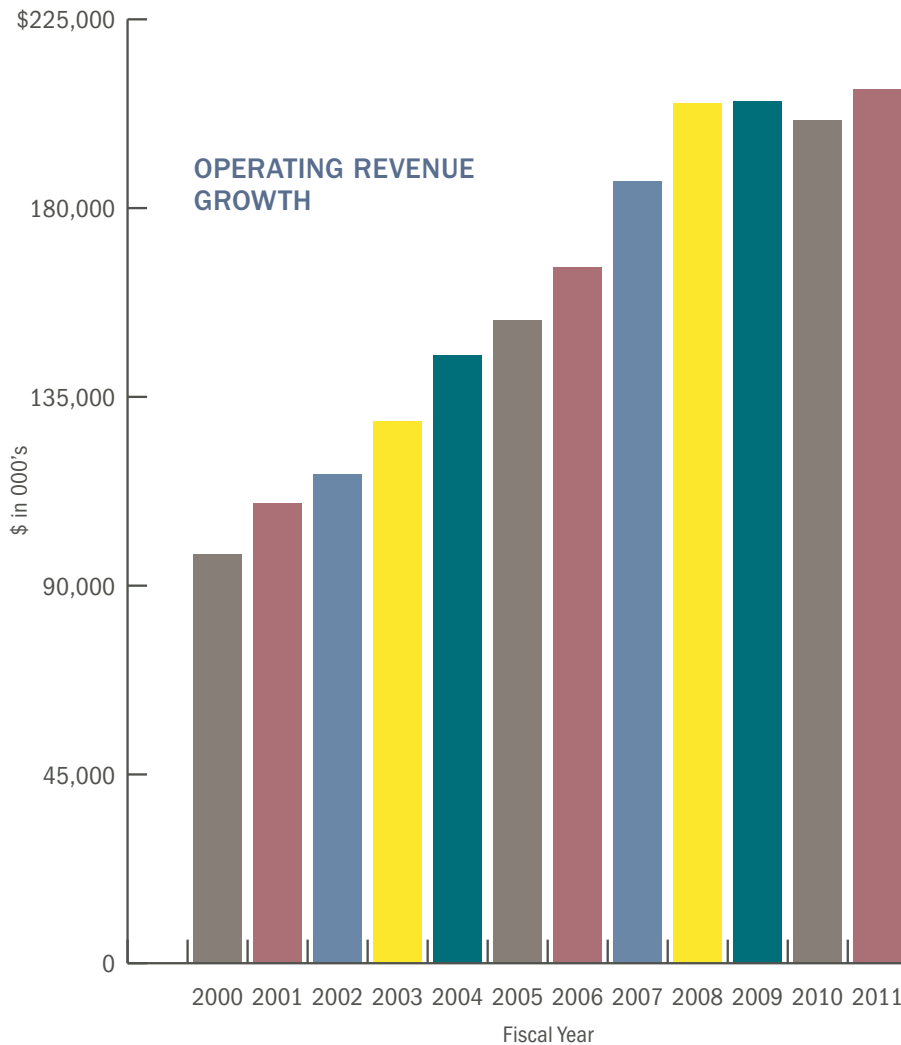
ASSETS	2011	2010
Cash and Cash Equivalents	66,924	61,684
Accounts Receivable	4,037	2,930
Receivable from the City of New York	14,420	15,476
Receivable from the State of New York	4,861	5,377
Receivable from Federal Sources	31,056	31,927
Grants and Pledges Receivable	32,093	28,914
Inventories	2,090	1,790
Prepaid Expenses and Deferred Charges	5,765	4,452
Investments	408,305	380,869
Amounts Held in Trust by Others	1,684	1,605
Funds Held by Bond Trustee	10	13
Property and Equipment	225,369	230,856
Total Assets	\$796,614	\$765,893
LIABILITIES AND NET ASSETS		
Accounts Payable and Accrued Expenses	27,756	28,011
Annuity Liability	3,344	3,405
Bonds Payable	66,554	66,590
Post-retirement Benefit Obligation	28,351	26,987
Total Liabilities	\$126,005	\$124,993
Net Assets		
Unrestricted:		
General Operating	1,741	1,741
Designated for Long-Term Investment	149,059	154,810
Net Investment In Property and Equipment	158,825	164,279
Total Unrestricted	\$309,625	\$320,830
Temporarily Restricted	153,233	114,504
Permanently Restricted	207,751	205,566
Total Net Assets	\$670,609	\$640,900
TOTAL LIABILITIES AND NET ASSETS	\$796,614	\$765,893

Copies of audited financial statements are available upon request.

OPERATING REVENUES AND EXPENSES

June 30, 2011 and 2010, in thousands

REVENUES	2011	2010
Contributed	\$43,323	\$44,045
Membership Dues	12,010	10,875
Investment Income	19,051	18,959
City of New York	23,705	24,420
New York State	3,178	3,329
Federal Agencies	32,813	29,221
Non-governmental Organization Grants	15,448	12,094
Gate and Exhibit Admissions	30,060	28,609
Visitor Services	23,876	24,189
Education Programs	2,046	1,875
Sponsorship, Licensing, and Royalties	1,421	1,590
Other	1,392	1,818
Total Revenue	\$208,323	\$201,024
EXPENDITURES		
Program Services		
Bronx Zoo	48,057	46,509
New York Aquarium	10,960	10,492
City Zoos	17,579	16,810
Global Programs	84,244	78,168
Lower Bronx River Habitat Conservation	126	1,593
Total Program Services	\$160,966	\$153,572
Visitor Services	\$15,727	\$15,541
Supporting Services		
Management and General	21,216	20,181
Membership	2,364	2,027
Fundraising	5,137	4,637
Total Supporting Services	\$28,717	\$26,845
PLANT RENEWAL FUNDING	\$2,820	\$3,325
TOTAL EXPENSES AND PLANT RENEWAL FUNDING	\$208,230	\$199,283
EXCESS OF REVENUES OVER EXPENSES AND PLANT RENEWAL FUNDING	\$93	\$1,741



On June 30, 2011 the market value of the investment portfolio was \$408.3 million, reflecting total investment return of 12.4%. This result lagged WCS's benchmark and other market indices because certain legacy investments performed poorly and the portfolio was not fully invested for the entire year. Liabilities have remained stable, and WCS retains its AA-/Aa3 bond ratings with stable outlooks from both Standard and Poor's and Moody's.

Looking back over the last decade and through recent economic challenges, WCS has thrived. Total assets have grown by a third, despite recent investment losses. Over the last ten years our operating revenues and our programmatic activities have doubled. Our global programs are five times what they were in 2000. WCS has had a balanced budget for eight consecutive years. Over this time period we added over \$34 million to unrestricted financial assets through operating surpluses and the investment of unrestricted bequests into long-term investment assets, and we allocated another \$25 million from operations into the plant fund for

infrastructure renewal. WCS has a modest debt profile with \$66.5 million of fixed-rate, tax-exempt debt so we have debt capacity to make new investments to bolster in-park revenues and support our conservation mission.

WCS is positioned well for the future. Our new exhibit planning is oriented around communicating our conservation activities to our visitors and optimizing their park experiences. Our leaders in Global Resources are making progress expanding the base of new individual and foundation donors, and we have an exciting strategy to develop revenue-generating corporate partnerships through a combination of corporate philanthropy, market-based sponsorships and conservation-based business solutions. We continue to increase bi-lateral and multi-lateral funding opportunities to support the growth of our global programs. Our financial planning efforts remain focused on maintaining and building our operating model to support our mission to save wildlife and wild places and connect people to wild nature.

QA

MARIANA VARESE



As WCS's director for Peru and Amazonia, Mariana Varese provides support to six landscapes in five countries. She tackles some of Latin America's toughest conservation challenges, from engaging local communities in resource management decisions to protecting critical carbon stocks. Here she discusses that work, the day she encountered a tapir and its baby, and why one should take caution walking third on a rainforest transect.

WHAT DREW YOU TO CONSERVATION SCIENCE?

I was a teenager in the eighties (yes, I am 40). I grew concerned about sustainability issues and the impact of humanity on earth – from the fear of a nuclear disaster to a worry that we might consume all global oil reserves before the year 2000. Conservation helped me shift from being scared and pessimistic to believing I could work in those last wild places that humans were moving into. As I think about it, while studying social sciences in college, I was drawn to conservation initially not because of wildlife, but because of humans. The people who live on the frontiers of human expansion are among the poorest and most marginalized in the world. How can we use social and natural sciences to make their lives better while preventing the destruction of the wild places they occupy?

WHAT ARE THE BIGGEST CHALLENGES YOU FACE IN YOUR WORK?

The Andes Amazon faces urgent threats that stem from a combination of two things. First, the unprecedented levels of investment in extractive industries and infrastructure (roads, dams, railroads, waterways) at a pace never seen before. Second, the structural weakness of many South American states, with weak laws and regulations, weak enforcement capacity, lack of transparency and advance consultation, and plain old corruption. These problems are already having deep and widespread impacts on the wildlife, wild places, and local livelihoods of the Andes Amazon. In addition, while conservation threats in South America are ever larger and taking place faster, the resources for conservation and local sustainable development have become scarcer. Events are evolving very fast and I worry the conservation community does not have the capacity to respond adequately.

DESCRIBE ONE OF YOUR MAIN PROJECTS IN 2011.

Several hydroelectric infrastructure projects threaten Andes Amazon watersheds, particularly the Inambari watershed in Southeastern Peru. To address this problem, we assembled a team of scientists, lawyers, and anthropologists. We are now working with local communities and government agencies to ensure that appropriate standards and policies are implemented. This aims to be an experiment to promote a productive and timely mix of science, integrated land/watershed management, policy making, and capacity building that can be replicated throughout the Andes Amazon.

WHAT IS THE ROLE OF COMMUNITY-BASED CONSERVATION IN PERU?

Community-based conservation combines the traditional knowledge and practices of indigenous and local people with western science to find ways to sustainably use natural resources. In this way, community livelihoods are improved. In Peru, community-based conservation is particularly relevant because of the country's cultural diversity (49 indigenous languages are spoken) and its long history of natural resource use by indigenous peoples. Peru is one of the 10 most biologically-diverse countries in the world. In its rainforest are found many examples of how local and indigenous people have been able to subsist and thrive in harmony with the environment and the wildlife that surrounds them. By generating tangible proof that they actively and sustainably manage their resources, local people gain stronger claims to the land. Sadly, the recent wave of infrastructure development and the growth of extractive industry in the Andes Amazon threatens both wilderness areas and local livelihoods. Community-based conservation can be a powerful tool to address those threats.



The rainforest and its wildlife are mysterious, hard to see. You need to be patient and look carefully. It requires training, perseverance, flexibility, and humility.

WHY ARE CARBON CONSERVATION PROJECTS IMPORTANT IN LATIN AMERICA?

Latin America harbors some of the largest tracts of carbon stocks and carbon sinks in the world, including the Amazon rainforest, the Maya Biosphere Reserve, southern boreal forests in Chile and Argentina, mangroves, and peat bogs. The unprecedented level of threats to these carbon repositories and sinks provides great urgency to carbon projects here.

HOW DID YOU FIRST BECOME INTERESTED IN WILDLIFE?

As a young kid, I was around domestic animals, but not wildlife. I traveled a lot with my family, but mostly to the Peruvian coast (a desert) and agricultural settings in the highlands. These places had impressive, open spaces but not a lot of wildlife. So I grew up being fascinated, but also scared, of the rainforest and the beasts that inhabit it (things you see in the movies). It was only in my early twenties that I spent significant time in the rainforest, when I completed research on the use of wildlife products among local people in southeastern Peru. I walked through the rainforest with exceptional young biologists and local hunters (the wildlife experts in their communities). They taught me the wonders of this ecosystem and how to enjoy it safely: how to recognize certain sounds, how to walk without shaking the plants, how to look for signs of animals. The local hunters' joke was that when you walk on a transect, the first person in line wakes up the snake, the second one annoys it, and the third one gets bitten. The experience was an epiphany. The rainforest and its wildlife are mysterious, hard to see. You need to be patient, look carefully, and be lucky to see large mammals. It requires training, perseverance, flexibility, and humility.

WHAT MAKES YOU PASSIONATE ABOUT YOUR JOB?

Several things: the vastness, diversity, mystery, and spectacular beauty of nature in the Andes

Amazon; working with local and indigenous people, understanding their intricate relationship with the natural environment that surrounds them; the urgency of finding conservation solutions that improve local people's livelihoods and empower them; and the scientific excellence and passion of WCS's field staff, which is inspiring and contagious.

CAN YOU DESCRIBE ONE OR TWO OF YOUR MOST EXCITING WILDLIFE ENCOUNTERS?

I had the privilege of going bird watching in the flooded forest in northern Peru with international and local experts on birds and mammals. Riding in a canoe in the middle of the trees, with the possibility of quietly sneaking a peek at birds, squirrels, and monkeys, and learning from these experts so committed to conservation, was a unique learning opportunity for me. Before working for WCS, I was doing surveys on the demand for wildlife products in southeastern Peru and I once had the opportunity to walk in the forest with an expert local hunter. We saw a female tapir and its baby crossing a small stream. It was so beautiful. Fortunately my guide did not hunt that day.

WHAT IS YOUR PROUDEST ACHIEVEMENT?

Being part of the team that worked to protect the highly biodiverse and threatened Tambopata Reserve Zone from being turned into an oil and gas concession. This effort resulted in the creation of the Bahuaja-Sonene National Park and the Tambopata National Reserve. The experience gave me long-life commitment to this wonderful watershed. Currently, I am happy to be able to apply lessons from this experience in the same area, helping WCS staff and local partners devise creative conservation solutions, as we did when ecologists, limnologists, anthropologists, lawyers, bureaucrats, and grassroots leaders joined to address the threat posed by the Inambari hydroelectric dam.



[OPPOSITE] Mariana Varese.

[ABOVE] Lowland tapirs are one of many wildlife species native to the forests of the Peruvian Amazon.



Hyacinth macaws like these at the Queens Zoo are an endangered parrot species native to South America.

2011 POLICY REPORT

WCS WORKS ON ALL FRONTS TO RETAIN AND GROW SUPPORT FOR CONSERVATION WITH CITY, STATE, U.S., AND INTERNATIONAL LEADERSHIP. BY STRENGTHENING RELATIONSHIPS WITH LAWMAKERS, LEADING DIVERSE COALITIONS, MOBILIZING GRASSROOTS ACTION, LEVERAGING MEDIA AND INFLUENTIAL SPOKESPEOPLE, TESTIFYING AT HEARINGS, AND BRINGING LAWMAKERS INTO FIELD SITES, WCS DRIVES POLICIES AND MAINTAINS VITAL FUNDING STREAMS THAT ARE CRITICAL TO ITS EFFORTS TO SAVE WILDLIFE AND WILD PLACES.

Today's economic and political climate leaves all government support vulnerable to severe funding cuts. Due in part to WCS actions to highlight our effective work in New York and around the world, our core city, state and federal funding programs were spared the worst of the cuts in a difficult budget cycle. Tireless WCS efforts with online advocacy, in-park petition drives, and media engagement enabled significant restoration of funding in the New York City budget. In FY11, nearly 650,000 letters to lawmakers at all levels were generated by WCS outreach.

In Washington, D.C., WCS emphasized the linkages between national security and international conservation to key audiences. Many WCS landscapes have vividly illustrated the positive impact conservation can have on people's livelihoods through improved resource management and enhanced local governance. In highlighting our programs in Afghanistan, South Sudan, and elsewhere, we have shown policymakers how conservation is a critical and cost-effective component of peace-building and security. Via meetings, Congressional testimony, and the media, WCS drove this message home to audiences who are looking for a compelling reason to support conservation in a difficult economic climate. WCS's challenge is to break through the political noise in Washington to build new consensus on the value of conservation as a government investment.

INTERNATIONAL CONSERVATION FUNDING

While federal programs in the FY11 budget saw cuts in the billions, many top WCS priorities avoided catastrophic funding losses. The USAID Biodiversity Program (\$190 million) took less than a 10 percent cut from FY10 enacted levels. Meanwhile, USAID climate accounts are now funded at \$950 million, down from \$1.3 billion in the FY10 enacted budget. To help secure funding, WCS worked with allies such as Rep. Michael Grimm (R-NY) and the U.S. Chamber of Commerce to defeat a House floor amendment that would have dramatically cut the U.S. contribution to the Global Environment Facility (GEF), an international agency that supports key WCS initiatives including tiger conservation and Patagonian coastal habitat management. In the 24 hours leading up to the amendment vote, WCS supporters responded to a Take Action alert by sending more than 13,000 e-mail messages to their representatives in Congress asking them to preserve funding for the GEF.

To maintain support in the FY12 appropriations, WCS kept its thematic focus on national security through conservation. Kelly Keenan Aylward, WCS Washington Office Director, detailed this security strategy during her testimony to the House State and Foreign Operations Appropriations Subcommittee. Through successful Capitol Hill briefings given by WCS's Paul Elkan and



For the November opening of our European Policy Office, WCS staff gathered in Brussels, Belgium.

[PICTURED LEFT TO RIGHT] WCS Democratic Republic of Congo conservationist Deo Kujirakwinja, WCS Director of European Policy & Government Relations Barbara Helfferich, WCS Asia Program Deputy Director Peter Zahler, WCS Executive Vice President of Public Affairs John Calvelli, WCS Vice President of Conservation Policy Linda Krueger, European Commissioner for the Environment Janez Potocnik, and WCS Senior Conservationist and South Sudan Country Director Paul Elkan.

David Lawson, members of Congress and their staffs received on-the-ground updates of how U.S. government dollars are improving livelihoods and security in South Sudan and Afghanistan. Additionally, with online advocacy campaigns for these countries, WCS mobilized thousands of our online activists, generating more than 185,000 emails to Congressional representatives in support of conservation-focused foreign aid.

WCS programs funded by the Department of Interior weathered the FY11 budget cycle largely intact as well. The Multinational Species Conservation Funds (MSCF), administered by the U.S. Fish and Wildlife Service, received \$10 million, a small reduction from FY10's \$11.5 million. WCS helped successfully defeat an amendment that would have stripped funding from U.S. Forest Service International Programs (FSIP). To do so, we leveraged media coverage and developed partnerships with diverse allies, such as the American Forest and Paper Association.

In support of FY12 federal funding, Executive Vice President of Public Affairs John Calvelli represented conservation interests before the House Interior Appropriations Subcommittee in testimony. He spoke of the landscape-wide benefits of species conservation programs, such as MSCF, which include job creation and national security enhancement. In July, John Robinson,

Executive Vice President for Conservation and Science, testified before the House Natural Resources Committee alongside *Vampire Diaries* actor and activist Ian Somerhalder. The scientist/celebrity duo spoke in favor of renewing federal commitment to the MSCF, which benefits programs that help protect elephants, rhinos, tigers, marine turtles, and great apes. Following the testimony—which was the most viewed hearing in the history of the Natural Resources Committee's website—Robinson and Somerhalder met with several House members and Senators to spread the message of wildlife conservation. The activities generated media coverage and a tweet from Somerhalder, which directed thousands of his fans to WCS's website.

GAINING ACCESS

Engaging WCS leadership at the highest levels to speak on behalf of the organization helped expand our access to Congressional and administration officials.

Ward W. Woods, Chair of the WCS Board of Trustees, traveled to Washington in September to further inform Congress and members of the administration of WCS priorities. Our Afghanistan program and the cost benefits of reducing conflict through conservation programs

impressed appropriators, such as Chairwoman Kay Granger (R-TX) and Ranking Member Nita Lowey (D-NY) of the House State Foreign Operations Appropriations Subcommittee. In addition, Rep. Peter King (R-NY), Chair of the House Homeland Security Committee, and Rep. Michael Grimm (R-NY), Co-Chair of the Zoo and Aquarium Caucus and a former FBI Agent, were eager to learn more about a WCS project, funded by the Centers for Disease Control and Prevention, to monitor U.S. ports of entry for wildlife pathogens in illegal bushmeat.

WCS Trustee Walter C. Sedgwick came to Washington for a series of meetings in June. His presence made possible WCS's first meeting with Senate Majority Leader Harry Reid (D-NV) in his Capitol office. The meeting focused on WCS's work in South Sudan and Afghanistan, with the goal of garnering political support from the highest levels of Congressional leadership for international conservation within the foreign aid budget. Sedgwick also met with Sen. Scott Brown (R-MA) and the senior leadership of the National Fish and Wildlife Foundation to discuss WCS's work in the New York Seascape. From Montauk, NY to Cape May, NJ, WCS conservationists are helping to protect our coastal waters and the wildlife and livelihoods that depend on them.

WCS also participates in the International Conservation Caucus Foundation, an alliance of business groups, conservation organizations, and members of Congress that provides WCS access to nontraditional partners on Capitol Hill. This past year, ICCF activities included a Members Dinner with key Republican appropriators, monthly caucus staff briefings, and a tour of conservation sites in Costa Rica with Congressional staff. The ICCF also launched the Conservation Caucus of Nations during the United Nations General Assembly in New York City to bring together parliamentarians from around the world to discuss conservation activities. Next year, the ICCF plans to launch the bi-partisan Congressional Oceans Caucus to generate support for marine conservation efforts on Capitol Hill.

DRIVING THE ISSUES

WCS's work on an array of policy issues has the potential to affect the entire conservation landscape whether on an international, national, regional or local scale. Our policy portfolio includes a range of issues, with scopes that vary from the broad context of conservation to a single species such as bison.

In partnership with the Alliance for Global Conservation, a consortium of peer institutions, WCS continues its advocacy for a unified, long-term national strategy on global conservation.

Such a strategy would improve the federal commitment to, and integration of, conservation issues. To this end, the Alliance builds support for the Global Conservation Act through collaboration with sportsmen's advocacy groups and by working directly with the office of House Speaker John Boehner (R-OH). Additionally, WCS leads the International Conservation Partnership, a coalition of like-minded institutions in the fight to save vital conservation funding programs.

WCS EUROPEAN POLICY OFFICE OPENS

WCS opened a European Policy Office (EPO) in Brussels, Belgium this year to boost the organization's visibility and policy impact in Europe. The office will specifically work with the European Commission, the European Parliament, and European bilateral aid and conservation agencies. Further, the office will work with the leaders and policymakers from all of the EU member nations to improve conservation policy and practice worldwide. Globally, many EU nations play a leadership role in advancing biodiversity and forest conservation.

The activities of the EPO are analogous to those of our Washington, D.C. office, which manages U.S. Federal Affairs engagement and provides outreach to other Washington-based institutions. The EPO will support policies and actions relevant to WCS projects and initiatives. The Brussels staff will work on building partnerships with other NGOs and organizations as appropriate to our long term policy and fundraising objectives. European Union and European bilateral agencies are an important source of support for conservation in developing nations. EU Institutions based in Brussels provided more than \$13 billion in total development assistance in 2009.

The EPO is run by Barbara Helfferich, who has more than 18 years experience in European policy making, first as the secretary general of the European Women's Lobby, and then as advisor to European Social Affairs Commissioner, Anna Diamantopoulou. She left the cabinet of the Commissioner to become European spokeswoman for the environment, a post which she held until recently.



[PICTURED LEFT TO RIGHT]
John Calvelli; U.S. Rep
Michael Grimm (R-NY);
Ward Woods; and David
Barron, Chairman of the
Board of the International
Conservation Caucus
Foundation, at a Capitol
Hill meeting to discuss
the illegal bushmeat trade.

September's launch of the U.S. Postal Service tiger stamp was the culmination of a decade of WCS efforts and leadership. Legislation passed last year to create the stamp, which will benefit MSCF programs. For each stamp sold, an estimated three to four cents will support WCS's global conservation work. In May, the tiger stamp's image was unveiled to members of Congress and their staffs at a Capitol Hill ceremony of the Association of Zoos and Aquariums, where WCS leadership spoke. WCS played a prominent role in the official U.S. Postal Service ceremony to launch the sale of the tiger stamp in Washington, D.C. The stamp is an important and independent funding stream, at no taxpayer expense, for many WCS programs in an uncertain federal fiscal climate.

WCS brought its science to bear on a number of domestic U.S. environmental policy issues in 2011. Our efforts to protect important segments of the National Petroleum Reserve – Alaska (NPR-A) continue as the Bureau of Land Management (BLM) evaluates the possibilities for energy development in the Arctic. WCS submitted formal recommendations to the BLM, which have been incorporated in the final 2011 leasing maps. Likewise, the administration's America's Great Outdoors initiative to connect Americans with their outdoor spaces remains on track. WCS has engaged the administration from early information gathering hearings to the recommendation of priority areas. In November, this culminated in the site selection of Montana's Crown of the Continent, WCS's first choice for designation, among other areas.

Closer to home, WCS's successful partnership with NOAA to restore the lower Bronx River (and more recently parts of the Harlem River) is now serving as a model for the new Urban Waters Federal Partnership. This program of America's Great Outdoors initiative aims to bring local, state and federal partners together to further restoration efforts on these and other select urban waterways in cities around the U.S.

In the coming months, WCS is initiating work to further policy on behalf of bison and sharks. Out west, WCS is working with a coalition of tribes, bison producers, sportsmen and conservation organizations to develop and drive federal legislation to designate the American bison as the United States' national mammal. Such a bill would bring diverse stakeholders together to celebrate the cultural, economic and ecological heritage of bison in America.

In New York State, WCS is working with other conservation groups and members of the legislature to introduce and pass legislation that would ban the sale, trade and distribution of any form of shark fins within the state. Millions of sharks are killed around the globe each year for their fins, through a practice known as shark finning, whereby the fins are removed and the carcass is discarded. The high demand for fins to prepare the expensive Asian delicacy, shark fin soup, is leading to declines in shark populations worldwide. Although shark finning is already illegal in New York waters, allowing the continued import and export of fins helps to drive shark mortality locally and globally. This effort to ban the sale and trade of fins comes on the heels of similar laws in Hawaii, California, and other West coast states, and after the recent strengthening of federal law pertaining to shark finning.

INFORMING GOVERNMENTS WORLDWIDE

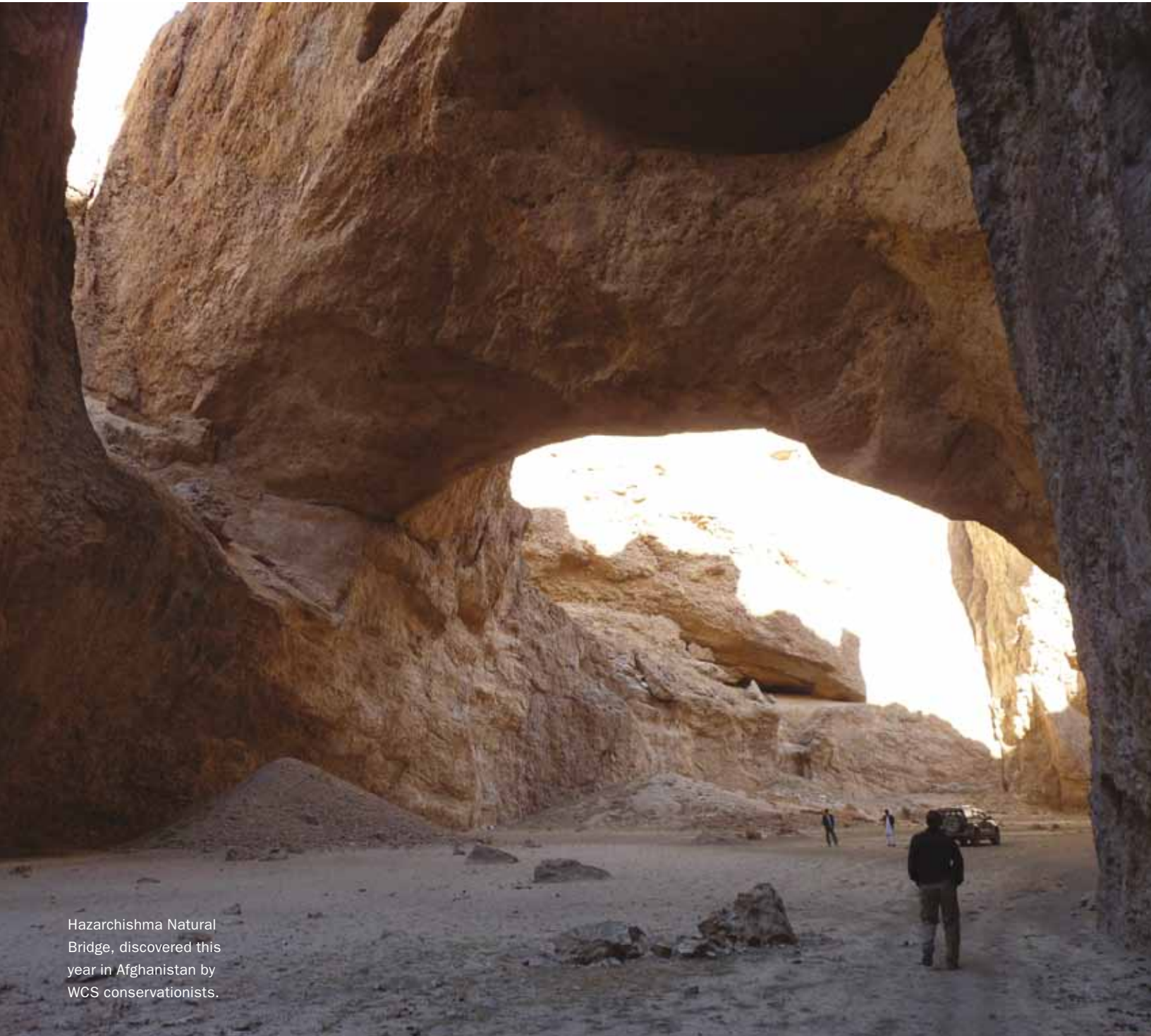
WCS provided science-based inputs to 193 of the world's governments at a conference of the international Convention on Biological Diversity in Nagoya, Japan in October 2010. Addressing the decline in the diversity of species and ecosystems worldwide, the conference featured WCS-organized panels on climate resilient landscapes, conservation finance, ecosystem-based adaptation, and governance. At Nagoya, nations committed themselves to substantially increased targets for terrestrial and marine protected areas. During the meeting, the government leaders set ambitious goals to improve the sustainability of agriculture, forestry, and fisheries, and to address the impacts of climate change on nature. WCS will continue to work with governments at the national level to ensure these targets become realities on the ground and to mobilize the necessary resources and political will to sustain them.

Similarly, WCS provided science and policy inputs to climate change negotiators gathered in Bonn in June 2011. We chaired a panel of experts that provided guidance on resolving difficult issues related to an international agreement on reducing emissions from deforestation and forest degradation—a theme of critical importance both to climate change mitigation and conservation.

Wildlife exploitation and trade remain a major threat to myriad species, from elephants and tigers to numerous birds, reptiles, and amphib-

ians. Accordingly, WCS continues to press for increased protections for wildlife endangered by trade. We work with the Convention on International Trade in Endangered Species (CITES) and its member states, to ensure our science, data, and hands-on conservation knowledge are incorporated into decisions about wildlife trade. Looking ahead, we are gearing up for major policy initiatives to enhance protections for a broad range of shark species, the populations of which continue to plummet around the world.

Hazarchishma Natural Bridge, discovered this year in Afghanistan by WCS conservationists.





Central African forest elephants gather at bais like this one in the Central African Republic.

PROJECTS

IN THE FIELD & PARKS

CHALLENGES, CONSERVATION SUPPORT & CENTRAL INITIATIVES

- Agricultural Intensification as Conservation Strategy in African Landscapes. M. Painter, R. Mwinyihali
- Integrated Coastal Resource Management in Equatorial Guinea. M. Painter, A. Formia, C. McClennen, T. Stevens, J. Robinson
- REDD Feasibility Study in Takamanda Mone. O. Sene, C. Burren, R. Rose, F. Okeke, M. Arpels
- NGO Support for REDD Readiness in Congo Basin. C. Burren, M. Starkey, J.R. Makana
- ABCG BATS Training on Drivers of Deforestation and REDD in the Congo Basin. C. Burren, M. Starkey, J.R. Makana, O. Sene, M. Arpels
- Developing a Subnational Approach to REDD in Mambasa, DRC. J.R. Makana
- Supporting Natural Regeneration in Nyungwe National Park, Rwanda. M. Bana, F. Mulindahabi, A. Nicholas, M. Masozera, M. Arpels
- The Creation of a Subnational Approach to REDD in Murchinson Falls, Uganda. M. Leal, G. Nangendo
- REDD Project Development in Makira, Madagascar. C. Holmes, C. Burren, N. Raharison
- Albertine Rift Climate Change Project. J. Watson, A. Seimon, A. Plumptre
- Watershed Management and Modeling Research with USFS in Zambia, Rwanda, and Tanzania. C. Ingram, Africa Program (NY), M. Masozera, D. Lewis, D. Muttekanga
- Mangrove Conservation Strategy. C. Ingram, K. Siex, T. Davenport, C. McClennen, E. Matthews
- West Coast of Madagascar Climate Change Project. J. Watson, Madagascar Marine Staff
- Ituri Mining Impact Assessment (BATS). R. Victurine, R. Tshombe, R. Mwinyihali, J. Masselink, C. Ewango
- Zanaga Baseline Studies and Pre-Feasibility Impact Analysis. R. Victurine, P. Telfer
- Seima Protected Area REDD Project. T. Evans, M. Gately, M. Arpels
- Building Capacity for REDD in Laos. C. Moore, J. Ferrand
- Review of Best Management Practices for OT mine in South Gobi. R. Victurine, A. Fine
- Sustainable Financing for Coastal Marine Areas. R. Victurine, G. Harris
- Planning toward development of Patrimonial Fund. R. Victurine, R. McNab
- Conservation and Sustainable Forest Management in the Paraguayan Chaco. M. Painter, O. Castillo, M. Varese, F. Fracchia
- Watershed Services and Climate Services in the Pantanal of Brazil. C. Ingram, M. Johnson, A. Keuorigan
- Sustainable Financing for Conservation for Latin America. R. Victurine, C. Ingram, H. Crowley
- Workshop on biodiversity offsets in the Amazon. R. Victurine, M. Varese, O. Castillo
- Strengthening Resilience of Vulnerable Island Communities in PNG. J. Watson, PNG Program Staff
- Alaskan Shorebird Climate Change Analysis. S. Zack, J. Watson
- Land Cover Change Modeller Training. Robert Rose, M. Arpels
- Ecosystem Services for Poverty Alleviation Workshop. C. Ingram, D. Wilkie, A. Mark, L. Painter, R. Wallace, M. Painter M. Masozera
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- Biodiversity Offset Program. R. Victurine
- Conservation Trust Fund Investment Survey. R. Victurine
- Analysis of PES in Biodiversity Conservation. C. Ingram, K. Redford, J. Watson
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- Field veterinary work (field work and developing a One Health program, training and capacity building) with the Republic of South Sudan Program. M. Kock, Aldo Gwake, David Adwok, Paul Elkan
- WILD training workshops in collaboration with AU-IBAR, FAO and Royal Veterinary College (RESPOND and AU-IBAR funds). M. Kock and regional/international colleagues
- Ongoing support and participation in training programs in Southern Africa, including NZG Conservation Medicine Course in 2012. M. Kock and colleagues
- Wildlife Capture, Handling and Care Course, Zimbabwe. M. Kock, and regional colleagues
- Wildlife Health Policy Program. S. Osofsky
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- Conservation through social marketing with Media Impact. D. Wilkie, N. Mohan
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- Conservation Measures Partnership: Results-based Management. K. Didier, L. Duda, D. Wilkie
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- R. Fotso, F. Maisels
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- Advice on general monitoring and survey methodology to WCS Cameroon. F. Maisels
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- Dzanga forest elephant demographics and social dynamics. A. Turkalo
- Research on the use of elephant infrasound as a method of censoring in forests (Cornell University). A. Turkalo
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- Nouabalé-Ndoki National Park Project Nouabalé-Ndoki National Park (NNNP). T. Breuer, D. Dos Santos
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- Conserving endangered Bonobos in the Tshuapa-Lomami-Lualaba Landscape Democratic Republic of Congo. I. Liengola, F. Maisels
- Land Use Planning Conservation and Forestry in the Ituri Landscape. R. Mwinyihali, E. Brown, J-R Makana
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WCS conservationist
Cynthia Lagueux
with a hawksbill
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- Building conservation capacity and training for Park personnel in tourism GIS ranger-based monitoring and data collection. N. Barakabuye, N. Chao, F. Mulindahabi
- Transboundary coordination between Rwanda and Burundi in the Nyungwe-Kibira Landscape. N. Barakabuye
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- Long term biodiversity monitoring for conservation planning and park management. F. Mulindahabi, N. Ntare, N. Chao, A. Plumtre
- Alternative energy sources and beekeeping. N. Barakabuye, I. Buvumuhana, V. Hakizimana, N. Chao.
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- Boma-Jonglei Landscape Conservation Project. P. Elkan, S. Elkan, F. Grossmann, J.M. Venus, M. Carbo Penche, M. Wieland, M. Lopidia S. Gain, A. Schenk, P. P. Awol, C. Tiba, J. Lita, J. Juan, T. Kamau, P. Alexander, R. Craig
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transformation program. D. Lewis, N. Tembo

Community expeditions in African culture and wilderness—living ecotourism. D. Lewis, C. Ngoma

Nyamaluma College community-based training and land-use planning/African College for CBNRM. D. Lewis, N. Tembo

REGIONAL

Assessment of elephant status and threats across the Congo basin. F. Maisels, S. Strindberg, S. Blake

Assessment of progress on 2005-2010 Ape Action Plan for Western Equatorial Africa. F. Maisels

Wildlife monitoring capacity-building in Central Africa. F. Maisels

Conservation of forest elephants in the Congo Basin. S. Blake, F. Maisels, S. Strindberg, C.B. Yackulic

Ape Survey and Monitoring Guidelines project (Species Specialist Group: IUCN). F. Maisels

Central African Forestry Program and long term study of botanical plots. J.R Makana

Trinational park monitoring: Congo/CAR/Cameroon (WCS/WWF/USAID). A. Turkalo, D. Greer, T. Breuer

Installing a Climate Change Network in Albertine Rift. A. Seimon, T. Seimon

Climate Change Assessment of landscapes in the Albertine Rift. G. Picton-Phillips, A. Seimon, A. J. Plumptre

Monitoring climate change impacts in the Albertine Rift. A. Seimon, A.J. Plumptre, G. Picton-Phillips

Transboundary conservation in the Greater Virunga Landscape. D. Kujirakwinja, A.J. Plumptre

Transboundary conservation in the Congo-Nile Divide. N. Barakabuye, M. Masozera

Biodiversity surveys of the Albertine Rift Forests. A.J. Plumptre, D. Kujirakwinja, H. Mugabe, B. Kirunda.

Carbon assessments and REDD

feasibility analyses of forests in the Albertine Rift. M. Leal, A.J. Plumptre

ASIA

AFGHANISTAN

Afghanistan Country Program. D. Lawson, P. Bowles, S. Nikzad, Q. Zahar, Zabihullah

Wildlife surveys in the Pamirs. Z. Moheb, S. Naqibullah

Wildlife surveys in Darwaz, Badakhshan. Z. Moheb, S. Naqibullah

Community conservation and ecotourism in Wakhan. I. Ali, A. Simms, D. Bradfield, H. Ali

Bamyan Central Plateau conservation initiative. D. Bradfield, C. Shank, M. Arif

Wildlife-livestock ecosystem health in the Pamirs. S. Ostrowski, M. Hafizullah, A. Madad

Biodiversity legislation and policy. D. Lawson, R. Oberndorf

GIS landscape analyses and Living Landscapes. H. Rahmani, R. Rose, A. Simms

Conservation capacity building and training. H. Rahmani, M. Bashari

Wakhan conservation initiatives. A. Simms, Salahuddin, I. Ali

Introduction of fuel efficient stoves. I. Ali, D. Bradfield, M. Arif, A. Simms

Predator-proof corrals. I. Ali, H. Ali, A. Simms

Risk of disease transmission between livestock and wildlife in Afghan Pamirs. S. Ostrowski, A. Rajabi, H. Noori.

Foot and mouth disease mitigation in the Afghan Pamir ecosystem. S. Ostrowski, H. Noori, A. Rajabi.

Health surveillance of Marco Polo Sheep in Afghan Pamirs. S. Ostrowski, H. Noori, A. Rajabi

Capacity building in veterinary and wildlife sciences to Afghan counterparts. S. Ostrowski, H. Noori and A. Rajabi.

Capacity building and technical support to para-veterinary initiative in Wakhan, Badakhshan Province. A. Rajabi, H. Noori,

Extent and trends of wild bird trade in Afghanistan. A. Rajabi, H. Noori, S. Naqibullah, S. Ostrowski.

Extent of use of diclofenac in Afghanistan. A. Rajabi, H. Noori, S. Ostrowski

CAMBODIA

Ang Trapeang Thmor Sarus Crane Conservation Project. H. Chamnan, S. Allebone-Webb

Cambodian Vulture Conservation Project. S. Chansocheat, H. Rainey, A. Yang, L. Keatts

Prek Toal Core Area Conservation Project. L. Kheng, S. Visal, S. Allebone-Webb

Sre Ambel Conservation and Turtle Recovery project. H. Sovannara, B. Horne

Tonle Sap Grasslands Conservation Project. H. Chamnan, T. Evans, R. van Zalinge

Northern Plains Conservation Areas Through Landscape Management (CALM) Project. T. Setha, E. Sokha, H. Rainey, A. John

Seima Biodiversity Conservation Area Project. M. Soriyun, P. Phaktra, E. Pollard, H. O'Kelly, T. Evans

Wildlife markets and infectious disease surveillance. L. Keatts, D. Joly, A. Yang, T. Seimon

Assessment of the Asian amphibian trade as a driver in the emergence of pathogens of conservation significance. L. Keatts, A. Johnson, A. Newton

USAID Emerging Pandemic Threats PREDICT Program. L. Keatts, A. Yang, Philippe Buchy, D. Joly

CHINA

Building Government Capacity for an eco-compensation driven local ranger network based on conservation incentive agreements in Chang Tang Nature Reserve, China. A. Kang, H. Zhao, Baizhen, X. Zhao

Amur tiger conservation project. Q. Sun, J. Tang, Y. Ren, T. Liu, D. Miquelle

China border wildlife guardian award. Y. Xie, D. Xiao, J. Wang, B. Liu

- Addressing wildlife trade in Southern China. G. Zhang, M. Zhang, F. Li, S. Robertson, C. Poole
- Chinese alligator reintroduction project. S. Lu, F. Zhang, Y. Xie
- Captive Breeding of the Yangtze giant softshell turtle. S. Lu
- Wildlife conservation and outreach. D. Xiao, J. Wang, B. Liu
- INDIA**
- Tiger and prey population surveys. U. Karanth, S. Kumar, A. Gopalaswamy
- Community leadership for wildlife conservation in Karnataka. P.M. Muthanna, D.V. Girish, N. Jain
- India M.Sc. graduate programme in Wildlife Biology and Conservation. A. Kumar, U. Karanth
- Wildlife habitat consolidation through targeted land purchase. U. Karanth, N. Jain
- Wildlife conservation outreach policy and advocacy. S. Gubbi, P.K. Sen
- Community leadership for wildlife conservation in Tamil Nadu. U. Karanth, P.M. Muthanna, S. Gubbi
- Community leadership for wildlife conservation in Maharashtra. U. Karanth, S. Kumar
- Elephant surveys. V. Goswami, U. Karanth
- Vulture Conservation through Education and Awareness. P. Avari
- INDONESIA**
- Conservation of Southern Sumatra Forests: Bukit Barisan Selatan and Bukit Balai Rejang. M. Nusalawo, C. Permadi, L. Prastowo, R. Usman, Waktre, N. Winarni, B.F. Dewantara, Iswandri, D. Kristiyantono, A.H. Ritonga
- Elephant conservation in Sumatra including resolution of human-elephant conflicts. D. Gunaryadi, A.K. Sumantri, Sugiyo, A. Salampessy, F. Taufik, M. Andri, Kasturi, C.D. Permadi, S. Hedges, M. Tyson
- Conservation of North Sulawesi forests and wildlife including conservation of the endangered Maleo. J.S. Tasirin, I. Hunowu, D. Kosegeran, Usman
- Green Livelihoods: Sumatra & Sulawesi. A. Digdo, A. Wijayanto, I.S.Z. Thayeb, D.A. Rogi, A.W. Boyce, I. M. Hilman, S. Iriyani, Muslim, S. Damanik, R. Noerman, R. Surbakti, F. Hadi, E. Maneasa, S.J.A. Siwu, B. Antonio, S.B. Barahama, M.T. Soleman
- Sumatran Tiger conservation. H.T. Wibisono, M. Kholis, B.P. Baroto, Susilo, Herwansyah, W. Pusparini, L. Prastowo, R. Usman
- Indonesia Wildlife Crime Unit. D.N. Adhiasto, P. Fahlapie, N. Hardianto, Giyanto
- Ecological studies and TEAM at the Way Canguk Research Station. N.L. Winarni, M.H. Nusalawo, Waryono, Wiroto, Sukarman, R. Sudrajat, T. O'Brien
- Bogor Operations including Communication and Law & Policy Divisions. F.M. Saanin, Leswarawati, A.H. Hadi, R.R. Badrunnisa, A. Mubarak, H. Alexander, A.P. Handayani, H. Alfin
- IRAN**
- Conservation of the Asiatic cheetah, its natural habitat and associated biota. S. Ostrowski, P. Zahler
- Database development for Asiatic cheetah GIS modeling and land-use planning. S. Ostrowski
- Education and training on wildlife health and wildlife immobilization practices. S. Ostrowski
- Education and training on management of ungulate prey of cheetah. S. Ostrowski, P. Zahler
- Technical assistance to the capture and study of Asiatic cheetah and Persian leopard in Central Iran. S. Ostrowski
- Scientific and capacity building assistance to the Department of Environment. S. Ostrowski
- LAO PEOPLES DEMOCRATIC REPUBLIC**
- Bolikhamxay integrated ecosystem and wildlife management project. K. Vongduane, A. McWilliam, M. Hedemark, S. Seateun
- Friends of Wildlife Radio Program. S. Saypanya, T. Hansel, S. Sengthavideth, M. Yachitor, K. Ernthavanh
- University Biodiversity Conservation Curriculum Project. S. Pretty, S. Phoumkhamouane, A. Johnson, M. Rao
- Vientiane Capital City wildlife trade project. K. Bounnak, T. Hansel, S. Silithammavong, K. Khammvong
- Tiger Conservation Project – Nam Et-Phou Louey. P. Phetsompheng, A. Johnson, Venevongphet, C. Vongkhamheng, S. Saypanya, S. Pan-Inhuane, S. Sengthavideth, A. Bousa
- TransLinks-Linking Wildlife Management and Rural Livelihoods. A. Johnson, S. Seateun, V. Philakone
- University student research projects. S. Pretty, S. Phoumkhamouane, A. Johnson, T. Hansel
- Xepon Annamite Landscape Project. C. Hallam, M. Hedemark, A. Rasphone, S. Hedges
- Community based crocodile resource management project. M. Hedemark, J. Cox, J. Burrows, O. Thongsavath
- Nam Kading TEAM Project. A. McWilliam, M. Hedemark, T. O'Brien
- Nam Kading Elephant Project. A. McWilliam, S. Hedges
- Assessment of the Asian amphibian trade as a driver in the emergence of pathogens of conservation significance. L. Keatts, A. Johnson, A. Newton, T. Seimon
- USAID Emerging Pandemic Threats PREDICT Program. L. Keatts, D. Joly
- Prevalence of zoonotic *Angiostrongylus* parasites in traded Clouded Monitor Lizards. L. Keatts
- MALAYSIA**
- Wildlife conservation in the Batang Ai / Lanjak Entimau Landscape. M. Gumal, J. Pandong, N. Sidu, L. Haqem
- Wildlife conservation in the Endau Rompin Landscape. M. Gumal, S.H. Liang, A. Azmi, S. Khing, C.P. Low, M. Voon, N. Khalid, M. Bilong, M. Tyson, S. Hedges
- Conservation of wildlife in the production forests in Ulu Baram. J. Mathai, N. Juat, A. Peter
- MONGOLIA**
- Daurian Steppe SCAPES: Governing 'fugitive resources' across national boundaries: Wildlife migrations, illegal trade and habitat fragmentation in the Daurian Steppe. A. Fine, O. Myadar, K. Didier, L. Ochirkhuyag, B. Buuveibaatar, N. Odonchimeg, S. Enkhtuvshin, J. Tallant
- Wildlife trade: protecting Mongolia's wildlife through wildlife trade law enforcement. N. Odonchimeg, A. Fine, B. Turkhuu
- Mongolian saiga antelope conservation. B. Buuveibaatar, J. Berger, S. Strindberg
- Foot and Mouth disease in the Mongolian gazelle (research and disease control policy). S. Bolortsetseg, A. Fine, S. Enkhtuvshin, D. Joly, B. Buuveibaatar
- Wildlife veterinary epidemiology. S. Enkhtuvshin, A. Fine, D. Joly, M. Gilbert
- Community based wildlife monitoring and conservation on the Eastern Steppe. A. Winters, S. Bolortsesseg, A. Fine, G. Bat-Erdene, S. Strindberg
- Eastern Steppe Rare Pride Campaign. S. Bolortsetseg, B. Turkhuu, A. Fine, G. Bat-Erdene, W. Banham
- Improving conservation biology education in Mongolia. J. Tallant, A. Fine, M. Rao, J. Losloma
- Spatial modeling of Mongolia gazelle: distribution and movements across the steppe. B. Buuveibaatar, K. Didier, L. Ochirkhuyag, S. Strindberg
- Business and biodiversity offset approaches in Mongolia. R. Victurine, A. Fine, L. Ochirkhuyag
- Haemoparasites in Mongolian waterfowl. M. Gilbert, L. Jambal, T. Seimon,

D. McAloose, A. Newton, A. Fine, S. Neabore
 Survey of *Toxoplasma gondii* in Mongolian waterfowl. M. Gilbert, L. Jambal, W. Swanson, A. Fine
 Foot-and-Mouth Disease Monitoring in Mongolian Gazelle. D. Joly, A. Fine, S. Enkhtuvshin
 Distribution and status of Pallas Fish Eagle in Mongolian wetlands. M. Gilbert, R. Tingay, L. Jambal.
 Distribution and status of White-naped Crane in the Eastern steppe. M. Gilbert, R. Tingay, L. Jambal.

MYANMAR

Management of the Hukaung Valley Wildlife Sanctuary. T. Myint, S. Htun, S.H.T. Po, Hla Naing, K.T. Latt, M.M. Oo, R. Tizard
 Monitoring of tigers and their prey in Hukaung Valley Wildlife Sanctuary. T. Myint, S. Htun, S.H.T. Po, Hla Naing, K.T. Latt, J. Goodrich
 Monitoring of wild Asian elephants and domestic elephants in Hukaung Valley Wildlife Sanctuary. S. Htun, S.H.T. Po, K.T. Latt, S. Hedges
 Survey of threatened birds in Hukaung Valley Wildlife Sanctuary. T.Z. Naing, N. Lin, R. Tizard
 Irrawaddy dolphin conservation, Irrawaddy River. T. Myint, A.M. Chit, N. Win, B. Smith
 Management of Hkakaborazi National Park. T. Zaw, K.T. Latt, M.M. Oo, R. Tizard
 Turtle conservation. W.K.Ko, K.M. Myo, K. Moe, B. Horne
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PAKISTAN

Community based governance building for wildlife conservation and natural resource management in Gilgit-Baltistan. M. Khan, M.A. Mir, P. Zahler, Zahidullah, M. Ali, M. Jamil, M. Gufran, A. Raqeeb, M. Akbar, M. Wali

Flare-horned markhor conservation and management in Gilgit-Baltistan. M. Khan, M. A. Mir, P. Zahler, Zahidullah, M. Ali, M. Jamil, M. Gufran, A. Raqeeb, M. Akbar, M. Wali
 Assessment of trophy hunting as a conservation tool in Northern Pakistan. S. Ostrowski, M. Khan, P. Zahler
 Conservation of threatened wildlife (Ladakh urial, musk deer, Asiatic black bear, snow leopard and common river otter) in Gilgit-Baltistan. M. Khan, M. A. Mir, Zahidullah, M. Ali, M. Jamil, M. Gufran, A. Raqeeb, M. Akbar
 Community-based conservation and management of forests and forest products in Diامر, Gilgit and Astor districts of Gilgit-Baltistan. M. Khan, M.A. Mir, Zahidullah, M. Ali, M. Jamil, M. Gufran, A. Raqeeb, M. Akbar

PAPUA NEW GUINEA

Customary conservation across land and sea in Papua New Guinea. R. Sinclair, K. Holmes, T. Zeriga-Alone, J. Kuange, A. Arihafa, M. Samson
 Village-based REDD projects in Papua New Guinea. R. Sinclair, T. Zeriga-Alone, J. Kuange, A. Arihafa, M. Samson
 Papua New Guinea Wildlife Centre. R. Sinclair, T. Zeriga-Alone
 Strengthening the ability of vulnerable island communities in Papua New Guinea to adapt to climate change. R. Sinclair, T. Zeriga-Alone, J. Kuange, A. Arihafa, M. Samson

RUSSIA

Siberian tiger project. I. Seryodkin, N. Rybin, V. Melnikov, D. Miquelle, A. Astafiev
 Improving law enforcement effectiveness in tiger source sites. M. Hotte, F. Pamplin, I. Kolodin
 Resolving human-tiger conflicts in the Russian Far East. I. Seryodkin, N. Rybin, A. Rybin, D. Miquelle
 Using camera traps to monitor Amur leopards. A. Kostyria, A. Rybin

Managing hunting leases to improve habitat for tigers outside protected areas. I. Kolodin, R. Kozhichev
 Training the next generation's conservationists in the Russian Far East. D. Miquelle, J. Slaght
 Tigers and leopards of the Changbaishan Ecosystem: Ecology of Siberian tigers and Amur leopards in Southwest Primorye. A. Kostyria, D. Miquelle
 Fire Management in Southwest Primorye. M. Hotte, D. Miquelle
 Improving Wildlife Health capacity in the Russian Far East. D. Miquelle
 Transboundary planning and management of Chinese reserves for tiger and leopard conservation. D. Miquelle, Y. Xie
 Bears of Kamchatka. J. Paczkowski, I. Seryodkin
 Ecology and conservation of Blakiston's fish owl. J. Slaght, S. Surmach
 The Sikhote-Alin Research Center: Fostering the next generation of conservationists. D. Miquelle
 Improving anti-poaching effectiveness in Russian Protected Areas using MIST. M. Hotte, D. Miquelle
 Beringia: Saving the Spoon-billed sandpiper from extinction. D. Miquelle, M. Robards
 Beringia: Conserving birds in arctic Beringia. M. Robards, J. Slaght
 Beringia: Protecting coastal walrus haul-outs in Chukotka. M. Robards, D. Miquelle
 Beringia: International Walrus Haul-Out Monitoring Workshop. M. Robards
 Mortality investigation in Amur Tigers in the Russian Far East. M. Gilbert, D. McAloose, D. Miquelle, S. Enkhtuvshin, D. Joly, T. Seimon
 Wildlife health capacity building in the Russian Far east. D. McAloose, S. Ostrowski, D. Miquelle

TAJIKISTAN

Transboundary Pamirs conservation initiative.

P. Zahler, S. Ostrowski, G. Schaller
 Transboundary ecosystem health in the Pamirs. S. Ostrowski, P. Zahler
 Health survey of Marco Polo sheep and markhor populations. S. Ostrowski

THAILAND

Wildlife conservation in Western Forest Complex Landscape. A. Pattanavibool, M. Umponjan, P. Jornburom, J. Tifong, Dept. of National Parks, Wildlife and Plant Conservation
 Wildlife conservation in Kaeng Krachan Forest Complex Landscape. C. Savini, M. Pliosungnuen, A. Pattanavibool, Dept. of National Parks, Wildlife and Plant Conservation, M. Tyson, S. Hedges

VIETNAM

Reducing the illegal cross-border trade of wildlife between Vietnam and China. S. Robertson, H.K. Thanh, T.X. Viet, D.V. Hong, L.M. Thao, N.T. Nhung, P.T. Minh
 Strengthening law enforcement capacity and building government support to eliminate the illegal trade in protected wildlife in Southern Vietnam. S. Robertson, T.X. Viet, H.K. Thanh, D.V. Hong, L.M. Thao, N.T. Nhung, P.T. Minh
 Leveraging Support from the Vietnamese Corporate Sector to Reduce Illegal Consumption of Protected Species. S. Robertson, D.V. Hong, L.M. Thao, N.T. Nhung, P.T. Minh
 Strengthening capacity for wildlife product identification in Indochina. S. Robertson, T.X. Viet
 Assessment of the Asian amphibian trade as a driver in the emergence of pathogens of conservation significance. A. Johnson, L. Clark, A. Newton, S. Robertson, Nguyen Van Long, T. Seimon
 USAID Emerging Pandemic Threats PREDICT Program. L. Clark, Long Nguyen, Nga Nguyen

Mustapha Nsubuga and Edward Okot, conservationists in the WCS Uganda program, monitor lions fitted with radio collars in Queen Elizabeth National Park.



REGIONAL

Asian Elephant conservation program. S. Hedges, M. Tyson
 CITES Monitoring the Illegal Killing of Elephants (MIKE). S. Hedges, A. Lynam
 Protected Area staff training and capacity building. A. Lynam
 Network of Conservation Educators and Practitioners (NCEP). M. Rao
 Tigers Forever. J. Walston, E. Stokes, J. Goodrich
 Improving law enforcement effectiveness. E. Stokes
 Freshwater turtle and tortoise conservation. B. Horne

LATIN AMERICA & THE CARIBBEAN

ARGENTINA

Sea and Sky: A strategy for conserving open ocean biodiversity in the SW Atlantic. C. Campagna, V. Falabella
 Patagonia coastal zone conservation strategies. G. Harris
 Andean Patagonia Steppe Landscapes: San Guillermo,

Payunia/Auca Mahuida, Tromen. A. Novaro, S. Walker, R. Baldi, M. Funes
 Magellanic penguin ecology and conservation at Punta Tombo. P. D. Boersma
 Seabird ecology and conservation in Patagonia. P. Yorio, F. Quintana, E. Frere, P. Gandini, A. Schiavini
 Ecology and conservation of the Huemul deer. A. Vila
 Natural history and wildlife conservation. W. Conway
 Burrowing parrot research and conservation. J. Masello, P. Quillfeldt
 Identifying and prioritizing a network of conservation areas across the steppe and Monte of Argentine Patagonia. K. Didier, A. Novaro, S. Walker, C. Chehebar, G. Iglesias
 Andean Flamingos. F. Arengo
 Seabird infectious disease surveillance. M. Uhart, F. Quintana
 Developing health indicators to predict reproductive success in seabirds from Patagonia. L. Gallo, M. Uhart, F. Quintana.

Mirikina Owl Monkey Project: impact of habitat fragmentation on owl monkey health. V. Rago, M. Uhart, E. Fernandez Duque
 Impact of human activities on the dynamics of infection with *Rickettsia* spp. in the Paraná River Delta. P. Beldomenico
 Health dynamics of wild capybara populations. P. Beldomenico
 Lead exposure in waterfowl of Santa Fe province wetlands, Argentina. H. Ferreyra, A. Caselli, M. Romano, P. Beldomenico, M. Uhart
 Development of a participatory model to mitigate environmental impacts from spent lead pollution. A. Caselli, M. Romano, M. Uhart
 Assessing the health of the patagonian right whales to determine health risks threatening the recovery of right whales. V. Rowntree, M. Uhart, M. Sironi, D. McAloose, A. Chirife.
 Guanaco parasites: influence of stress and interaction with livestock. V. Rago, P. Beldomenico, C. Marull, P. Moreno, V. Colombo

BAHAMAS

Restoring Allen Cays for Shearwaters and Iguanas in Allen Cays, Exuma Islands, Bahamas. R. Moore

BOLIVIA

Greater Madidi-Tambopata Landscape: Governance for Adaptive Management and Sustainable Livelihoods Across National Boundaries. R. Wallace, L. Painter, O. Loayza, T. Siles, G. Ayala, G. Miranda
 Building the Capacity of CIPTA and the Takana Indigenous Territory for Reduced Deforestation Investment, Monitoring and Implementation. R. Wallace, L. Painter, K. Lara, G. Miranda, Z. Lehm, T. Siles
 Conserving Amazonian Landscapes-Greater Madidi-Tambopata Landscape. R. Wallace, L. Painter, O. Loayza, K. Lara, G. Miranda, E. Salinas, E. Alandia, Z. Lehm
 Consolidating Indigenous Participation for Conservation in the Greater Madidi-Tambopata Landscape. R. Wallace, L. Painter, G. Ayala, O. Loayza, G. Miranda
 Integral Ecosystem Health Program. E. Alandia, M. Uhart
 Conservation and forestry development in the Chiquitano dry forest ecoregion. D. Rumiz, R. Montaña
 Guanaco conservation in the Chaco of Bolivia and Paraguay. D. Rumiz, C. Pinto
 A Third Biodiversity Survey in the Pristine Tropical savanna Forests of Madidi. R. Wallace, G. Ayala
 Domestic animal management and wildlife health in indigenous communal lands of Bolivia. E. Alandia, H. Ticona, R. Wallace, M. Uhart,
 Emerging zoonotic pathogens and risks posed by illegal wildlife trade, Bolivia. E. Alandia, F. Suarez, A. Perez, M. Uhart
 USAID Emerging Pandemic Threats PREDICT Program. M. Uhart, A. Perez, E. Alandia, D. Joly
 Building local capacity for wildlife health in Bolivia. E. Alandia, M. Uhart



Work by WCS Fiji country director Stacy Jupiter (pictured here) and others helped Fiji's Totoya Reef become a Marine Protected Area in 2011.



This year, WCS examined growing threats like development and climate change to the migration of several species, including caribou, in the western United States.

BRAZIL

Ecology and Conservation of the white lipped peccary in the Cerrado and Pantanal. A. Keuroghlian
 Piagaçu-Purus Sustainable Development Reserve- management and conservation. C. Pereira de Deus, A. Cooper
 Wildlife Monitoring of the BR319 in Amazonas. F. Rohe, J. Boubli
 Improving ranching efficiency to protect the biodiversity in the Brazilian Pantanal. A. Keuroghlian, D. Eaton
 Participatory Biodiversity Monitoring in Amazonas. M. de Lima, A. Cooper
 Birds of Brazil. M. Argel, J. Gwynne
 One world one health grants fund. F. Miranda
 PREDICT. C. Dejuste, F. Miranda, M. Uhart
 Ecology and Conservation of the White bellied spider monkey in Roraima. I. Mourthe
 Conservation of the Woolly spider monkey. J. Boubli
 Primate distribution, Taxonomy and Discoveries in the Amazon. J. Boubli, F. Rohe
 One World – One Health: the Linkages of Human, Livestock

and Wildlife Health. F. Miranda, M. Uhart, R. Cook
 Population health assessment of the xenarthros (sloths, anteaters and armadillos) in Southern Pantanal. F. Miranda.
 Survey of occurrence, distribution and genetic analysis of Silky anteater (*Cyclopes didactylus*) in South America. F. Miranda
 USAID Emerging Pandemic Threats PREDICT Program. C. Dejuste, M. Uhart, A. Perez, F. Miranda, D. Joly

BRITISH VIRGIN ISLANDS

Health assessment of endangered stout iguanas on Guana Island, BVI. K Ingerman, J. Paré

CAYMAN ISLANDS

Veterinary support for the Grand Cayman Island iguana recovery program. P. Calle, C. McClave, P. Teledo

CHILE

Conservation management and public use program in Karukinka, Tierra del Fuego. B. Saavedra, R. Muza, F. Repetto
 Tierra del Fuego Invasive Species. B. Saavedra, R. Muza,

C. Moraga, M. Funes
 Karukinka Research and Monitoring. B. Saavedra, R. Muza, C. Moraga
 Tierra del Fuego Economic-Social Development. B. Saavedra, R. Muza, D. Droguett, F. Repetto, C. Moraga
 Conservation in Bernardo O'Higgins National Park. B. Saavedra, R. Muza, A. Vila, D. Droguett, F. Repetto
 Coastal marine conservation and management in Karukinka and southern cone. A. Vila, B. Saavedra, D. Droguett, V. Falabella
 Health monitoring of black-browed albatross and elephant seals in Admiralty Sound, Tierra del Fuego. A. Vila, B. Saavedra, D. Droguet, M. Uhart.

COLOMBIA

Conservation of endangered primates of the Magdalena Valley. N. Roncancio, P. Franco, A. Acosta, L. Garcia, Y. Toro
 Ecology and conservation of key elements of the biodiversity in the Central Andes of Colombia. P. Franco, V. Rojas, J. Velasco, C. Gutiérrez, N. Roncancio,

C. Rios, C. Saavedra, J. Corrales, J. Martínez
 Technical assistance for the design and implementation of a regional system of protected areas for the coffee growing region of Colombia. P. Franco, V. Rojas, J. Velasco, C. Gutierrez, C. Rios, W. Cardona, N. Roncancio, J. Martínez, G. Ríos
 Spectacled Bear Conservation in the Andes of Colombia. R. Marques, I. Goldstein, P. Franco, J. Martínez
 Building local capacity for conservation research and planning. N. Roncancio, J. Velasco, C. Gutiérrez, P. Franco
 Capacity building and surveillance of Avian Influenza in Colombia. N. Roncancio, G. Cardenas, F. Gonzales, F. Ayerbe
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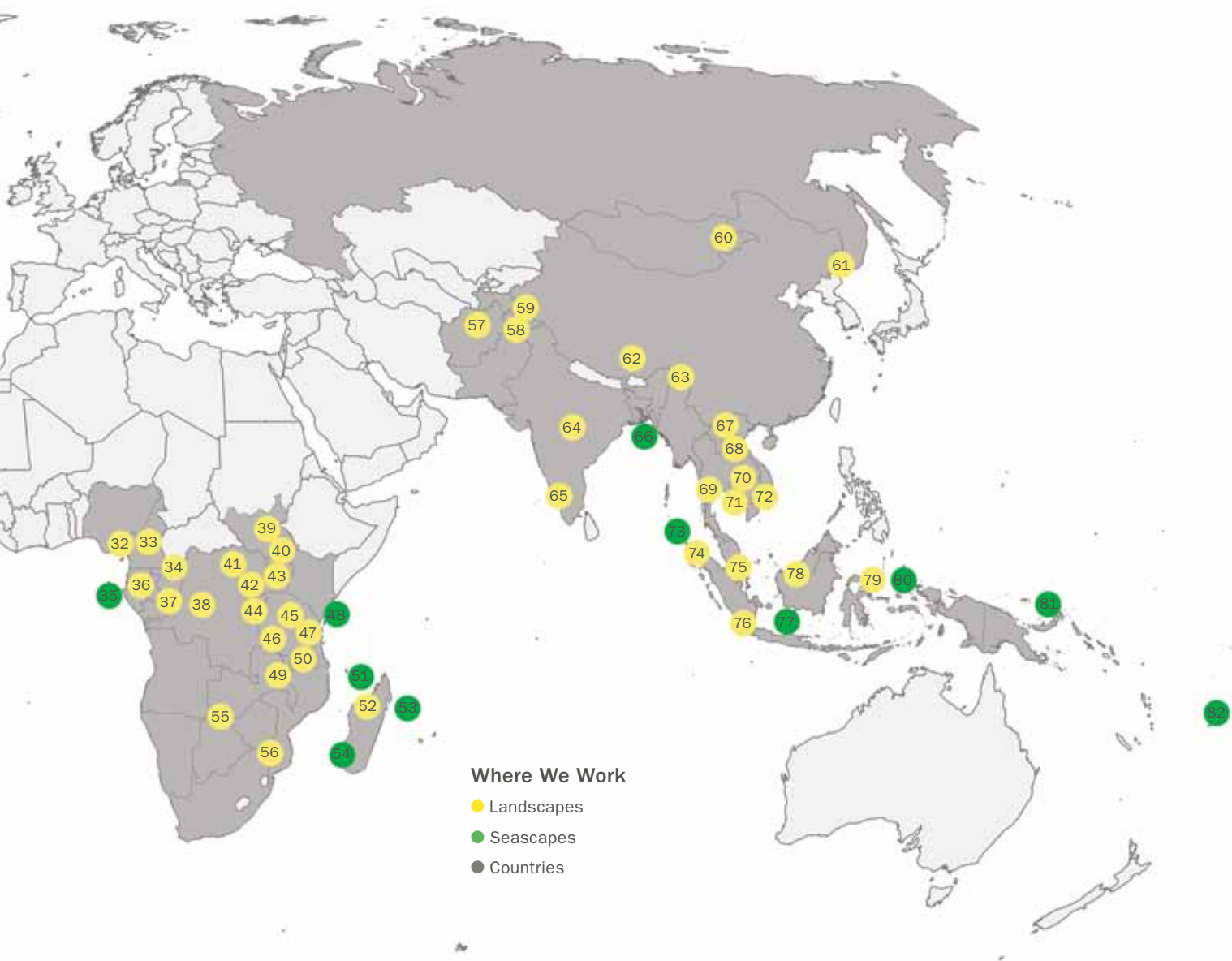
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QA

ANTHONY BROWNIE



Anthony Brownie's 35-year career with WCS took him from a summer job working on the Bronx Zoo Skyfari ride to his position today as Collection Manager at the Central Park Zoo, where his responsibilities include breeding and husbandry programs. Here, he discusses traveling to Belize for a jaguar camera trap project, the prized Siamese fighting fish of his youth, and what it feels like to have your dream job.

WHAT MAKES YOU PASSIONATE ABOUT YOUR JOB?

My love of animals and living in New York City.

WHAT ARE THE BIGGEST CHALLENGES YOU FACE IN YOUR WORK?

Working with and training new staff members about husbandry. Many people come into this field because they love animals, but few have a real feel for working with and around animals.

HOW HAVE ANIMAL HUSBANDRY AND ENRICHMENT ACTIVITIES CHANGED SINCE YOU STARTED WORKING IN THIS FIELD?

We have more developed and formalized training programs and enrichment has become a key part of animal care in all zoos.

WHAT IMPACT DO YOU HOPE TO HAVE ON GUESTS TO THE CENTRAL PARK ZOO?

After visiting our parks visitors walk away with a yearning to learn more about animals and the current state of the world. This is especially true of CPZ because of the large numbers of international tourists we get here.

CAN YOU SHARE WITH US ONE OR TWO OF THE ANIMALS YOU'VE MOST ENJOYED WORKING WITH?

I think working with snow leopards and opening the Himalayan Highlands exhibit at the Bronx Zoo was very special for me. It was great being part of that then, and it is great now to be a part of the new snow leopard exhibit here at CPZ. After working in the mammal department in the Bronx, moving to CPZ and learning about bird husbandry was amazing at that point in my career.

HOW DO WCS'S FIVE PARKS WORK WITH EACH OTHER IN MANAGING THEIR COLLECTIONS?

We work together mostly through weekly meetings of curatorial staff to discuss changes in the animal collections, as well as future breeding and husbandry programs. The city zoos also work closely together to coordinate shipments and quarantine availability between the parks.



This year we hand-reared four gentoo and four chinstrap penguins – more penguins than we've reared at Central Park in the last 4-5 years combined.

“

I grew up in the Bronx and wanted to work on a farm. Working in the Bronx Zoo was the closest I could come to doing that without leaving New York City.

LOOKING BACK AT 2011, WHAT ARE SOME OF THE MOMENTS AT THE CENTRAL PARK ZOO THAT STAND OUT?

The Fifth Avenue peacock escape was a situation that could have turned into a PR nightmare, but the animal, security, and Public Affairs division staff turned it into a great example of how committed and professional WCS staff are, and how well we work together in difficult situations. This year we also hand-reared four gentoo and four chinstrap penguins. That is more penguins reared here at Central Park than in the last 4-5 years combined. We also hatched out and raised seabirds this year.

WHAT DREW YOU TO ZOOLOGICAL WORK IN THE FIRST PLACE?

I grew up in the Bronx and wanted to work on a farm! Working in the Bronx Zoo was the closest I could come to doing that without leaving New York City. The funny thing, though, is that I never got to work with farm animals until recently.



WHEN DID YOUR INTEREST IN ANIMALS BEGIN?

Growing up I always had animals. I showed dogs and also fish. I even traveled to Florida to enter a prized Siamese fighting fish in a show when I was treasurer of the Bronx Aquarium Society. After moving out of my family's house in the Bronx, two roommates and I (all keepers) moved into Soho with two cats, a dog and a five-foot python. Everything was fine until one hot summer night, when the python escaped...

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

Traveling to Belize to help set up cameras for a jaguar project. I broke my toe in the process but I would do it over again in a second.

WHAT IS YOUR PROUDEST ACHIEVEMENT?

It makes me proud to realize I am one of the few people who can honestly say they have the job they dreamed about having as a child. I live in the greatest city in the world and get to work in a magnificent park every day. How many of us still love getting up and going to work for the same organization after 35 plus years?



[OPPOSITE] Anthony Brownie.

[ABOVE] The opening of the Himalayan Highlands snow leopard exhibit at the Bronx Zoo is a highlight of Anthony's tenure with WCS.

[BELOW] Two of eight penguin chicks hand-reared at the Central Park Zoo in 2011.



This Victoria crowned pigeon at the Prospect Park Zoo, native to New Guinea, faces pressure in the wild due to hunting for its plumage and meat.

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U.S. FEDERAL AGENCIES

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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
Environmental Protection Agency
Forest Service
Fish & Wildlife Service
Geological Survey
Institute of Museum and Library Services
National Institutes of Health
National Oceanic and Atmospheric Administration
National Parks Service
National Science Foundation
Postal Service

U.S. STATE AGENCIES

Alaska Department of Fish & Game
Idaho Department of Fish & Game
Idaho Department of Transportation
Montana Fish, Wildlife & Parks
New York State Department of Environmental Conservation

New York State Energy Research and Development Authority (NYSERDA)
New York State Office of Parks, Recreation and Historic Preservation
Northeast States Research Cooperative

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AusAID, Australia
Australian Antarctic Division, Department of Sustainability, Environment, Water, Population and Communities
Canadian International Development Agency (CIDA)
Danish International Development Agency (DANIDA)
Darwin Initiative, United Kingdom
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German Federal Ministry for Economic Cooperation and Development (BMZ)
German Society for International Cooperation (GIZ)
Ministry of Environment, Nature Conservation, and Tourism, Democratic Republic of Congo

Ministry of Tourism, Republic of Mozambique
Natural Environment Research Council (NERC), United Kingdom
Norwegian Agency for Development Cooperation (NORAD)
Singapore Economic Development Board

INTERNATIONAL AGENCIES

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
The EU-China Biodiversity Programme
European Bank for Reconstruction and Development (EBRD)
Great Lakes Fishery Commission
Global Environmental Facility
Indian Ocean Commission
International Whaling Commission
United Nations Development Program
United Nations Environment Program
United Nations Educational, Scientific & Cultural Organization
Western Indian Ocean Marine Science Association
The World Bank



[ABOVE] Volunteers participate in clean-up activities in the Bronx River as part of restoration efforts supported by the National Oceanic and Atmospheric Administration (NOAA).

[RIGHT] John Robinson, WCS Executive Vice President for Conservation and Science, joins *Vampire Diaries* star Ian Somerhalder in testimony before the House Natural Resources Subcommittee to support Multinational Species Conservation Funds.





[LEFT] WCS Executive Vice President for Global Resources Bertina Ceccarelli with son John Coburn, New York City Council Member Domenic Recchia, and New York State Assemblyman Alec Brook-Krasny at the inaugural WCS Run for the Wild at the New York Aquarium in Coney Island, Brooklyn.

U.S. FEDERAL GOVERNMENT SUPPORT

In FY11, the U.S. Agency for International Development (USAID) continued its support of WCS conservation activities in central Africa (Central Africa Regional Program for the Environment) and the upper reaches of the Amazon (ICCA), as well as South Sudan, Afghanistan, Ecuador, Uganda, Tanzania, Rwanda, Bolivia, and Guatemala. At the global scale, USAID continued its support for the SCAPES (Sustainable Conservation Approaches in Priority Ecosystems) and TransLinks programs led by WCS, and the PREDICT program under partnership with the University of California, Davis.

New support from USAID in FY11 included funds to increase the effectiveness of anti-poaching efforts related to Amur tigers in key parts of their range in the Russian Far East; and for a partnership with the Rainforest Alliance to strengthen forest protection and biodiversity conservation in Guatemala. With USAID support, WCS began a program in Paraguay to reduce the rate of deforestation and biodiversity degradation in the Chaco, as well as promote landscape restoration in the Atlantic Forest region.

The U.S. Fish & Wildlife Service awarded nearly \$4 million to the WCS species conservation and capacity building programs throughout Africa, Asia, and the Americas.

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

CITY AND STATE GOVERNMENT SUPPORT

City 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; Council Member Domenic M. Recchia, Jr., Chair, Finance Committee; and the Bronx and Brooklyn New York City Council delegations. The City of New York is vital to the public/private partnership on which WCS's service to the people of New York rests.

New York State Support

WCS is grateful to 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.

QA

BONNIE RAPHAEL



Dissecting road-kill while growing up in western Michigan, Bonnie Raphael knew she wanted to be an animal doctor. Here, our Department Head for Wildlife Medicine in the WCS Global Health Program describes three decades of veterinary work that includes developing vaccination protocols for okapi, reintroducing captive-bred alligators to China, and glimpsing a bongo in the wild on her 50th birthday.

WHAT KEEPS YOU PASSIONATE ABOUT YOUR JOB?

There are a couple of things. First of all, in wildlife medicine one can say on almost a daily basis that one is doing something that one has never done before. So, it stays interesting and challenging. Secondly, I'm working in the best zoo-based conservation organization in the world. If I have a bad day, I can always buoy myself by taking a long look and reflect on the fact that I help affect conservation and welfare of animals by being a part of WCS.

WHAT ARE THE BIGGEST CHALLENGES YOU FACE IN YOUR WORK?

The biggest challenge of working with wild animals is just that. They are wild and therefore not as amenable to handling as domestic animals. One of the most important skills that one uses is observation, being able to assess animals as they stand in the field, perch in a bush or swim by. We seldom have our hands on an animal to do physical exams prior to having to anesthetize them, which means that each anesthetic event is a significant challenge. There is also the challenge of working on extremely diverse creatures. For instance, even the relatively simple procedure of doing dental work requires very different equipment when working on a rhinoceros versus a mouse lemur; or doing ultrasound on an okapi versus a viper to diagnose pregnancy requires knowledge of diverse anatomy.

CAN YOU DESCRIBE ONE OF THE MOST MEMORABLE PROJECTS YOU HAVE WORKED ON?

In the course of my career, okapi have gone from being one of the rarest creatures in zoos to having an expanding captive population. In the early 1980's, there were so few animals – based in 4 zoos – that I knew the names of each. Infant mortality was a major obstacle, as was lack of knowledge about reproductive cycles and pregnancy diagnosis. I was fortunate to work

at a zoo where there was a group of okapi and an animal management team that afforded me the opportunity to contribute to solving both of those problems. Some of the advances we made in neonatal care included developing vaccination protocols, monitoring, and even performing blood transfusions. In the area of reproductive research, we worked on developing non-invasive methods of pregnancy diagnosis and embryo transfer in okapi. This was happening just as WCS researchers were unlocking the mystique of these animals in the wild.

HOW DOES THE WORK OF THE ZOO-BASED VETERINARY STAFF RELATE TO WCS'S GLOBAL CONSERVATION EFFORTS?

The procedures we use in zoos are, more and more, becoming those that are needed in the field. As wild places become more constrained, challenges such as disease diagnosis and prevention are becoming more important. Vaccination procedures worked out on captive animals, such as African wild dogs, are being used to protect animals in the wild. Anesthetic drugs, dosages, and combinations are used first on captive animals as well. And, we provide training both here in New York as well in range countries (Burma, Colombia, Guatemala, China, Vietnam) to many levels of professionals.

HOW DO THE VETERINARY STAFF AT WCS'S 5 PARKS WORK WITH EACH OTHER?

We're all based at the Wildlife Health Center at the Bronx Zoo. Every morning during the week we meet with the pathologists, veterinary technicians and animal care staff to review cases and map out what's going to be done during the day. All of the parks have clinics, and the aquarium has a fully-equipped, state-of-the-art hospital, so most veterinary procedures are performed at those facilities. However, when more extensive work or round-the-clock veterinary care is required, animals come to the Wildlife Health Center.



As wild places become constrained, disease diagnosis and prevention are more important. Procedures for captive animals are being used to protect animals in the wild.

We have two veterinary residents who live on grounds and perform after-hours treatments and intensive care.

COULD YOU DESCRIBE SOME OF YOUR RESEARCH PROJECTS IN 2011?

We worked with the US Fish and Wildlife Service right here in New England to investigate the health status of bog turtles. Weighing only four ounces, they are the smallest turtles in North America. They've been brought to the brink of extinction by destruction of habitat, over-collection for the pet trade, and now possibly disease. Working with local biologists, we performed health assessments on turtles from four different populations.

WHAT DREW YOU TO VETERINARY MEDICINE IN THE FIRST PLACE?

As a child, growing up in a non-farming rural area of Michigan, my best friends were animals. My parents were very supportive of my pronouncement, at an early age, that I wanted to be an animal doctor. That support continued right up through my professional training. This was at a time when women in the profession were very unusual, when there were quotas on how many women were admitted to veterinary school. Being able to work outdoors, with animals, in a scientific field, was a combination that held such allure for me that I never questioned what I needed to do with my life. My vision didn't include zoos or wildlife medicine until after I graduated from veterinary school and had been in private practice. Then, the vision of being able to make a difference in species conservation became the stronger draw.

TELL US MORE ABOUT YOUR CONNECTION TO ANIMALS AS A CHILD.

My days were filled with my cats, dogs, and horses in an area of western Michigan where it wasn't uncommon to encounter wildlife in the forests and dunes. Many of my friends and I had horses that we spent a good portion of our summers riding. I would often bring dead animals that I found during our rides—road-kill and the like—back home and dissect them. To say that my family found this distasteful would be an understatement!

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

I was the veterinarian on the team that performed the first re-introductions of captive bred Chinese alligators in China. Working with John Thorbjarnarson, our team in China, veterinary technician Karen Ingerman, and many others, I had the opportunity to see our work come to fruition. The Chinese alligators released on Chong Ming Island later reproduced in the wild. Personally, one of the most thrilling moments was glimpsing a bongo in the wild while doing fieldwork in Congo with Paul Elkan on my 50th birthday!

WHAT PART OF YOUR WORK FOR WCS MAKES YOU PROUDEST?

I'm proudest to be a significant contributor to the WCS team of veterinarians, veterinary technicians and animal care personnel by providing high quality care for captive wild animals, pushing the envelope in providing veterinary expertise to free-ranging animals and providing education for the next generation of zoo and wildlife veterinary professionals.



[OPPOSITE] Bonnie Raphael.

[ABOVE] Bonnie with a tawny frogmouth, a bird species native to Australia.

In June, 2011, the Bronx Zoo's Mei Mei (pictured here) gave birth to the park's first red panda cub since 2006.



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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*

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 Keeper*
Celia Ackerman, Veronica Correa, Tumeca Gittens, Shanna Dempsey, Luis Jimenez, Diana Major, Bill Robles, Jeff Schmidt, Gretchen Stoddard, Brian Lassegard, Kyle Germano, Karen Pedevillano, Angel Ocasio, Veronica Thomas: *Wild Animal Keepers*

Operations & Maintenance

Igor Laboutov, *Director of Operations, City Zoos*
Edwina Jackson, *Secretary*
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

Stephen Carey, *Assistant Facility Director*
John Geist, *Manager*
Jolanta Lewinska, *Assistant Manager*
Fitzroy Neufville, 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 Cocomma, Cristina Vieira: *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 & Living Systems

Catherine McClave, *Curator of Aquatic Health and Living Systems*
Marisa Ostek, Patricia Toledo, 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, Peter Inesti, Eldwin Lebron, Alicia Shannon: *Attendants*

PROSPECT PARK ZOO

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

Animal Programs

Terry Webb, *Collection Manager*

Dominick Dorsa, *Animal Supervisor*
Jamie Ries, *Animal Supervisor*
Nicole Shelmidine, *Assistant Supervisor*
Hulya Israfil, Leslie Steele,
Jennifer Greig, Frances Verna:
Senior Wild Animal Keepers
Gwen Cruz, Crystal Dimiceli, James
Gottlieb, Astra Kalodukas, Atu
Marshall, Fran Moghab, Denielle
Muonio, Justine Wilber, Kate
Massarone: *Wild Animal Keepers*
Karen Wone, *Veterinary Technician*

Operations & Maintenance

Anthony Boodoo, *Manager*
Rafael Ramirez, *Assistant Manager*
Oscar Ceron, Reginald McKenzie,
Chaitram Singh, Shivanand
Sookdeo: *Zoo Park Maintainers*
Selwyn Ramnaidu, *Assistant Zoo Park Maintainer*
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*
Rogelio Dickens, Michael Fazzino,
Vincent Ferguson, Kadeshia
Brown, David McPhearson,
Yolanda Smith, Jennifer Soto,
Romualdo Vasquez, Milton
Williams, Rosa Ellis, Sylvia
Albert: *Assistant Zoo Park Maintainers*
Lola Chung, Brenda Martinez,
Nicole Smith, Suheilae Vasquez:
Ticket Agents/Cashiers

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, David
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, Dhandeo Shankar,
Vilson Zeko: *Assistant Zoo Park Maintainers*
Tina Anderson, Joanne Crespo,
Augustella Zeko: *Ticket Agents*

GLOBAL CONSERVATION

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Chair in Conservation Strategy
Joshua Ginsberg, *Senior Vice President*
Leticia Orti, *Director, Conservation Operations*
Sandra Comte, Todd Olson
Matthew Hatchwell, *Director WCS Europe*, Martin Callow
William Conway, Holly Dublin,
Margaret Kinnaird, Eric
Sanderson, George Schaller:
Senior Conservationists

PROGRAM DEVELOPMENT

Susan Tressler, *Vice President*
Lisa Gaylord, *Director*
Liz Lauck, Annie Mark, Elizabeth
McDonald, Silvina Weihmuller

CONSERVATION SUPPORT

David Wilkie, *Director*
Will Banham, *Associate Director*
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Alfred DeGemmis, Karl Didier,
Lynn Duda, Kim Fisher, Lisa
Hickey, Christina Imrich,
Danielle LaBruna, Kate Mastro,
Nalini Mohan, Tim O'Brien, Rob
Rose, Emily Sahl, Samantha
Strindberg

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Elizabeth Bennett, *Vice President of WCS Species Program*
Simon Hedges, Brian Horne,
Elizabeth MacFie, John Polisar,
Howard Rosenbaum, Monica
Wrobel

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Todd Stevens, *Executive Director*
Helen Crowley, Michael Painter,
Ray Victorine: *Associate Directors*
Marisa Arpels, Zach Barasz,
Carter Ingram, Anton Seimon,
James Watson



WCS Executive Vice President & General Director and Bronx Zoo Director Jim Breheny appears monthly on Good Day New York/Fox 5 in segments promoting the Bronx Zoo and all of WCS's work. Here, Jim discusses winter zoo attendance during an interview with reporter Jill Nicolini.

AFRICA

James Deutsch, *Executive Director*,
Graeme Patterson, Kirstin Siex:
Deputy Directors

Alastair Nelson, *Assistant Director*

Jennifer Kennard, Fiona Maisels,
David Moyer, Amy Pokempner,
Mandy Tshibangu

Cameroon

Rufin Dupleix Ambahe, Ngalamo
Josiane Armele, Nanfack
Nguejim Borel, Anthony
Nchanji Chifu, Albert Ekinde,
Bernard Fosso, Roger Fotso,
Romanus Ikfuingei, Marie
Odile Kabeyene, Pius Awungjia
Khumbah, Indah Kuchambi Eni,
Gwendoline Kwankam, Joseph
Liwongo Mulema, Mbalnoudji
Ngodjo Nnodjim, Aaron
Nicholas, David Nzouango,
Jean Bosco Pouomegne, Olivier
Sene, Andre Hilaire Siko,
Eleonore Mewambe Tchameni,
Ymke Warren

Central Africa Republic

Andrea Turkalo

Chad

Ben Evans

Democratic Republic of Congo

Joelle Badesire, Arcel Bamba,
Stephanie Bofua, Leonard
Chihenguza, Floribert Bujo
Dhego, Benjamin Ntumba
Kaciela, Baby Ngungu
Kasareka, Isabelle Kasongo,
Emmanuel Kayumba, Deo
Gracias Kujirakwinja, Innocent
Liengola, Jacob Madidi, Crispin
Mahamba, Jean-Remy Makana,
Joel Masselink, Robert
Mwinyihali, Boni Nyembo,
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Othep, Raymond Paluku, Papy
Shamavu, Richard Tshombe,
Alain Twendilonghe, Ashley
Vosper

Republic of Congo

Rene Aleba, Patrick Boundja,
Thomas Breuer, Christain
Burren, Richard Malonga,
Nazaire Massamba, Jerome
Mokoko, David Morgan, Aline
Ndombi, Tomo Nishihara,

Nirina Rakotomahefa, Desire
Rakondranisa, Crickette
Sanz, Vince Smith, Paul Telfer,
Felin Twagirashyaka, Hilde
VanLeeuwe, Moise Zoniaba

Gabon

Rostand Aba'a, Gaspar Abitisi,
Romain Calaque, Martin Hega,
Jeannick Le Rouzic-Berthelot,
Franck Lepemangoye, Quevain
Makaya, Elise Mazeyrac-
Audigier, Modeste Mengue,
Yves-Eric Moubagou, Narcisse
Moukoumou, Sandra Nse
Esseng, Caroline Pott,
Tim Rayden, Olivia Scholtz,
Malcolm Starkey, Ruth Starkey

Ivory Coast

Felix Koffi Brou, Kouame Djaha,
Akoï Kouadio, Traore Mammoudou

Kenya

Margaret Kinnaird, Timothy
O'Brien, Rosie Woodroffe

Madagascar

Christopher Holmes, Francisco
Ramananjatovo, Stevens
Ramaroson, Cesaïre Ramilison,
Bemahafaly Randriamanantsoa,
Nalisoa Randriambololona,
Mireille Sylvia Randriankinasa,
Luccianie Raonison, Felix
Ratelolahy, Andriamandimbisoa
Razafimpahanana, Angela
Razafimandimby, Judicael
Marie Zafindrandalan

Nigeria

Jonas Attah, Fidelis Atuo,
Andrew Dunn, Inaoyom Imong,
Celestine Mengnjo, Michael
Moki, Louis Nkonyu, Ogechi
Nwachukwu, Gilbert Nyanganji,
Francis Okeke, Mark Otu

Rwanda

David Baligomwa, Jean
Pierre Bayavuge, Innocent
Buvumuhana, Jean Baptiste
Gakima, Venuste Gakuru,
Gratien Gatorano, Claude
Habimana, Jacques
Hakizimana, Vincent
Hakizimana, Samuel
Harelimana, Gratien
Kamarampaka, François
Kamatari, Charles Karangwa,

Mediatrice Bana, Michel
Masozera, Camille Mpogazi,
Emmanuel Mpumuje, Celestin
Mugemngango, Pierre
Mukeshimana, Felicien
Mulindagwe, Félix Mulindahabi,
Silvestre Mulindankaka,
Joseph Munyarukaza, Jean-
Bosco Mureritesi, Felicien
Musonera, Berthe Mutirabura,
Robert Mwunvaneza, Gratien
Ndiramiye, Joseph Ngango,
Ferdinand Ngayabahiga,
Venerand Ngirababyeyi,
Abraham Ngiruwonsanga,
Gerard Ngizwenumwe, Aaron
Nicholas, Francois Nkurunziza,
Vedaste Nsanzumuhire,
Barakabuye Nsengiyumva,
Andre Nsengiyunva, Augustin
Ntamunzo, Nicolas Ntare,
Theoneste Nzabonimana,
Eraste Nzakizwanayo,
Innocent Nzaramba, Fidele
Ruzigandekwe, Celestin
Sebashyitsi, Pierre Sebishihé,
Innocent Semahoro, Anastase
Semana, Védaste Sentama,
Claude Senyenzi, Martin
Sindikubwabo, Claudine
Tuyishime

South Sudan

Pasquina Acidria, Anchu Aisha,
Paul Alexander, Lopoyok
Augustino, Paul Peter Awol,
Oling Bush, Robert Craig,
Paul Elkan, Sarah Elkan, Falk
Grossman, Atia Joseph, Juan
Juliet, Thomas Kamau, Joyce
Kilonzi, Michael Lopidia, Albert
Schenk, Moses Taban, Charles
Tiba, John Moi Venus, Michelle
Wieland

Tanzania

Yahaya Abeid, Sharifa Aziz, Claire
Bracebridge, Nico Chadali,
Edmund Chota, Emmanuel
Chota, Tim Davenport, Sarah
Durant, Said Fakh, Charles
Foley, Lara Foley, Musa
Fweni, Hilal Hakiba, J. Haruna,
Mustafa Hasanali, Machaku
Hassan, Shaaban Imani, Abass
Juma, Ayubu Kajigili, Ali Kasim,
Miza Khamis, Salim Khamis,
Omari Kibure, Sylvanos Kimiti,
Paul Kirway, Samuel Kishosha,
Meshack Laizer, Daniela de

Luca, Jane Lugome, Sophy
Machaga, M. Madawa, Paulo
Maingo, Habib Abdul Majid,
Bakari Mbano, Nuru Mbano,
Vicky Mbofu, Joseph Mbombwe,
Amnoni Mbubha, Gwamaka
Mbwina, Fedy Mdemu,
Ramadhani Mduruma, Michele
Menegon, Bonaventura Mhiche,
Richard Mlangalila, Allen
Mmbaga, David Moyer, Noah
Mpunga, Joseph Mshana,
Rogasian Mtana, Michael
Munisi, David Mutekanga,
Peter Mvungi, Atupakisye
Mwaibanje, Obaida Mwaipungu,
Lusajo Mwakalinga, Charles
Mwakasele, Gidion Mwakila,
Kelvin Mwalukasa, Willy
Mwalwengele, Buto
Mwambuneke, Christopher
Mwampetele, Kisah
Mwasalwiba, Eliah Mwasyove,
Ibrahim Ngailo, Emma Ng'ara,
Japhet Njango, Joshua Nsagaje,
Joseph Nyegu, Guy Picton
Phillipps, Mwakiro Rajab,
Almas Ramadhan, Hamisi
Sadallah, Leba Sambilimwaya,
Haruna Sauko

Uganda

Sam Ayebare, Ben Beinomugisha,
Carol Bogezi, Jan Broekhuis,
Ivan Buyondo, Asaph
Byamukama, Miriam van Heist,
Bosco Kirama, Ben Kirunda,
Scovia Kobusingye, Beatrice
Kyasiimire, Alastair McNeilage,
Tutilo Mudumba, Hamlet
Mugabe, Wilson Muhumuza,
Paul Mulondo, Geoffrey
Mwedde, Simon Nampindo,
Grace Nangendo, Mustapha
Nsubuga, Santo Ojara, Edward
Okot, Robert Okumu, Sarah
Opimo, Wilbroad Owor, Juliet
Owor, Andrew Plumtre, Sarah
Prinsloo, Douglas Sheil,
Warren Turinawe, Juraj Ujhazy,
Christine Vuciri

Zambia

Dale Lewis

ASIA

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

Regional

John Goodrich, Antony Lynam,
Emma Stokes

Regional Conservation

Hub-Singapore

Colin Poole, Bee Choo Ng,
Madhu Rao

Afghanistan

Ayub Alavi, Dad Ali, Inayat Ali,
Peter Bowles, David Bradfield,
Zabihullah Ejiasi, Mary Heslin,
Muhammad Ismael, David
Lawson, Ali Madad, Zalmi
Moheb, Sweeta Mohmand,
Sayed Naqibullah, Hafizullah
Noori, Rob Obendorf, Stephane
Ostrowski, Arif Rahimi,
Hafizullah Rahmani, Haqiq
Rahmani, Qais Sahar, Khwaja
Sediq, Mohammed Shafiq,
Chris Shank, Anthony Simms,
Saboor Sultani

Cambodia

Hong Chamnan, Song Chansocheat,
An Dara, Tom Evans, Mark
Gately, Nhem Sok Heng,
Ashish John, Long Kheng, 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, Minfang Gan, Aili
Kang, Fengliang Li, Shengbiao
Li, Bin Liu, Tong Liu, Shunqing
Lu, Yi Ren, Quanhui Sun, Jirong
Tang, Jingjing Wang, Donna
Xiao, Yan Xie, Guihong Zhang,
Mingxia Zhang, Huaidong Zhao,
Wenbo Zhu

India

Arjun M. Gopalaswamy, Sanjay
Gubbi, A. V. Haridevan, Rajah
Jayapal, Ullas Karanth, Ajith
Kumar, N. Samba Kumar,
P.M. Muthanna

Indonesia

Dwi Nugroho Adhiasto, Harry
Alexander, Herovan Alfin,
Noviar Andayani, Mohamad
Andri, Big Antono, Fitri Ariyanti,
Runy R. Badrunnisa, Samsared

B. Barahama, Bambang
P. Bharoto, Agus W. Boyce, Nick
Brickle, Sarmadah Damanik,
Bonie F. Dewantara, Akbar
Ario Digdo, Patih Fahlapie,
Giyanto, Donny Gunaryadi, Agung
Hawari Hadi, Firman Hadi, Novi
Hardianto, Herwansyah, Ian
M. Hilman, Iwan Hunowu, Silfi
Iriyani, Munawar Kholis, David
Kosegeran, Deasy Krisanti,
Usman Laheto, Leswarawati,
Fazrie Taufik Lubis, Edyson
Maneasa, Athaya Mubarak,
Muslim, Meyner Nusalawo,
Cep Dedi Permadi, Maya
D. Prasetyaningrum, Lilik
Prastowo, Wulan Pusparini,
Danny Albert Rogi, Edward
E. Rumapea, Frida Mindasari
Saain, Adnun Salampessy,
Agus Hadi Santoso, Silvia,
Stephen Siwu, Vicky Soleman,
Synthia Soputan, Sugiyo, Ade
Kusuma Sumantri, Rudianto
Surbakti, Susilo, Yonata M.
Syarief, John Tasirin, Irsan SZ.
Thayeb, F. Noni Tirtaningtyas,
Rusli Usman, Waktre, Arma
Wati, Agustinus Wijayanto,
Hariyo Wibisono, Nurul Winarni

Lao PDR

Keophithoune Bounnak,
Anita Bousa, Souksavath
Chanthangeun, Mattiphob
Douangmyxay, Sivilay
Duangdala, Paul Eshoo,
Chris Hallam, Troy Hansel,
Michael Hedemark, Arlyne
Johnson, Kongsy Khamvong,
Xaisavanh Khiewvongphanchan,
Sally Lambourne, Alex
McWilliam, Singkeo Milasack,
Colin Moore, Lucy Ogg, Oudone
Phakphothong, Soudalath
Phasavath, Vanida Philakone,
Bounthavy Phommachanh,
Houmphanh Phompanya,
Sinthone Phoumkhanouane,
Sengphet Pinsouvanh,
Sue Pretty, Akchousanh
Rasaphone, Santi Saypanya,
Soulinphone Saysinghan,
Daovanh Senghalath,
Sisomphone Sengthavideth,
Soubanh Silithammavong,
Bouavanh Sinpaseuth,
Choumkham Sivilay, Soumalie
Sygnavong, Dtoui Tavanh,



Soukdavanh Thilakhoun,
Maikain Vilayvanh, Chansack
Vongkhamheng, Chanthavy
Vongkhamheng, Sithon
Vongphavanh, Vene Vongphet,
Sithone Vongphothong, Vad
Vongphothong, Muas Yachithor

Malaysia

Azima Azmi, Melissa Bilong, Eunice
Chia, Melvin Gumal, Ngumbang
Anak Juat, Norhidayati Khalid,
Khing Su Li, Song Horng Liang,
Chee Pheng Low, John Mathai,
Eling Ng, Sylvia Ng, Joshua
Pandong, Mufeng Voon

Mongolia

Otgonsumiya Badmaa, Turkhuu
Bilegt, Tanyatuya Demberel,
Amanda Fine, Bat-Erdene
Gomsuren, Losolmaa Jambal,
Ochirkhuyag Lkhamjav,
Orkhon Myadar, Odonchimeg
Nyamtseren, Bolortsetseg
Sanjaa, Enkhtuvshin
Shiilegdamba, Agizul Sosor,

Vandandorj Sumiya, James
Tallant, Narantsatsral Urtnasan,
Ann Winters

Myanmar

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

Papua New Guinea

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

Russia

Andre Dotsenko, Samantha Earle,
Evgeny Gishko, Cheryl Hojnowski,



The Bronx Zoo is raising juvenile hellbender salamanders that will be released back into the wilds of western New York.

Michiel Hotte, Sergei Hromylev, Natalia Karp, Igor Kolodin, Denis Korchargin, Alexei Kostyria, Vladimir Melnikov, Clay Miller, Dale Miquelle, Marina Miquelle, Katya Nikolaeva, John Paczkowski, Fiona Pamplin, Tanya Perova, Alexander Reebin, Nikolai Reebin, Anton Semyonov, Ivan Serodkin, Jon Slaght, Svetlana Soutryina

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, 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 Van Long, Pham Thi Minh, Scott Robertson, Tran Xuan Viet

LATIN AMERICA & THE CARIBBEAN

Avecita Chicchón, *Executive Director*
Julie Kunen, *Appointed*
Mariana Varese, *Director, Perú & Amazon*
Jennifer Blaha, Carlos Fajardo, Sebastian Heilpern, Natalia Rossi

Argentina

Felicity Arengo, Ricardo Baldi, Dee Boersma, Claudio

Campagna, Mauricio Failla, Valeria Falabella, Esteban Frere, Martín Funes, Patricia Gandini, Alejandro Gonzalez, Jimena 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, Alexa Sapoznikow, Adrian Schiavini, Alejandro Vila, Susan Walker, Pablo Yorio, Carolina Zambruno, Victoria Zavattieri

Bolivia

Erika Alandia, Guido Ayala, Kantuta Lara, Zulema Lehm, Oscar Loayza, Guido Miranda, Lilian Painter, Linda Rosas, Damián Rumiz, Elvira Salinas, Teddy Siles, Robert Wallace

Brazil

Ana Rita Alves, Jean Boubli, Valéria Guimarães, Alexine

Keuroghlian, Flavia Miranda, Fabio Rohe, Claudia Pereira de Deus, Helder Queiroz, Maira B.De Souza

Chile

Susan Arismendi, Mauricio Chacón, Ruben Delgado, Daniela Droguett, Francisca Farias, Sebastián Lorca, Miguel Millan, Gemita Molina, Claudio Moraga, Ricardo Muza, Fiorella Repetto, Bárbara Saavedra, Raúl San Martin, Andrea Urbina, Alejandro Vila, Sharon Zegarra

Colombia

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

Ecuador

Edison Araguillin, Santiago Arce, Gosia Bryja, Adriana Burbano, Pamela Cevallos, Ruben Cueva, Paulina Encalada, Gloria Figueroa, Edison Molina, Diego Naranjo, Andrew Noss, Erika Olmedo, Belen Pazmino, Walter Prado, Efen Tenorio, Victor Utrera, Jorge Velasquez, Pablo Viteri, Galo Zapata

Falkland Islands

Rob McGill

Mesoamerica

Maria Bautista, Mario Boza, Marcial Córdova, Diana Escobar, Peter Feinsinger, Rony García Anleu, Rosario Guerra, Angel Luna, Rolando Monzon, Roan Balas McNab, Melvin Mérida, Julio Morales, Ramon Peralta, Gabriela Ponce, Jeremy Radachowsky, Luis Romero, Julio Zetina

Paraguay

Angel Brusquetti-Rolon, Juana De Egea, Francisco Fracchia, Delia Raichakowski

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Laura Cancino, Oscar Castillo, Marilia Escobedo, Amanda García, Michael Goulding, Katia Isla, Leo Maffei, Patricia Mendoza, Mariana Montoya, Pablo Puertas, Monica Quispe, Steven Sevillano, Katherine Uehara, Zina Valverde, Mariana Varese, Carlos Vilchez, Akira Wong, Raizha Yuivilca.

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Martin Robards

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New York

Merry Camhi, Carolyn Hall, Hans Walters

Papua New Guinea

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

Ocean Giants

Marine Mammals

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Hodgson, Jose Hodgson, Linda Hodgson, Victor Huertas, Ruben Julio, Cynthia Lagueux, Harry Laury, Kensly Martinez, Dorian McCoy, Kent McCoy, William McCoy, Anne Meylan, Peter Meylan, Aida Morris, Thelia Narcisso, Ermicinda Pong, Soleta Prudo, Rodrigo Renales, Francela Thomas

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Stephanie Adams, Kevin Ellison, Erin Fairbank, Jamie Hogberg, Olga Lansdorp, David Laufenberg, Stephen Rossiter, Amber Swicegood

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Andrew Perry, Kevin Pietrzak, Brian Robinson, Chris Smith, Leslie Yen, Steve Zack

(Yellowstone Rockies)

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Kevin, the emu, with Kathleen LaMattina, Collections Manager for the Bronx Zoo's Education Department. Kathleen raised Kevin from the day "she" hatched to be part of the tractable animal collection.

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WCS is protecting hippos and other wildlife in Zambia by helping poachers find alternative livelihoods like carpentry, farming, bee-keeping, and ecotourism.

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John Lipari, Supervising Chef
Melanie Otero, Manager, Dancing
Crane Cafe
Vaughn Clements, Assistant
Manager, Dancing Crane Cafe
Angella Modeste, Manager, Bronx
Zoo Satellite Restaurants
Victorina Sierra, Assistant
Manager, Bronx Zoo Satellite
Restaurants
Cache Rodriguez, Unit Manager,
Bronx Zoo Satellite Restaurants
Tony Uricco, Storekeeper, Bronx
Zoo Commissary

Central Park Zoo's Assistant Animal Supervisor Joshua Sisk holds a lamb born during Hurricane Irene.



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 Chantal Robinson, *Assistant Manager, NY Aquarium*
 Rocco Turco, *Unit Manager, NY Aquarium*
 Cynthia Browne, *Assistant Unit Manager, NY Aquarium*
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 Melinda Santiago, *Assistant Manager, Central Park Zoo*
 Veronica Rudd, *Unit Manager, Central Park Zoo*
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 Nav Dayanand, *Assistant Director, Federal Affairs (DC)*

Rosemary DeLuca, *Assistant Director, City & State Affairs*
 Nicole Robinson-Etienne, *Assistant Director, City & State Affairs (AQ)*
 Katherine Fitzgerald, *Manager, Community Affairs (AQ)*
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QA

MICHEL MASOZERA



An early interest in medicine drew Michel Masozera to study biology, but undergraduate fieldwork in the Congo triggered his passion for conservation. Now as our dedicated country director for Rwanda, Michel discusses the creation of that nation's Nyungwe National Park, the ways conservation has eased tensions in Rwanda after years of civil conflict, and the day he met the world's biggest group of Angolan black-and-white colobus monkeys.

DESCRIBE YOUR WORK AS COUNTRY DIRECTOR IN RWANDA.

I coordinate our projects in the country and develop new ones based on the threats to conservation. My job is about problem solving and meeting the every-day challenges of conservation. This requires teamwork and collective effort. At the same time, I am working with the WCS Challenges Program to develop efforts on ecosystem services throughout Africa.

WHAT ARE THE BIGGEST CHALLENGES – CONSERVATION OR OTHERWISE – YOU FACE IN YOUR WORK?

The two biggest challenges are ever-increasing population density and poverty. Rwanda has the highest rural population density in Africa. Most of communities living near the parks are extremely poor and directly dependent on the resources that the park can offer, such as trees for firewood, charcoal, and construction. Everything the park has to give is needed by people. Even the land of the park can be encroached on as people search for more space to grow food. It's our challenge to make conservation work in this context.

DESCRIBE THE LANDSCAPE YOU WORK IN. WHY IS IT IMPORTANT TO CONSERVATION?

Nyungwe National Park, where the majority of our projects are located, is the largest remaining tropical forest in Rwanda. In fact, it's the largest remaining tropical forest in the entire Albertine Rift region of Africa. It has 13 primate species and many endemic and threatened species of birds and plants. It's also one of the country's major watersheds.

WHAT WERE YOUR PRIORITY PROJECTS THIS YEAR?

We had two main projects in 2011. One is related to the development of a carbon project in Nyungwe National Park. This project aims at assisting the natural regeneration of areas previously damaged by wildfire. The second involves developing a national policy related to payment for ecosystem services from Nyungwe National Park. Given the level of poverty around protected areas, WCS is looking for innovative mechanisms to generate funding for conservation and local livelihoods through carbon markets and payment for watershed services.

HOW DOES WCS WORK TO PROTECT BIODIVERSITY IN RWANDA?

WCS's work in Rwanda dates back to 1959, when George Schaller conducted a census of mountain gorillas in what is now called Volcanoes National Park. Through sound science, we've been able to advise the government on how best to manage protected areas for the maximum benefit to local communities and the national economy. Over the last several decades, we've been focused on the Nyungwe Forest Reserve (now Nyungwe National Park). But when a conservation issue calls for it, we engage in activities in the other protected areas, including Volcanoes National Park in the northwest, Akagera National Park in the east, and even the Gishwati Forest Reserve farther away in the west.

WHAT ARE SOME CONSERVATION CONSIDERATIONS THAT ARE UNIQUE TO RWANDA?

Rwanda is unique due to its high population density, its small size (roughly the same as Vermont), and the presence of endangered species such as mountain gorillas. In some areas around protected areas, the population density is close to 700 people per square kilometer.



The two biggest challenges in Rwanda are population density and poverty. Conservation must work in the context of people claiming park space to grow food.

WHAT ROLE, IF ANY, HAS CONSERVATION PLAYED IN BRIDGING ETHNIC TENSIONS IN RWANDA SINCE THE END OF CIVIL CONFLICT THERE?

From my experience, reconciliation is something that happens at a person-to-person level. Conservation, in some ways, can provide an opportunity for community members to interact with each other in positive ways, through cooperatives, for example.

WHAT INSPIRES YOU IN YOUR WORK?

Seeing the commitment and sacrifice from our field staff and the communities we work with inspires me on a daily basis. Their passion feeds my passion. I am also very driven to help my country rebuild following the genocide. I love being able to contribute to that enormous effort through my work in conservation.

WHAT ARE SOME OF YOUR EARLIEST IMPRESSIONS OF WILDLIFE AND HOW DID THEY AFFECT YOU?

I remember growing up and visiting my relatives in villages in Zaire (now the Democratic Republic of Congo). I experienced first-hand at a young age the issue of human-wildlife conflict, when elephants and primates raided the crops of farms, or when carnivores preyed upon livestock. So, I grew up with that curiosity in my mind. Then when I started to study biology and ecology, I was always intrigued by what could be the answer to these problems.

WHAT FIRST DREW YOU TO CONSERVATION SCIENCE?

Thinking that I would someday be a medical doctor, I studied science in secondary school and then biological sciences in my undergraduate work. During my research project as an undergraduate, I found myself on a small island in the

middle of the Congo River studying amphibians. That six months of intense and isolated field work, which had to be conducted at night, was my entry point to conservation science. For most that might have been a discouragement, but for me, it lit the spark.

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

Nyungwe hosts the largest group of Angolan black-and-white colobus monkeys. Groups can number up to 500 individuals. In my early years with WCS, I went with our field staff to visit this group that had been habituated for research. After hiking the damp and dense hills of Nyungwe, we found them high in the canopy above us. It was amazing to see trees as far as you could see full of colobus monkeys, eating and grooming each other, and—most impressively of all—jumping from one tree to the next. It was a flurry of activity in all directions. I remember seeing the way the mothers would care for their babies and hearing the calls of chimpanzees, because colobus monkeys are one of their favorite prey.

WHAT IS YOUR PROUDEST ACHIEVEMENT?

My proudest achievement was the creation of Nyungwe National Park in 2004. It was the culmination of years of work by WCS and signified a shift by local communities and the national government from seeing Nyungwe as a resource to be exploited to recognizing it as a resource worthy of full protection. But it's one thing to have a national park, and another thing to make sure that it's sustainably managed for generations to come. My greatest hope now is to see the next generation of Rwandan conservationists take care of the park.



[OPPOSITE] Michel Masozera.

[ABOVE] Nyungwe's population of Angolan black-and-white colobus monkeys is the largest in the world and a subject of Michel's research.

WCS staff from the Bronx and Queens Zoos have partnered with the New York State Department of Environmental Conservation to investigate the steep decline of the northern cricket frog.



PUBLICATIONS

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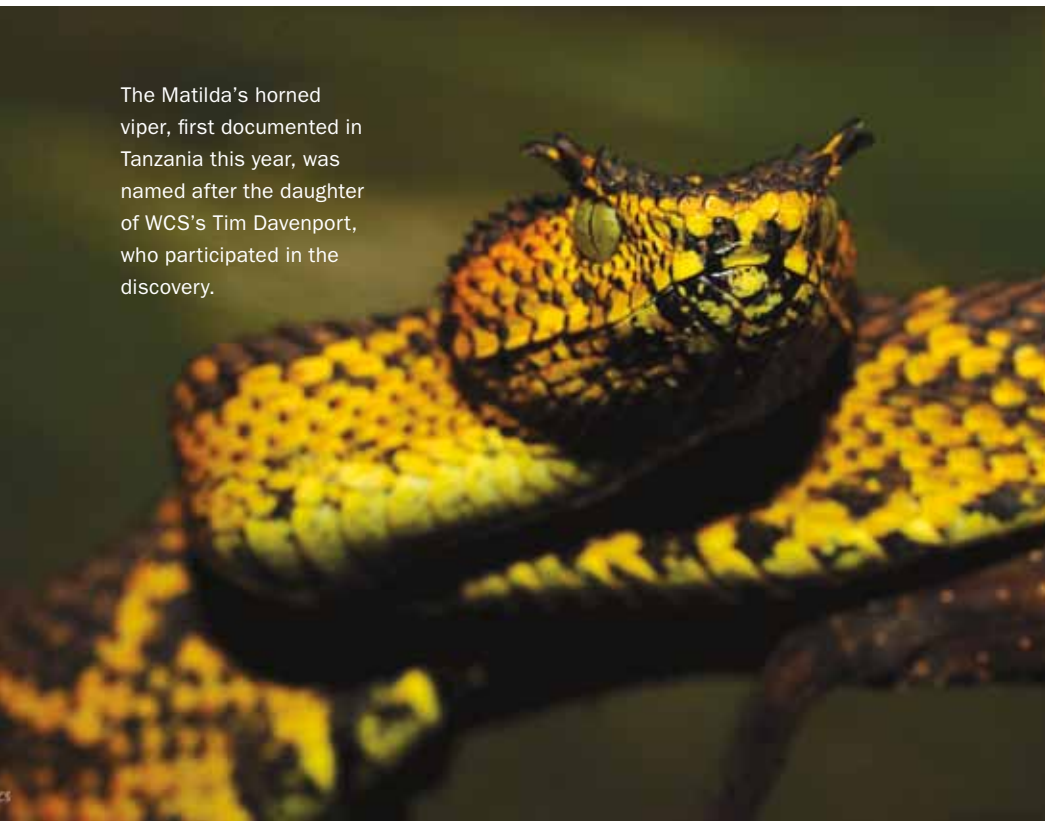
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Each year, pronghorn antelope travel through Wyoming along the first federally-designated wildlife migration corridor in the United States – the Path of the Pronghorn. Pronghorn fawns were born at the Queens Zoo in 2011.



WCS BY THE NUMBERS

2011 attendance for WCS zoos and aquarium: **4,030,978**

Acres of wildlife parks we manage in New York City: **308.5**

Students currently matriculated at our Urban Assembly School for Wildlife Conservation: **400**

Cost of the new postal stamp for wildlife conservation: **55 CENTS**

How many Przewalski's horse foals born at the Bronx Zoo in 2011: **3**

Value of television stories placed in 2011: **\$7.8 MILLION**

Number of viewers reached by those stories: **140.4 MILLION**

Number of Madagascar hissing roaches at the Bronx Zoo named after loved ones for Valentine's Day: **5,707**

Runners who ran for the wild in two 5Ks held at the Bronx Zoo and New York Aquarium for penguin and turtle conservation: **8,678**

Total Number of Facebook fans for WCS and our parks: **108,207**

Emails sent to Congress during our online Fall 2011 Tiger and Wildlife Trade campaigns: **78,901**

Total emails sent to Congress via WCS campaigns in support of wildlife: **615,000**

Height at birth of the baby giraffe born at Bronx Zoo in 2011: **6 FEET**

Average weight of the tiny, endangered North American bog turtle: **4 OUNCES**

What "Irene Hope," a baby lamb, weighed when born at Central Park Zoo during Hurricane Irene: **8 LBS**

Number of pounds the New York Aquarium's giant new lobster tips the scale at: **18**

The same lobster's estimated age in years: **75**

Length of Afghanistan's Hazarchishma natural stone arch, discovered by WCS conservationists: **210.6 FEET**

Number of new pronghorn fawns at the Queens Zoo: **4**

Miles covered by the Path of the Pronghorn, the first federally-designated U.S. wildlife migration corridor: **NEARLY 100**

The population of blue iguanas on Grand Cayman in 2002: **10 TO 25**

How many blue iguanas WCS has helped return to the wild on the island since 2002: **MORE THAN 500**

Estimated number of African elephants in 1979: **1.3 MILLION**

Estimated number of African elephants today: **470,000**

Tons of ivory from massacred elephants seized in last two decades: **361**

Number of okapi calves born at the Bronx Zoo over the past 20 years, including 2011's new addition: **12**

The average number of months gestation time for an okapi: **14.5**

Total video views on "ZooTube," WCS's YouTube channel: **3.2 MILLION**

Number of chicks new to Central Park Zoo's penguin exhibit: **8**

ANIMAL CENSUS

(as of June 30, 2011)

Facility/Class	Species (On-site and In-on-loan)	Births (Includes non-viable)	Specimens (On-site and In-on-loan)
BRONX ZOO			
Mammals	163	637	1,728
Birds	265	130	1,420
Reptiles	133	59	561
Amphibians	44	1,701	2,842
Invertebrates	31	2,793	60,244*
Pisces	58	78	1,104
TOTAL	694	5398	67,899

CENTRAL PARK ZOO			
Mammals	33	30	639
Birds	107	179	495
Reptiles	33	5	641
Amphibians	17	0	242
Invertebrates	1	75	103
Pisces	2	0	26
Total	193	289	2,146

QUEENS ZOO			
Mammals	27	4	80
Birds	49	161	338
Reptiles	9	0	54
Invertebrates	1	0	25
Pisces	5	0	13
Total	91	165	510

PROSPECT PARK ZOO			
Mammals	37	14	112
Birds	37	8	129
Reptiles	30	0	52
Amphibians	18	0	59
Invertebrates	3	0	121
Pisces	28	0	1,230
Total	153	22	1,703

NY AQUARIUM			
Mammals	6	0	16
Birds	1	0	12
Reptiles	9	0	46
Amphibians	10	0	38
Invertebrates	87	5,053	7,478
Pisces	228	80	4,561
Total	341	5,133	12,151

Grand Total (all facilities)	1,130	11,007	84,409
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* Invert numbers include approximately 58,000 Madagascar hissing cockroaches

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RECOMMENDED FORM OF BEQUEST 2011

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 adding the following paragraph to any restrictions that are 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 718-220-6894.

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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