

# WILDLIFE CONSERVATION SOCIETY



SAVING WILDLIFE AND WILD PLACES







# ANNUAL REPORT

## 2009

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 towards 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.

[ COVER ] Lioness Sukari gave birth to a female cub named Moxie. Moxie was the first lion cub born at the Wildlife Conservation Society's Bronx Zoo in 31 years.

[ INSIDE COVER ] One of six crystal blue lakes in Band-e-Amir, Afghanistan's first national park. Assisting in the park's creation, WCS conducted wildlife surveys and helped inform Band-e-Amir's boundaries and management plan.





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Leo, orphaned as a cub in Pakistan, currently resides at the WCS Bronx Zoo.





WCS

NORTH  
AMERICA

WOODS INSTITUTE  
FOR THE ENVIRONMENT  
SUNSHINE UNIVERSITY

Chair Ward Woods and President and CEO Steve Sanderson stand nearby Lake Titicaca during their travels through Bolivia in October.

# 01

# PRESIDENT/CEO & CHAIR LETTER

STEVE SANDERSON & WARD WOODS

**2009 HAS BEEN ANOTHER BREATHLESS YEAR FOR WCS, AS WE HAVE SUCCESSFULLY WEATHERED THE FINANCIAL CRISIS, CLOSED OUR LARGEST-EVER CAPITAL CAMPAIGN (AT \$663 MILLION), AND SET COURSE FOR THE FUTURE, IN NEW YORK AND AROUND THE WORLD.**

As we enter our 115th year in 2010, we remain committed to saving wildlife and wild places with our work across the globe and in our five urban parks in New York City (Bronx Zoo, New York Aquarium, Central Park Zoo, Prospect Park Zoo, Queens Zoo). We are committed to protecting 25 percent of the world's biodiversity as we maintain more than 500 projects in more than 60 countries. In our New York City parks alone, we engage and educate more than 4 million visitors annually who are inspired by the beauty of our parks and the importance of our mission.

This year's annual report is a narrative of continuing accomplishments: the remarkable establishment of Afghanistan's first national park, Band-e-Amir; first surveys of jaguar in Ecuador, an important but neglected range country; the grand opening of the Center for Global Conservation, our second LEED-certified building in consecutive years; and the reintroduction of Chinese alligators to the wild.

As ever, discoveries continue to amaze those who think there is nothing new

under the sun. This year produced the Arakan forest turtle in Myanmar; a new songbird, the bare-faced bulbul in Lao PDR; Mura's saddleback tamarin in Brazil; the largest nesting population of leatherback turtles in Gabon; a new population of Cross River gorillas on the border of Cameroon and Nigeria; and the world's largest population of Irrawaddy dolphins off the coast of Bangladesh. Each of these represents inspiration to continue our work.

More and more, we are tying these discoveries and our worldwide efforts to the New York public. The new snow leopard exhibit in Central Park Zoo references our work in Afghanistan and other range countries in Asia. The Bronx Zoo led the reintroduction of Chinese alligators and began new studies to refine the genetic markers that allow us to count individual tigers.

WCS demonstrated its value to New York in many ways, not least of which was the more than \$400 million in value generated on behalf of the city and its residents. This fall we began A Sea Change at the New York Aquarium, which will transform our venerable campus at Coney Island and

help lead the city and community to renew the neighborhood.

Still, great challenges loom. As we stood by the headwaters of the Bolivian Amazon in early October, the losses of water to climate change were already apparent. All our work in the Amazon and Andes is threatened by a new climate regime. Similarly, the award of a multi-year contract connecting wildlife diseases to human public health reinforces the concern for global health in an interconnected world. That worry is palpable in our efforts to save mountain gorillas from influenza or elephants from tuberculosis.

Entering 2010, the International Year of Biodiversity, conservation is holding its own, but we must engage on new fronts such as disease and climate change if we are to prevail in our mission of saving wildlife and wild places. Please join us in that quest.





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[ OPPOSITE ] Native to Asia where deforestation threatens their wild habitat, endangered red pandas can be found at WCS's Bronx, Central Park, and Prospect Park zoos.

\* Deceased



[ ABOVE ] WCS's Board of Trustees at their June meeting, where they dedicated the library space within the new WCS Center for Global Conservation, a LEED-certified Gold building.





Dr. Judith P. Sulzberger  
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# GATEWAYS

## TO CONSERVATION

**IN JULY 2009, THE WILDLIFE CONSERVATION SOCIETY ANNOUNCED THE SUCCESSFUL CONCLUSION OF ITS GATEWAYS TO CONSERVATION CAPITAL CAMPAIGN. THE CAMPAIGN, WHICH LAUNCHED IN 2006, RAISED \$663 MILLION FOR IMPROVEMENTS AT WCS'S FOUR ZOOS AND AQUARIUM IN NEW YORK CITY AND FOR WCS'S VITAL CONSERVATION WORK AROUND THE WORLD.**

“We are thankful to all our private and governmental funders for ensuring the success of the Gateways to Conservation capital campaign and guaranteeing that WCS enters its second century in a solid and strong position,” said Steven Sanderson, WCS President and CEO. “The campaign is helping us bring New Yorkers an outstanding educational and cultural experience at our five living institutions and continue our mission to save wildlife and wild places across the globe. We encourage all to visit our magnificent and magical parks and to learn how to join us in our conservation work.”

The campaign funded a variety of infrastructure improvements, including a renaissance at the Bronx Zoo, which transformed the Lion House into the award-winning Madagascar! exhibit, the first landmark green building in New York City; the restoration of the Bronx Zoo's Astor Court; an upgraded Sea Lion Pool; and the development of the C.V. Starr Science Campus that frames the new Center for Global Conservation (also generously supported by the C.V. Starr Foundation), and the Global Center for Wildlife Health.

The Gateways to Conservation campaign also helped to fund the new Allison Maher Stern Snow Leopard Exhibit at the Central Park Zoo and a new Aquatic Animal Health Center at the New York Aquarium.

Overseas, the campaign funded a variety of WCS's conservation work, such as the research that led to the discovery of 125,000 western lowland gorillas in the Republic of Congo in 2008. In addition, campaign funds supported the creation of new national parks and protected areas as well as a public/private partnership with The Goldman Sachs Group, Inc. to safeguard old-growth forests and habitats of Tierra del Fuego in South America.

[ OPPOSITE ] The Rainey Gate entrance of WCS's Bronx Zoo.



**PETER ZAHLER**

**AS DEPUTY DIRECTOR OF WCS'S ASIA PROGRAM, PETER ZAHLER SUPERVISES PROGRAMS IN RUSSIA, MONGOLIA, CHINA, PAKISTAN, AFGHANISTAN, TAJIKISTAN, IRAN, AND PAPUA NEW GUINEA. PETER IS CURRENTLY LEADING A FOUR-YEAR, USAID-FUNDED WCS BIODIVERSITY PROJECT IN AFGHANISTAN. THERE, HE ADDRESSES CONSERVATION IN AN ECOLOGICALLY RICH AND FRAGILE WAR ZONE.**

**HOW WOULD YOU RESPOND TO PEOPLE WHO THINK WILDLIFE CONSERVATION IN AREAS OF VIOLENT CONFLICT IS A FUTILE ENDEAVOR?**

Wildlife doesn't choose its location. As an organization whose goal is to save wildlife and wild places, we go where the wildlife is, and where there is a need. Many high-biodiversity areas are also high-conflict areas. Afghanistan is surprisingly species-diverse. For example, there are nine species of wild cats, as many as are found in all of sub-Saharan Africa.

Second, natural resources are a key to stability and security in Afghanistan, where the vast majority of people depend directly upon this resource base for survival. No amount of school or road building, or even training in the rule of law, will ensure long-term stability unless people can feed themselves and their families. Sustainable resource management is likewise a key to wildlife conservation. The larger role of natural resource management in reconstruction is often ignored by the international community, but it's critical to survival in Afghanistan—for its wildlife and its people.

**HOW SUCCESSFUL HAS THE GOVERNMENT BEEN AT PROTECTING WILDLIFE, AND HOW RECEPTIVE ARE AFGHANS TO WILDLIFE CONSERVATION IN GENERAL?**

In recent history, the government has been almost completely unable to provide any protection for its wildlife and other natural resources. The story has been 25 years of conflict, completely destroyed infrastructure, loss of traditional methods of management, and millions of internally displaced people desperate for anything to feed their families or to burn to keep them warm in winter. However, the Afghans themselves are deeply aware of this and are extremely interested in conservation. They understand that sustainable resource management is the only way they can survive and build for the future.

**HOW DIFFICULT IS IT TO ENSURE THE SAFETY OF SCIENTISTS AND WORKERS?**

We work extremely hard to ensure our staff's safety. We follow very strict rules on all aspects of movement and other activities. We have



multiple redundant communication systems in place at all times. We follow U.N. security guidelines while in Kabul and track all personnel on a daily basis outside the city. We were lucky to get some excellent and experienced security staff early in the process, especially Peter Bowles, who's now our deputy director in Kabul. Our main study sites outside of Kabul—Bamiyan and the Wakhan—are very secure.

**AFGHANISTAN RECENTLY BANNED HUNTING SNOW LEOPARDS, WOLVES, AND BROWN BEARS. HOW DOES WCS AID THE NEW CENTRAL GOVERNMENT IN ENFORCING CONSERVATION LAWS?**

The central government doesn't have a strong reach into the countryside, so we're helping build its capacity. This includes helping draft environmental laws and training agency staff. We're also helping build rural communities' capacity for local enforcement. Our goal is to build up both and link the two to increase and improve rule of law.

**WHAT ARE THE SPECIFIC CHALLENGES FOR PROMOTING CONSERVATION IN A PLACE BESET BY WAR, POVERTY, AND LIMITED CONVENTIONAL EDUCATION?**

Most of our field sites are well away from dangerous security conditions. Poverty means that people quickly understand that what we're doing will, in the long run, help them feed their families and improve their livelihoods. And conservation isn't rocket science—it doesn't take long to teach the basics of modern conservation practices to both government personnel and local villagers. These folks are smart, and they're desperate for knowledge and new ideas that can help them improve conditions.

**HOW SIGNIFICANT IS THIS YEAR'S CREATION OF BAND-E-AMIR NATIONAL PARK?**

The park's creation has repercussions beyond protection of a relatively small area of central Afghanistan. Afghans are an immensely proud people, but they've had little to cheer about in recent years, even decades. The park is a beacon of hope for Afghanistan's future, both internally and as part of the international community.

**ILLEGAL WILDLIFE TRADE IS A HUGE THREAT TO WILDLIFE ACROSS ASIA. IS IT A PROBLEM IN AFGHANISTAN?**

The wildlife trade, especially the fur trade, is a real threat to certain species such as snow leopards and other wild cats. Many of the buyers are from the international community—both the military and NGO/contractors find themselves with money to spend and little to buy, and a lot of them turn to the fur trade.

So we've focused on educating them about how this threatens wildlife and how it is often illegal to buy or transport it, or both. We've had excellent cooperation from the military forces. We've held training on their bases in Afghanistan as well as on some bases in the U.S., working with our North America program to train soldiers before they're deployed.

**HOW DOES THE REST OF THE WORLD BENEFIT FROM CONSERVATION IN AFGHANISTAN?**

Natural resource management is a key to reconstruction in Afghanistan, and Afghanistan is a key to regional stability and thus, global security. Conservation has potential to influence far beyond the normal aims of saving wildlife and wild places.

**WHAT IS THE MOST PRESSING NEED IN AFGHANISTAN NOW, AND HOW IS WCS HELPING ADDRESS IT?**

The needs in Afghanistan are various, immense, and overwhelming—both in number and in complexity. But over the past four years, WCS has had a significant impact. We've not just created a national park—we've helped create the first baseline of data on wildlife and other natural resources in the country in over 30 years, helped draft seven environmental laws and regulations, helped build capacity in over 45 rural communities, and trained thousands of Afghans—government officials and local villagers alike—in modern ways to manage their resources sustainably.

**THERE ARE OBVIOUSLY SIGNIFICANT CONSERVATION CHALLENGES IN AFGHANISTAN. WHAT IS YOUR GREATEST SOURCE OF INSPIRATION?**

The Afghan people themselves. For all the incredible hardship and difficulties they've faced over the last quarter century, they're some of the most optimistic and enthusiastic people I've spent time with. In terms of conservation, virtually everyone in the country seems to understand its importance and role in helping to rebuild the country. We also have extraordinarily dedicated staff, both Afghan and international, who work well together and really get things done. And the "blank slate" aspect of a new Afghanistan rising from the ashes of war has given us an enormous opportunity to move conservation forward quickly. These all help to inspire and keep us enthusiastic over the long haul.



[ ABOVE ] Peter Zahler in the high mountains of Asia, snow leopard country.



Lionfish swim among the coral reefs off the eastern coast of Africa, as well as in the Caribbean where they have become invasive due to the aquarium trade.



# WCS 2009 REVIEW:

## MILESTONES

### FIRSTS

- Our research helps the Afghanistan government to create its first-ever national park at Band-e-Amir as well as the country's first-ever protected species list.
- WCS conducts the first surveys for jaguars in Ecuador.
- WCS funds the first radiotelemetry study of the long-beaked echidna—a strange, egg-laying mammal found only in Papua New Guinea.
- At the Bronx Zoo, hand-reared great blue turacos successfully raise their chicks to fledglings.

### DISCOVERIES

- WCS reveals largest population of rare Irrawaddy dolphins in Bangladesh's Sundarbans and the Bay of Bengal.
- WCS-led expedition in Myanmar finds the Arakan forest turtle for the first time in the wild.
- Mainland Asia's first "bald" songbird, the bare-faced bulbul, is found in Lao PDR.
- Also in Lao PDR, WCS and partners discover the limestone leaf warbler, distinguished by its unique call.
- WCS helps discover world's largest nesting population of leatherback turtles in Gabon.

- WCS detects Earth's most mysterious gorilla—the eastern lowland or Grauer's gorilla—outside its previously known range in the Democratic Republic of Congo.
- In the Brazilian Amazon, WCS discovers new monkey subspecies, the Mura's saddleback tamarin.
- WCS conservationists find major Asian elephant population in Malaysia's Taman Negara National Park.
- Tracking pronghorn with GPS collars, WCS and partners uncover an 80-mile migration route in Idaho.

### SUPERLATIVES

- WCS generates \$414.6 million in economic activity during fiscal year 2008.
- WCS research contributes to massive 10,138-square-mile expansion of Canada's Nahanni National Park.
- Critically endangered Chinese alligators from the Bronx Zoo successfully breed in China's wild.
- A WCS-collared wolverine wanders to Colorado in the first known visit to the state by the species in 90 years.
- The Society of Conservation Biology honors three WCS scientists—Joel Berger, Aili Kang, and George Schaller—for outstanding individual achievement in the conservation field.

- WCS and partners conducted the largest-ever, genetic study of southern humpback whales, with DNA taken from more than 1,500 individuals.

### DEBUTS AND ANNOUNCEMENTS

- The Central Park Zoo's Allison Maher Stern Snow Leopard Exhibit.
- WCS Center for Global Conservation opens as a LEED-certified "Gold" building.
- New aardvark and hyena exhibits at the Bronx Zoo.
- A Sea Change: a ten-year initiative to help revitalize the New York Aquarium.
- The World Bank and WCS announce new funding for tigers.

### OTHER BIG NEWS

- WCS announces a new less invasive way to count tigers by analyzing genetic footprint found in scat samples.
- WCS helps Cameroon create a new national park to protect Cross River gorillas.
- WCS, U.S. Fish and Wildlife Service, and energy industry collaborate on a study of oil development's impacts on nesting birds in the Arctic.
- WCS finds "super reefs," off eastern Africa's coast, are resilient to climate change.





# THE 2009 WCS STORY

## A SECOND CENTURY OF SCIENCE, DISCOVERY, AND MUDDY BOOTS

**IN ITS 114-YEAR HISTORY, THE WILDLIFE CONSERVATION SOCIETY HAS MAINTAINED A CONSTANT COMMITMENT TO SAVE WILDLIFE AND WILD PLACES IN NEW YORK AND AROUND THE WORLD. A REVIEW OF 2009 CLEARLY DEMONSTRATES HOW WCS HARNESSES FIELD RESEARCH IN MORE THAN 60 COUNTRIES AND CURATORIAL SCIENCE IN FIVE LIVING INSTITUTIONS IN NEW YORK CITY TO CREATE THE WORLD'S MOST COMPREHENSIVE CONSERVATION ORGANIZATION.**

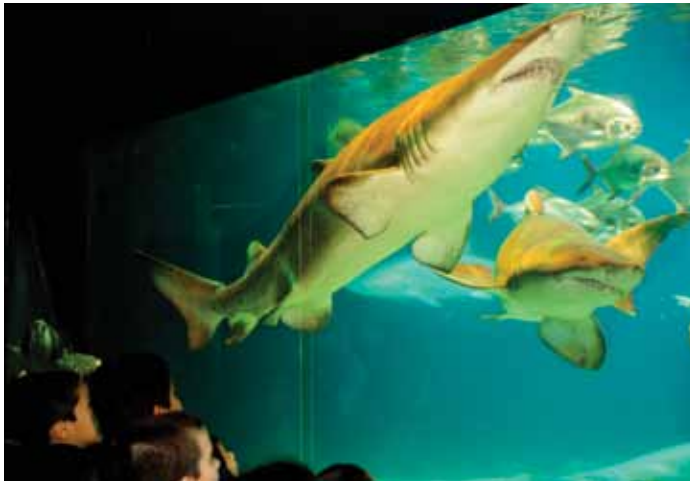
WCS's highly respected heritage of *muddy boots* conservation positions staff on the frontlines of conservation action. Its long history as an international leader for zoos and aquariums puts curatorial and veterinary science at the service of that conservation, as well as offers a living connection to wild nature in our parks. No other organization combines these strengths to protect the Earth's biodiversity, while educating annually more than 4 million visitors, who get a glimpse of the world's wild wonders in the largest system of urban wildlife parks.

This year provided two typical examples of this strength: The opening of the Allison Maher Stern Snow Leopard Exhibit at Central Park Zoo, which was informed and guided by our work in Pakistan, China, Afghanistan, Tajikistan, Mongolia, and Kyrgyzstan to protect this endangered big cat in the wild; and the successful mating of critically endangered Chinese alligators on Chongming Island in the Yangtze River. The alligator hatchlings—15 in number—were the offspring of a group of alligators “reintroduced to the wild,” which included animals from the WCS Bronx Zoo.

Our 2009 story can be told through many examples demonstrating the connections between WCS's work in five continents, four oceans, and five living institutions—the Bronx Zoo, New York Aquarium, Central Park Zoo, Prospect Park Zoo, and Queens Zoo.

The following narrative highlights our breakthroughs, discoveries, and explorations in 2009. From the discovery of a new monkey deep in the Amazon, to vital research of the ties between animal and human health, to innovative carbon projects addressing climate change, WCS has raised the bar on what it means to be a conservation organization working to ensure the future and integrity of life on our planet.

[ OPPOSITE ] WCS conservationists working in Malaysia in 2009 found the region's largest population of Asian elephants.



### WCS MASTER PLAN

In February 2009, WCS completed its first all-park Master Plan in its 114-year history. It includes all WCS parks in the City of New York—the Bronx Zoo, Central Park Zoo, Queens Zoo, Prospect Park Zoo, and New York Aquarium. The plan—which outlines the advantages, challenges, and possible construction projects at the five parks—aims to bolster aging infrastructure and highlight the link between what WCS does in its living institutions and its conservation work locally and globally.

The plan embodies our conservation mission, our vibrant partnership with New York City's government and residents, our wildlife collections, a first-ever Facilities Condition Assessment for all our 270 buildings in the city, and a bold set of priorities for the next decade.

The plan's goal is to further connect people to wildlife and wild places through our zoos and aquarium. We work to ensure that our innovative exhibits immerse guests into the habitats and lives of wild animals. In turn, these experiences encourage guests to make conservation-minded choices in their lives and support WCS's efforts to save species and priority land and seascapes around the world.

### DISCOVERIES OF 2009

From Idaho to the Bay of Bengal, WCS helped to bring previously unknown habitat, migration corridors, animal populations, and entire species to light in 2009. Our conservationists work around the world, often in some of the most remote areas or harshest terrains. We are drawn to this challenging and arduous work, because conservation begins with knowledge and direct engagement.

#### Irrawaddy Dolphins in Bangladesh

In April, we announced the discovery of a previously unknown population of Irrawaddy dolphins, one of the world's rarest coastal dolphins. With prior population estimates in the low hundreds, around 6,000 of these dolphins were found swimming among Bangladesh's waterlogged mangroves and within the adjacent waters of the Bay of Bengal. Despite these higher numbers, the dolphins remain in danger. The species must cope with declining freshwater supplies, a result of upstream water diversions, coupled with sea-level rise brought on by climate change. Having already helped establish a protected area for dolphins along the Ayeyarwady River (Myanmar), we are now working with the government of Bangladesh to create a protected area network in the Sundarbans.

#### Elephants in Malaysia

In collaboration with the Malaysian government, we announced the discovery of what may be Southeast Asia's largest single population of elephants.





[ LEFT TO RIGHT ] Children marvel at a shark exhibit at the WCS NY Aquarium. Jaguars are the largest cats in the Americas and face huge threats from deforestation. Climate change is threatening the water quality within Irrawaddy dolphin habitat.

The 1,676-square-mile Taman Negara National Park in the Malay Peninsula's center is one of the last strongholds for elephants in this region. Here, using DNA-based techniques, we counted 631 of the endangered pachyderms living alongside tigers, leopards, dholes, numerous primates, and many bird species.

#### **Mura's Saddleback Tamarin in Brazil**

In July, we announced the identification of a new subspecies of tamarin. Researchers have dubbed the monkey Mura's saddleback tamarin (*saguinus fuscicollis mura*), named after the Mura Indians, the ethnic group of Amerindians of the Purus and Madeira river basins where the monkey occurs. This primate is related to saddleback tamarins, which include several species of monkeys known for distinctively marked backs. Scientists first saw this newly described, distinct subspecies during a 2007 expedition into the state of Amazonas in northwestern Brazil.

#### **Bare-Faced Bulbul and Limestone Leaf Warbler in Lao PDR**

WCS conservationists helped to uncover two bird species in the rocky, karst forests of Lao PDR. In the fall, we announced the discovery of the bare-faced bulbul, which became the first new bulbul found in Asia in almost 100 years and the continent's only "bald" songbird. Despite the bird's conspicuous look and behavior, its existence may have remained secret as a result of the area's rugged habitat. Again in this region, we helped to identify the limestone leaf warbler.

This bird's loud and distinct call is what first distinguished it from similar warblers of Southeast Asia.

#### **Arakan Forest Turtles in Myanmar and Leatherback Sea Turtles along the Western Coast of Africa**

Known only by museum specimens and a few captive individuals, one of the world's rarest turtle species—the Arakan forest turtle—was observed for the first time in the wild. A WCS team discovered five of the critically endangered turtles in a wildlife sanctuary in Myanmar in Southeast Asia. The sanctuary, originally established to protect elephants, contains thick stands of impenetrable bamboo forests and is rarely visited by people.

An international team of scientists led by WCS announced in May the discovery of the world's largest nesting population of leatherback sea turtles, along the Atlantic Coast of the central African nations of Gabon, Republic of Congo, and Equatorial Guinea. The researchers combed the area's beaches by foot and plane, estimating a population between 15,730 and 41,373 nesting female turtles. In 2002, we helped Gabon establish a network of parks to protect this extraordinary coast, where the iconic wildlife of the Congo Rainforest meets the turtles, whales, and sharks of the Atlantic. This is also where WCS launched the Congo Basin Coast Conservation Program to permanently protect one of the world's most valuable and pristine coastlines.

### Eastern Lowland Gorillas in Democratic Republic of Congo

We announced that the world's least known gorilla—the eastern lowland gorilla or Grauer's gorilla—survives in the previously unexplored forests of eastern Democratic Republic of Congo. Specifically, researchers from WCS working in the forests of DRC's Itombwe region found signs (nests) of eastern lowland gorillas in areas where they previously were not known to occur.

### Pronghorns and Corridors in the United States

Our researchers and partners discovered a pronghorn migration path in Idaho. This 80-mile route crosses federal, state, and private land and narrows in one stretch to a bottleneck less than two football fields wide. There, mountains, fences, a highway, and fields of jagged lava rock restrict the way. Also in 2009, the U.S. Forest Service created the first federally designated migration corridor—the Path of the Pronghorn. The National Park Service and WCS identified this 150-mile corridor in northwestern Wyoming as the longest overland migration route in the

continental United States. Without this passage, the pronghorn would have difficulties migrating out of Grand Teton National Park, forcing the animals to face deep snows and harsh winters.

### Jaguars in Ecuador

We are conducting with partners the first large-scale census of jaguars in the Ecuadorian Amazon. Oil exploration and subsequent development have put growing pressure on wildlife in Ecuador's Yasuni National Park and the adjacent Waorani Ethnic Reserve—a combined 6,500 square miles of wilderness. To measure the impact of the threats on jaguars in the protected areas, conservationists have been working to establish baseline population numbers there since 2007.

### EXPLORING A WORLD FULL OF STILL-HIDDEN DISCOVERIES

WCS conservationists are deployed across the world. We conduct wildlife population surveys, use high-tech tools such as camera traps and satellite collars, and work closely with local,

[ BELOW ] Fences and other barriers obstruct the migration of pronghorn in the Greater Yellowstone ecosystem.





national, and international partners. With carefully-set strategies, WCS programs prioritize iconic species threatened with extinction. Our work in wild places includes protecting biologically outstanding sites—where conserving species and ecological processes over the long term is crucial.

### **Afghanistan/Band-e-Amir**

The United States Agency for International Development and WCS applauded Afghanistan's National Environment Protection Agency for their establishment of the country's first internationally recognized national park, Band-e-Amir. USAID provided key funding that led to the park's creation, including support for WCS to conduct preliminary wildlife surveys, to identify and delineate the park's boundaries, and to work with local communities and the provincial government. We developed the park's management plan, helped the government hire and train local rangers, and provided assistance to the Afghan Government to design the laws enabling the park's creation. Band-e-Amir will protect one of Afghanistan's best-known natural areas: the spectacular series of six azure blue lakes separated by natural dams of white travertine, a mineral deposit. Band-e-Amir provides a working model for the ongoing WCS-led initiative to develop a protected area network for the entire country.

Along with the establishment of Band-e-Amir, the Afghan government issued its first-ever list of species banned from hunting or harvest. The list included snow leopards, wolves, brown bears, and the Himalayan elm tree. In tandem, these two milestones illustrate the determination of the Afghan people and the commitment of WCS to embrace conservation no matter what the circumstances. In Afghanistan, as in Southern Sudan, Democratic Republic of Congo, Madagascar, northern Uganda, and other countries experiencing or recovering from conflict, WCS stays active on the ground.

### **Deng Deng National Park in Cameroon**

By conducting gorilla population surveys, WCS conservationists helped persuade the Cameroon government to commit to the creation of the 224-square-mile Deng Deng National Park. The new protected area will help safeguard the northernmost population of western lowland gorillas, along with other threatened species such as chimpanzees, forest elephants, buffalo, and bongo.

### **Patagonia Austral**

In Argentina, WCS helped create an innovative marine park, Patagonia Austral, in the Gulf of San Jorge, protecting penguin nesting sites onshore and feeding grounds at sea. The park—

home to half a million Magellanic penguins, several rare seabird species, and the region's only population of South American fur seals—capped an effort between WCS and Argentina to protect one of the planet's most productive marine ecosystems from increasing pressure from commercial fishing and the oil industry.

### **Seima Protection Forest in Cambodia**

What was once a draw for loggers in a wooded swath of Cambodia became a haven in 2009 for monkeys, tigers, and elephants. The Cambodian government transformed a former logging concession into a new, Yosemite-sized protected area called the Seima Protection Forest. WCS worked closely with the Cambodian Forestry Administration to help establish this protected area. Covering more than 1,100 square miles along Cambodia's eastern border with Vietnam, Seima is the country's first protected area designed to conserve forest carbon as one of its main goals. We are helping measure the forest's carbon stocks and deforestation rates in order to calculate the amount of greenhouse gas the project keeps from entering the atmosphere. Supporting the project is our Carbon for Conservation initiative, which aims to provide economic incentives to people living in high-biodiversity landscapes to protect their forests. (See page 24 for more information on Carbon for Conservation.)

### **Corals**

We have joined leaders from six nations—Indonesia, the Philippines, Timor-Leste, Papua New Guinea, the Solomon Islands, and Malaysia—to protect the world's epicenter for sea life, the 2.5-million-square-mile Coral Triangle. The Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security pledges accelerated and collaborative action to protect marine, coastal, and small island ecosystems. The initiative will help secure the home of 500 species of reef-building corals and more than 3,000 species of fish, as well as the wildlife and human communities that rely on them. We are actively defending nearly 90 percent of the world's tropical coral reef species in priority seascapes off the coasts of Belize, Indonesia, Papua New Guinea, Fiji, Kenya, and Madagascar. Bleaching, overfishing, pollution, as well as rising sea temperatures, storms, and other effects of climate change are increasingly jeopardizing the future of coral ecosystems. Our research suggests boosting the number of marine protected areas and restrictions in sensitive areas on certain types of fishing gear—spear guns and beach seine nets—that damage corals and the marine life dependent on them. We have recommended decreased harvests of fish species that can help

## A SEA CHANGE

In September, WCS, Mayor Michael R. Bloomberg, Brooklyn Borough President Marty Markowitz, and City Councilman Domenic M. Recchia, Jr. announced a 10-year initiative to transform the WCS New York Aquarium and to jumpstart the re-birth of Coney Island.

The public-private initiative, “A Sea Change at the WCS NY Aquarium,” will entail:

- A state-of-the-art Ocean Wonders exhibit—highlighted by a dramatic new shark exhibit—to revitalize the guest experience and add more indoor space for improved year-round conditions;
- A new Conservation Hall, displaying several aquatic habitats that WCS works to conserve;
- A refurbished Aquatheater that will better connect our guests to our animal ambassadors and to WCS’s conservation mission;
- A beautiful new aquarium exterior along the Boardwalk and Surf Avenue, connecting the aquarium with the ocean;
- An expanded marine conservation program, protecting local marine life in the New York Harbor.

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This initiative will create an exciting and inspiring experience that celebrates the wonders of the ocean while showcasing WCS’s global efforts to protect marine life and ecosystems in New York and throughout the planet’s waters.

reefs recover from storm damage or bleaching. Certain geographic regions also offer hope, such as the “super reefs” off the coast of eastern Africa. When their associated fisheries are managed well, these reefs are more resilient to the effects of global warming due to background environmental and ecological conditions.

### Nahanni National Park in Canada

Our research strongly influenced the expansion of Canada’s Nahanni National Park to six times its previous size. Studies of wide-ranging wildlife conducted by WCS-Canada were key in deciding to enlarge this globally important wilderness area, home to grizzly bears, woodland caribou,

and Dall’s sheep. With former boundaries too narrow and constrictive for large animals, Nahanni’s new 12,000 square miles (three and a half times the size of Yellowstone National Park) make it one of the world’s largest parks, with no roads or major trails.

### Virunga National Park in the Democratic Republic of Congo

We pledged financial support to the Virunga National Park’s rangers and their families in DRC as they faced serious conflict from civil unrest. Despite years of violence and poaching there, the population of mountain gorillas in Virunga National Park (where the borders of DRC, Rwanda, and Uganda meet) has grown 17 percent since a census taken 20 years ago.

### Illegal Trade and Bushmeat

The WCS-supported Wildlife Crime Unit arrested 10 illegal traders of Sumatran tiger skins in Sumatra and Jakarta. The crime unit exemplifies WCS’s efforts to increase pressure on illegal wildlife trade, which devastates populations of big cats and other wildlife around the globe. In central Africa, WCS worked with the government of Cameroon to reduce poaching and the bushmeat trade, two of the greatest wildlife threats in that region. Commercial hunting for the bushmeat trade plagues Cameroon’s endangered gorillas, chimpanzees, forest elephants, and other species. The vast area and number of people involved, as well as the country’s economic and political instabilities, make conventional law enforcement difficult. With WCS advisement, Cameroon improved its law enforcement by limiting access to lucrative urban bushmeat markets via the CAMRAIL national train network. We also participated in surveys to determine the socio-economic impact of the bushmeat trade, to ensure that local livelihoods are taken into account when planning for protected areas.

### Sustainable Natural Resource Use

We encourage industries involved in natural resource extraction to manage their concessions more sustainably. With our partners in the Business and Biodiversity Offsets Program, we have piloted means through which development projects can compensate for pollution, habitat destruction, and other impacts on biodiversity. In Uganda’s Albertine Rift—a region of unparalleled biodiversity and importance to local livelihoods—WCS worked with the petroleum industry to safeguard key wild areas and reduce impact. In the Republic of Congo, we began work with a global consortium to prevent the construction of the world’s third largest mine from negatively impacting gorilla, chimp, and







elephant populations. Among other efforts promoting sustainable natural resource use, WCS aided indigenous organizations facing challenges from Bolivia's rapidly expanding hydrocarbon industry; worked to reduce logging's impacts on gorillas, elephants, and wildlife in the Republic of Congo; and helped identify and mitigate the potential impacts of oil and gas industry exploration and production activities on marine turtles, marine mammals (whales, dolphins, and manatees), and their important habitats in the Gulf of Guinea and other areas, as part of our Ocean Giants program.

In 2009, our research also led to new national fishing regulations in Belize, demonstrating the ability to scale up WCS conservation impacts on national and regional levels. We helped the government of Belize to enact regulations conserving Belize's reefs, considered the most pristine in the Western Hemisphere. These new rules now safeguard a variety of fish species, ban spear fishing in marine reserves, and significantly expand "no-take" zones in other marine protected areas. We helped set a new legal standard for fisheries management in the Caribbean and have established hope for securing these biologically and economically vital ecosystems worldwide.

### CLIMATE CHANGE: THE HEADLINE ISSUE OF 2009

Climate change is arguably our world's greatest conservation challenge and one of our most significant global health concerns. WCS conservationists in the field must factor the effects of climate change in nearly all their conservation work; and our policy experts at local, national, and international levels are engaged to ensure a conservationist voice is at the discussion table.

In the area of health alone, climate change is having dramatic effects. Shifting temperature and precipitation levels are enabling bacteria, parasites, fungi, and viruses to inhabit previously inhospitable areas and infect new species in novel ways.

From polar bears grappling with diminishing ice floes to tiny aquatic creatures forming the building blocks of coral reefs, climate change influences life in every biome, from the apex of the Arctic food chain to the tropical sea floor. For example, intensifying storms may be affecting the ability of flamingos to nest in the Caribbean; and in Patagonia, Magellanic penguins may be declining due to shifts in ocean temperatures and prey availability.

[ ABOVE ] A Chinese alligator hatchling at the WCS Bronx Zoo.





### Carbon and Conservation

Protecting the world's remaining forests is central to our activities to mitigate climate change. Forest conservation can be a crucial tool for reducing greenhouse gas emissions. We work closely with governments and corporations to maintain large intact forests that store carbon and to develop economic mechanisms to help communities conserve and restore forests and other natural ecosystems that sequester carbon.

In 2009, we created our Carbon for Conservation strategy. The effort marries the conservation of biodiversity with climate mitigation, climate adaptation, and a meaningful benefit for the poorest rural residents—the primary stewards of the forests and our partners in the remote settings where we work. Our advantage lies in our long-term commitment to these forests, which ensures the permanence of the emissions reductions and the equitable distribution of payments. We are designing our Carbon for Conservation projects to be consistent with emerging international policies known as Reducing Emissions from Deforestation and

Degradation (REDD). Our work in this area is currently concentrated in Cambodia, Bolivia, Guatemala, Chile, Democratic Republic of Congo, Cameroon, Madagascar, and Indonesia.

### At the Table

As the world debated climate change and attempted to set international policies this past year, WCS stood on the frontlines of discussions in Poznan, Poland and at the United Nations Climate Change Conference in Copenhagen. During the U.N. conference, WCS released a compilation, "Species Feeling the Heat," demonstrating the connections between biodiversity, deforestation, and climate change; and a book entitled, "Natural Solutions: Protected areas helping people cope with climate change," published jointly with IUCN and others. In Washington, D.C., our government affairs experts are working with Members of Congress and the Administration to ensure that emerging U.S. climate change legislation will adequately address carbon for conservation and climate adaptation issues. In addition to engaging governments



on this issue, we are working closely with the business community. WCS and The Goldman Sachs Group, Inc. hosted a meeting in New York discussing forest carbon offsets and how a market could be developed to move this idea forward.

## ONE WORLD, ONE HEALTH™

In 2009, many of WCS's Global Health programs, whether long-term investigations or responses to emerging concerns, addressed the prevention of disease. We are determined to prove that early surveillance of disease outbreaks in animals can help us prevent outbreaks in human populations. Our One World, One Health™ initiative promotes international and interdisciplinary strategies for sharing information on the movement of diseases between species. We strive to ensure our leaders across the world recognize that there is only "One World, One Health."

The global pandemic of H1N1—or "swine flu"—made international headlines in 2009. H1N1's similarity to viruses in livestock reminded the world about the dangers of diseases that can jump between species. Our health staff study and monitor for similar diseases where human, domestic, and wild animal populations meet.

We monitor zoonotic diseases—avian flu, Ebola hemorrhagic fever, West Nile virus, and others—in more than 40 countries, concentrating on areas such as the global trade in wildlife and where people and domestic animals penetrate once-remote regions. Such circumstances can create opportunities for pathogens to infect new species. On five continents, WCS conducts wildlife health monitoring and disease investigations, ranging from studies of gorilla health in small pockets of isolated areas, to migratory birds traveling across hemispheres.

Throughout 2009, the Wildlife Health Center at the Bronx Zoo, the Aquatic Animal Health Center at the New York Aquarium, and clinics at the Central Park, Prospect Park, and Queens zoos provided state-of-the-art healthcare to all of WCS's wild animals. Our collection represents about 1,400 species, each with special nutritional, behavioral, and medical needs. At home and abroad, WCS veterinarians share their knowledge and expertise with foreign veterinarians, student externs, and volunteers to promote animal health.

## PREDICT

In 2009, WCS joined in the creation of a comprehensive strategy promoting global health known as PREDICT. Participating in this USAID-funded initiative, WCS aims to foster better awareness of and preparation for potential disease outbreaks that affect us all.

## Cancer in Wildlife

In June, a WCS study found that cancer is becoming more common in wild animals and suggested pollutants as a major cause. Such reports serve both to further science and public education concerning the interconnectedness of global health and the links between environmental changes, consumer behavior, and disease.

## Monitoring in Congo

In the Congo, WCS continues to develop baseline population profiles, conduct intensive surveys of gorilla and chimpanzee health, and inform local human communities about how diseases, such as the Ebola virus, may spread. Many of the region's residents now help monitor great ape health and report cases of sick or dead animals to foster more rapid responses to possible outbreaks.

## MRIs for Gorillas

In March, a team of WCS wildlife veterinarians, zookeepers, and medical personnel from several institutions performed an MRI on Fubo, a 42-year-old western lowland gorilla living in the Bronx Zoo's Congo Gorilla Forest exhibit. The onsite procedure was made possible by the Bobby Murcer Mobile MRI Unit, a 48-foot-long MRI facility on wheels. The MRI revealed a non-life threatening neurological condition.

## New Technologies to Treat Wildlife

In September, WCS veterinarians, in collaboration with the University of Tennessee, published a study on the development of a tiny osmotic pump that administers medicine to big cats under veterinary care. The pump will reduce the effort needed by veterinarians to treat big cats while helping to minimize stress, and thus accelerate healing, in the cats themselves.

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This year, as in the 114 that preceded it, WCS worked in a world waiting for new discovery, challenged by global change, and connected through our health, economy, and a common concern for the future. 2009 has made clear that the recipe for future conservation success will include creative applications of science, engagement around the world, education in our communities, and—forever—muddy boots on the ground.

[ OPPOSITE ] On Cameroon's railways, inspectors check the trains and passengers' baggage for wildlife products.

# QA

**KRISTINE SMITH**

**KRISTINE SMITH, DVM, DIPL. ACZM, IS A ZOO AND WILDLIFE VETERINARIAN AS WELL AS THE ASSISTANT DIRECTOR OF FIELD PROGRAMS FOR WCS'S GLOBAL HEALTH PROGRAM. HERE, KRISTINE DISCUSSES WILDLIFE DISEASES, THEIR TRANSMISSION BETWEEN ANIMALS AND HUMANS, AND THEIR RELATIONSHIP TO SUSTAINABLE RESOURCES IN DEVELOPING COUNTRIES.**

**YOU'VE STUDIED WHETHER HUMAN MEDICAL TESTS CAN SCREEN FOR DANGEROUSLY ELEVATED IRON LEVELS IN SOUTH AMERICAN MONKEYS. HOW GREAT IS THE POTENTIAL FOR CROSSOVER BETWEEN HUMAN AND ANIMAL MEDICAL TREATMENT?**

Many human diagnostic tests and medical treatments are first developed through animal studies. There's also great potential for the extrapolation of human diagnostics and treatments into the wildlife veterinary realm, especially in the case of non-human primates.

**IS THE TRANSFER OF DISEASES BETWEEN WILDLIFE AND HUMANS BECOMING MORE COMMON?**

Diseases that can be exchanged between humans and other animals, known as zoonoses, have always existed. But as wild lands become less wild and humans move into wildlife habitats, the interface between humans, wildlife, and livestock increases. With that comes an increase in the exchange of zoonotic diseases. The more frequent the contact, the greater opportunity an

infectious agent has to encounter a new host. Certain diseases, such as influenza viruses, have the ability to adapt when they greet a new host and can become more dangerous than they previously were. As a result, not only are more diseases emerging, but they're also capable of spreading around the globe in less than 24 hours. H1N1 is an example of how quickly a novel disease in one country can become a global problem almost overnight.

**DOES THE PROXIMITY OF DENSELY POPULATED AND POOR HUMAN COMMUNITIES TO WILDLIFE FACTOR INTO THIS?**

Rural populations in developing countries are less likely to have proper access to healthcare for humans and livestock, and people tend to be more intimately connected to natural resources. There can be more disease exchange between them, and people and animals with poor healthcare and nutrition are more susceptible to certain pathogens. As a result, the disease may be more likely to become established or invasive than otherwise.



### HOW HAVE EFFORTS TO CONTROL DISEASE IN DOMESTIC ANIMALS AFFECTED WILDLIFE?

In some cases, improved healthcare of livestock is beneficial to surrounding wildlife, but some efforts to control disease in livestock have been harmful. One example is the use of a non-steroidal, anti-inflammatory drug known as diclofenac in cattle, the toxicity of which has led to the near extinction of Oriental white-backed vultures, which prey upon the carcasses. Widespread use of pesticides can also adversely affect wildlife and may reveal potential dangers to humans.



### HOW DOES TENDING TO THE MEDICAL NEEDS OF WILD ANIMALS, INCLUDING THOSE IN CAPTIVITY, DIFFER FROM TENDING TO THE MEDICAL NEEDS OF DOMESTIC ANIMALS?

Most wild animals are not amenable to the everyday physical examination or vaccine shot, and zoo and wildlife veterinarians must be creative, and careful, in how they provide medical services. Also, the knowledge base must be very wide, as each species can have unique diseases, clinical presentations, and treatment reactions specific to that species alone.

### ARE CAPTIVE ANIMALS MORE OR LESS PRONE TO DISEASES THAN THEIR WILD COUNTERPARTS?

Free-ranging wildlife are more likely to contract infectious diseases from other animals in their environment, including prey. Captive species are in relatively protected environments, but because they often live longer, they eventually develop natural age-related health problems that we don't often have the opportunity to see in the wild.

### CAN A ZOO ANIMAL CATCH A COLD FROM A ZOO WORKER, AS A CO-WORKER MIGHT?

It's possible for humans to pass along their colds to animals closely related to us, such as great apes. Numerous viruses, bacteria, and parasites can be shared between zoo animals and people. This is one reason we ask the public not to feed the animals. WCS parks staff get routine testing for certain transmissible diseases, such as tuberculosis, and wear protective gear when working with animals that are susceptible to human pathogens.

### WCS'S ONE WORLD, ONE HEALTH™ PROGRAM SEEKS TO IMPROVE HUMAN CONDITIONS IN DEVELOPING COUNTRIES THROUGH SUSTAINABLE ACTIVITIES. HOW DOES THAT MISSION DOVETAIL WITH YOUR RESPONSIBILITIES FOR TREATING CAPTIVE ANIMALS?

WCS maintains and cares for captive wildlife in its five New York City parks and works to conserve free-ranging wildlife in more than 60 countries. The hope is that improving people's livelihoods in a sustainable, environmentally responsible way will lead to healthier people who are better able to care for the health of their livestock, and who can more easily become positive environmental stewards for the future.

### WHAT HAVE YOU LEARNED FROM WORKING WITH THE GLOBAL AVIAN INFLUENZA NETWORK FOR SURVEILLANCE (GAINS)—WHICH LINKS WILDLIFE HEALTH AND CONSERVATION WITH PUBLIC HEALTH AND AGRICULTURAL INTERESTS?

The core message of One World, One Health™ is that there is no longer clear separation between the health of humans, domestic animals, and wildlife. Diseases such as H5N1 no longer obey geographic or species barriers in today's world. This means we cannot limit ourselves to traditional disciplinary divides. Leaders in human and animal health, the agricultural industry, and governmental and environmental agencies must join together to find unified solutions.

### WHAT'S THE MOST IMPORTANT DEVELOPMENT IN THE FIELD OF WILDLIFE HEALTH?

The realization that we truly share one health—that our own health is intimately tied to the environment around us, from zoonotic diseases to the contamination of our natural resources. Our release of toxins into the environment, our trade of wildlife and wildlife products around the globe, our destruction of natural habitats, such as dense rainforests that have long separated us from other species, are all human behaviors that threaten the planet's health as well as our own.



[ LEFT ] Kristine Smith performs an ultrasound to check for pregnancy in an okapi at the WCS Bronx Zoo.





# POLICY

## REPORT

**IN 2009, THE WILDLIFE CONSERVATION SOCIETY'S POLICY TEAM MADE LONG STRIDES FOR CONSERVATION. IN WASHINGTON, D.C., WE SECURED UNPRECEDENTED AMOUNTS OF FUNDING FOR BIODIVERSITY, SUPPORTED A COMMUNITY SCHOOL FOR UNDERPRIVILEGED CHILDREN, WERE INSTRUMENTAL IN PUSHING CONSERVATION BILLS THROUGH CONGRESS, AND HOSTED MAJOR EVENTS AT INTERNATIONAL CONFERENCES. OUR CLIMATE-CHANGE ADAPTATION AND MITIGATION WORK JOINED MANY STAKEHOLDERS TOGETHER FOR FUTURE SECURITY IN A RAPIDLY CHANGING WORLD.**

WCS continues to strengthen its ties to the New York Congressional delegation, working closely with U.S. Senators Charles Schumer and Kirsten Gillibrand, as well as U.S. Representatives José Serrano, Joseph Crowley, Eliot Engel, Nita Lowey, Maurice Hinchey, Jerrold Nadler, Carolyn Maloney, Yvette Clarke, and Edolphus Towns. John Calvelli, Executive Vice President of Public Affairs, resumed the chair of the International Conservation Partnership. Comprised of public affairs representatives from major US-based global conservation organizations, the ICP helps inform Congress and appropriate governmental agencies on global conservation needs and policy initiatives.

### **SPECIES CONSERVATION**

A leader in the Washington, D.C. conservation community, WCS advanced several species conservation acts through Congress and garnered political support for many conservation initiatives.

- The Great Cats and Rare Canids Act, the Crane Conservation Act, the Marine Turtle Conservation Reauthorization Act, and the

Captive Primate Safety Act passed the House of Representatives with bipartisan support and now await Senate Floor consideration.

- John Robinson, Executive Vice President for Conservation Science, testified before the U.S. House of Representatives Committee on Natural Resources to ensure additional U.S. Fish & Wildlife Service (FWS) resources to global conservation.

Over the last 10 years, federal funding for the USFWS Species Funds have quadrupled from \$2.3 million to \$11.5 million, while the number of grants obligated to WCS tripled. WCS is the single largest institutional recipient of these funds, which protect rhinos, great apes, elephants, marine turtles, and their habitats. In Gabon, WCS applies species funding to train government and private-sector use of Turtle Excluder Devices, which help reduce by-catch of endangered leatherback turtles near nesting beaches.

[ OPPOSITE ] Bald eagles, Mel and Claire, at the WCS Queens Zoo.



[ ABOVE ] WCS staff in Washington present a photo of Zoo Center to U.S. Representative Joseph Crowley of New York. Left to right: Michael Deahn, Kelly Keenan Aylward, Representative Crowley, John Calvelli, and Navonell Dayanand

### LIVING INSTITUTIONS

- WCS engagement on Capitol Hill positioned zoos and aquariums as anchors of their local economies and communities, influencing future possibilities and partnerships with the U.S. government. Bob Cook, Executive Vice President for Living Institutions, met with several Congressional members and participated at the Association of Zoos and Aquariums annual conference.

### EDUCATION

- The School for Wildlife Conservation, a WCS-Urban Assembly effort supporting wildlife education for students of underprivileged communities, received federal funding from Congress and the Department of Education.

### CLIMATE CHANGE ADAPTATION

- WCS President and CEO Steven Sanderson hosted a Capitol Hill briefing headlined by U.S. Sen. Sheldon Whitehouse (D-RI) and WCS coral reef researcher Tim McClanahan. The briefing addressed the relationship between coral conservation and food security in the developing world, in light of global warming's impacts on coral ecosystems.

### CLIMATE CHANGE MITIGATION

- WCS joined The Goldman Sachs Group, Inc. in hosting an executive briefing on REDD (Reducing Emissions from Deforestation and Forest Degradation) to promote carbon offsets and lessen deforestation. We presented Fortune 500 companies a business case for investing in REDD offsets and offered assurances around this emerging environmental market. WCS will also publish a REDD casebook for Washington decision makers and plans to host educational exchanges between WCS REDD projects. Global warming legislation, passed by the U.S. House of Representatives and introduced in the U.S. Senate, would allow U.S. companies to meet compliance obligations by purchasing international forest carbon credits generated via conservation or REDD projects.

### U.S. GOVERNMENT FUNDING FOR BIODIVERSITY

- For FY 2009 a record amount of funding was directed to biodiversity conservation and other conservation efforts. USAID Biodiversity Program received \$195 million; FWS Species Funds received \$10 million; the U.S. Forest Service International Programs received \$8.5 million; the Global Environment Facility received \$86 million; and State Wildlife Grants received \$74 million.
- The enacted federal budget named WCS as a “preferred partner” of USAID and included references to WCS projects to manage wildlife in Southern Sudan and the Russian Far East and to monitor birds for disease through the Global Avian Influenza Network for Surveillance program (GAINS). For our Bronx Zoo headquarters, federal funding specifically directed nearly \$1.5 million to construction needs, education at the School for Wildlife Conservation, and Bronx River restoration projects.
- Steven Sanderson joined members of Congress and Dr. Jane Goodall in D.C. to launch the 2009 International Conservation Budget to Congress, Administration officials, corporate partners, and the global conservation community.



## WORLD CONSERVATION CONGRESS PARTICIPATION

- WCS participated in the fourth World Conservation Congress in Barcelona in October 2008. We held seven workshops to share knowledge gained from our regional and global programs, a press conference on emerging diseases due to climate change, two book launches with WCS authors Kent Redford and Eric Sanderson, and a CEO reception for global conservation leaders.

## BUSINESS AND BIODIVERSITY OFFSET PROGRAM

- As a member of the Secretariat of the Business and Biodiversity Offset Program, WCS encourages companies to voluntarily include offsets in their project designs. Such offsets help conserve key landscapes in the face of growing investments in natural resource development. WCS engages extractive industries and policymakers to seek development results with no net biodiversity loss.

## YEAR OF THE GORILLA MEETING

- Committed to saving all four types of wild gorilla, WCS officers had a formidable presence at the “Year of the Gorilla” conference in Frankfurt, Germany. A declaration issued by 160 conservationists and government officials, “Gentle Giants in Need” called upon governments and international authorities to better enforce laws against bushmeat and the illegal trade of gorillas.

## HEALTHY WILDLIFE

- As leader of the Working Group for Wildlife Disease at the World Organization for Animal Health, WCS helps set international regulations (used by governments and the World Trade Organization) regarding disease control and animal trade. WCS also standardizes vaccines and disease diagnostic testing.
- Livestock export policies have led to miles of disease-control fences in southern Africa. The fences impede regional transboundary conservation efforts, as well as concomitant opportunities to diversify livelihoods. WCS secured \$1.6 million in USAID funding (to be spent within 5 years) to facilitate critical cross-sector policy engagement among southern African colleagues regarding conservation and livelihoods.

## SPARKING ACTION FOR CONSERVATION

WCS encourages the public to take action for wildlife and wild places through our five urban parks, our recently enhanced website, and a new community outreach program. In 2010, we will continue to educate, inspire, and provide the means for people to engage in the protection of their planet.

### At Our Parks

In 2009—the year of the gorilla—about 654,480 people visited the Bronx Zoo’s Congo Gorilla Forest Exhibit, where each visitor can choose which central African conservation program they would like their admissions fee to help support. In addition, more than 3,600 people participated in the zoo’s first annual “race” for wildlife conservation. The event raised \$326,688 for gorilla conservation.

### wcs.org

Launched in May, the new website offers in-depth information on WCS’s conservation work worldwide and opportunities for visitors to participate in timely conservation call-to-actions. In 2009, through the Save Wildlife-Save Our Climate campaign, nearly 12,000 sent e-mails to Congress in support of climate change legislation. To take action, please visit: [www.wcs.org/take-action](http://www.wcs.org/take-action)

### Conservation Matters

WCS’s new program reaches out to community and local environmental leaders who share similar priorities on leading conservation issues. Conservation Matters hosts events and speakers, bringing together science educators, NGOs, state and regional organizers, and climate change municipal committees for opportunities to join WCS in its conservation mission. For more information, please call 718-220-7166.



**SUE CHIN, VICE PRESIDENT OF PLANNING AND DESIGN AND CHIEF ARCHITECT FOR WCS'S EXHIBIT AND GRAPHIC ARTS DEPARTMENT, DISCUSSES HER WORK AT ALL FIVE WCS PARKS IN NEW YORK CITY.**

**YOU BEGAN REGULARLY VISITING THE BRONX ZOO AS A CHILD. DID YOU EVER IMAGINE YOURSELF IN YOUR CURRENT ROLE?**

I basically grew up at the Bronx Zoo. It was a way for me and my family to experience wildlife. I loved the zoo so much that when I was 16, I accepted a summer job there. In high school I chose two electives: Animal Behavior and Architecture. Never in my wildest dreams did I think I could combine the two. My fascination with nature is what inspires me as a designer, so I feel very fortunate to have this job, to be working on projects that I really believe in.

**YOU'VE PARTICIPATED IN BIG CHANGES AT WCS PARKS, INCLUDING MAKING THEM MORE ENVIRONMENTALLY RESPONSIBLE. ARE THERE SPECIAL CONSIDERATIONS FOR INCORPORATING GREEN DESIGN PRACTICES AT SUCH VENERABLE INSTITUTIONS?**

The biggest challenge for us is that all our parks are campuses. The issue is not just one building but multiple buildings and grounds. At the Bronx Zoo, we have 265 acres, and some

infrastructure is more than 100 years old. So it's a big undertaking to make the buildings and exhibits green. But it's important to show that everything we do as human beings has an impact on wildlife and that WCS, as a conservation organization, is living our mission.

Two of our newer projects—the Lion House and the Center for Global Conservation—incorporate green design. We also continue to modify our operations to include more sustainable practices or new products, such as using green cleaning products and installing motion sensors that shut off lights when there is no-one in the room.

**YOU'VE APPLIED YOUR INNOVATIVE DESIGN EXPERTISE TO THE BUTTERFLY GARDEN, TIGER MOUNTAIN, THE AFRICAN WILD DOG EXHIBIT, THE CONGO GORILLA FOREST, MADAGASCAR!, AND THE NEW ALLISON MAHER STERN SNOW LEOPARD EXHIBIT. WHAT WAS YOUR GUIDING LIGHT ON THESE PROJECTS?**

My guiding light is to create opportunities for our guests to make a personal connection to wildlife. When there's a gorilla inches away





from your face, even if it's behind glass, you have a different reaction than if it's on TV or on the Internet. You feel it. It's emotional. Hopefully, most people will feel a sense of caring and connection to another living being. This gives us a greater opportunity to educate them about the animal, increase literacy on relevant conservation issues, and demonstrate WCS's instrumental role in the future of wildlife. Hopefully, we instill in them a desire to be advocates for wildlife themselves.

**IN YOUR HANDS, EXHIBITS GO BEYOND SIMPLE VIEWING AREAS FOR ANIMALS. THEY INCLUDE AMBIENT DETAILS SUCH AS ARTIFICIAL MISTERS OR A LEMUR SKULL IN THE FOSSA HABITAT. HOW DO YOU DECIDE WHAT ELEMENTS WORK WITHIN THE CONSTRAINTS OF AN EXHIBIT?**

It's important for an exhibit to give a complex and rich experience to our guests. But the animals always come first. Our guests will have a positive experience if the animals are visible and are comfortable. One of our goals is to create comfy places in the exhibit for animals where they will also be in view.

From a design perspective, there are many layers to a project, but the hallmark is attention to detail. We include details that visitors might not even see, but are important for the animals. We work collaboratively with the animal staff to incorporate husbandry requirements and animal needs into the overall design. This attention to detail carries through to the guest experience. In the Madagascar! exhibit, guests can lift a rock and discover a scorpion, just like I did in Madagascar. In this case it's a sculpted scorpion, but the visitor still gets a sense of discovery.

**WHAT ARE THE BIGGEST CHALLENGES TO INCORPORATING THESE KINDS OF DESIGNS?**

Since we're designing both for the animals and for humans, there are multi-species challenges, and always surprises once you actually open the exhibit. We try to create habitats for the animals that are as much like the ecosystem they're from as possible. But obviously there are other considerations, including the need to keep them in. Gorillas, for example, are so strong and smart that everything has to be gorilla-proof. Many animals are also very hard on the landscape. In the Congo exhibit, we planted bamboo to create a lush environment like the Ituri Rainforest. It looked fantastic, but okapis are leaf eaters and they basically ate the exhibit. So you have to be prepared to adapt, and you're constantly replenishing.

**WHAT WERE THE MOST IMPORTANT DEVELOPMENTS IN YOUR AREA IN 2009?**

The first was the snow leopard exhibit in the Central Park Zoo, which was the first major new exhibit created there since the zoo opened. We also completed a master plan for all five parks—the first time we've done this concurrently. And there was the opening of the Center for Global Conservation, a new building that is our second LEED Gold [a green rating] building. As a follow-up to the New York Aquarium master plan, we launched the Sea Change initiative. Phase one is Ocean Wonders: Sharks. So now we're planning a new shark exhibit. It's going to be a transformative exhibit that will change how people perceive the aquarium. It's a great opportunity to create something new and dramatic that will help the guests connect emotionally with marine life and will inspire caring for our oceans.

[ LEFT ] Sue Chin holds a radiated tortoise in its spiny desert habitat within the Bronx Zoo's Madagascar! exhibit.

[ RIGHT ] A snow leopard leaps in its new home at the WCS Central Park Zoo.



Musk oxen are one of many Arctic species threatened by climate change.



# 2009 FINANCIAL REPORT

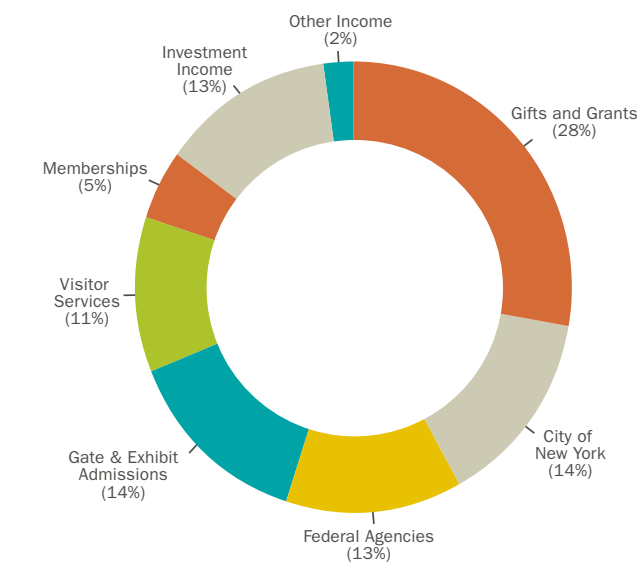
**THE WILDLIFE CONSERVATION SOCIETY ENDED THE 2009 FISCAL YEAR IN A STRONG FINANCIAL POSITION. WE MAINTAIN OUR LEADERSHIP IN GLOBAL CONSERVATION AS WE MEET THE ECONOMIC CHALLENGES FACING THE WORLD. OPERATING REVENUE AND SUPPORT EXCEEDED EXPENDITURES BY \$1.5 MILLION, THE SIXTH CONSECUTIVE YEAR OF OPERATING SURPLUSES. THIS POSITIVE OUTCOME WAS THE RESULT OF TWO FACTORS. OUR OPERATING REVENUES REMAINED STRONG AT \$205 MILLION, AND THE ORGANIZATION TOOK QUICK AND EARLY ACTION TO REDUCE EXPENDITURES IN RESPONSE TO THE ECONOMIC DOWNTURN. AT THE SAME TIME, WE ARE MAKING IMPORTANT STRATEGIC INVESTMENTS IN OUR PROGRAMS AND IN OUR WILDLIFE PARKS.**

Operating revenue and support totaled \$205.4 million, a slight increase from last year. Private contributions, federal agency grants, New York State support, and non-U.S. government sources supporting WCS programs totaled \$84.1 million, providing 40 percent of total revenue. Federal grant support of our global conservation and global health programs through the United States Agency for International Development, the U.S. Fish and Wildlife Service, and other agencies remained strong. Programmatic support of our global work through non-U.S. government foreign aid and multilateral organizations grew by 36 percent—exceeding \$13 million—a growing revenue source for WCS.

Again this year, attendance at our zoos and aquarium broke the 4-million-visitor mark, and audience-driven revenues—income from gate and exhibit admissions and contribution from visitor services (food, merchandising, and parking activities)—totaled \$51.8 million, another record high. Our membership program provided \$10.6 million for operations, growing 3 percent from the prior year. Our success in maintaining and growing our attendance and membership and sustaining our earned revenue during this difficult time are key indicators that our parks serve

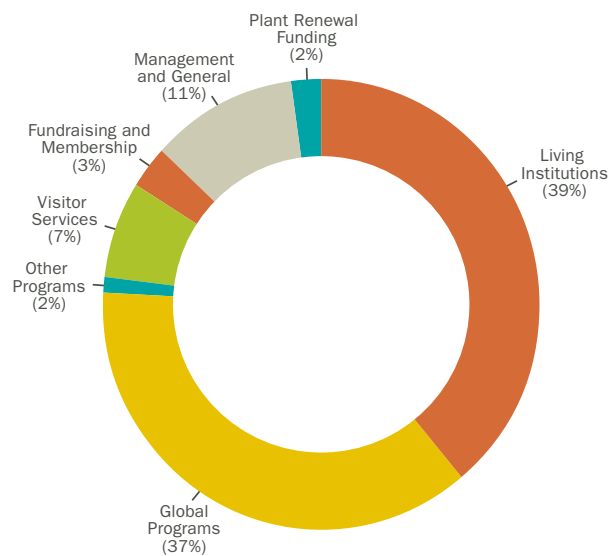
a very important role in the New York City landscape and in the lives of our guests. The City of New York provided \$28.1 million for park operations through the Department of Cultural Affairs and the Department of Parks and Recreation. Investment income for operations totaled \$25.9 million, thanks to strong investment returns over the past several years and new gifts to the endowment. Investment income will be diminished in subsequent years, as investment losses sustained at the end of calendar year 2008 will require a reduction in operating support from the endowment.

Overall, WCS operating expenditures did not increase appreciably in Fiscal Year 2009. They held at \$203.7 million, a growth of one-tenth of 1 percent. Program services expenditures and on-site visitor related costs were \$170.5 million, increasing slightly from the prior year. Within this total, global conservation and health programs were \$74.5 million, representing a 3 percent increase and a new high. These programs are funded by gifts, grants, and contracts from private individuals, foundations, federal agency grants, and non-U.S. sources, which have continued to grow, albeit at a lower rate than previous years. Expenditures in our living institutions—the Bronx, Central Park, Prospect Park, and Queens zoos and the New York Aquarium—were \$78 million, 2 percent



## 2009 OPERATING REVENUE

(\$205.4 million)



## 2009 OPERATING EXPENSES AND PLANT RENEWAL FUNDING

(\$203.7 million)

less than the prior year, reflecting expense savings measures initiated in the fall of 2008. Administrative and support services, including fundraising and membership grew modestly and totaled \$29.9 million, comprising a lean 14 percent of the expense base. Each year WCS sets aside a portion of unrestricted income for a facilities renewal fund to support with recurring revenues a portion of the growing infrastructure, equipment, and technology needs of our aging facilities. In 2009, we sequestered \$3.4 million for these purposes.

Capital expenditures totaled \$33.8 million in FY 2009, as WCS closed the first phase of our ambitious capital plan that focused on improving exhibits and visitor amenities and supporting facilities infrastructure. Since FY 2000, WCS has spent a total of \$229 million on physical plant improvements on all five campuses, financed through a combination of New York City and federal government grants, private gifts, and proceeds from WCS's Series 2004 tax-exempt bond issue. In addition, the City of New York has made direct expenditures for work on restoration of the Bronx Zoo's Lion House and at the New York Aquarium. By the end of the current capital plan in June 2010, WCS will have completed an enormous range and number of projects, more than 500 in all. These include major exhibits such as Tiger Mountain and the Butterfly Garden, the reopening of the Lion House, and a restored Astor Court at the Bronx Zoo, as well as the Alien

Stingers exhibit and the restoration of Main Hall at the New York Aquarium, and many infrastructure projects, such as substantial upgrades to our voice and data systems.

In FY 2009, WCS completed construction of the Center for Global Conservation, the first phase of the C.V. Starr Science Campus at the Bronx Zoo. This new 43,000-square-foot facility houses our global conservation programs and provides much needed conference and meeting spaces. The building's design demonstrates both our leadership in conservation and our commitment to sustainable practices through the incorporation of green architectural design and environmentally responsible operations. In June 2009, Central Park Zoo opened the new Allison Maher Stern Snow Leopard exhibit, where the shy cats now dwell in an environment mimicking their natural habitat in the mountains of central Asia. A combination of public support through the City of New York and a generous private gift funded the new exhibit.

WCS has a strong balance sheet, with total assets of \$755 million and a high degree of liquidity, as operating cash and cash equivalents totaled \$52 million on June 30, 2009. However, the dramatic downturn in investment markets took its toll on WCS's balance sheet, as it did for nearly all endowed institutions. Investment assets dropped from \$521.9 million on June 30, 2008 to \$352.4 million on June 30, 2009, resulting from negative investment



## CONSOLIDATED BALANCE SHEETS

June 30, 2009 and 2008, in thousands

<b>ASSETS</b>	<b>2009</b>	<b>2008</b>
Cash and Cash Equivalents	52,005	36,257
Accounts Receivable	3,048	3,913
Mortgage Receivable	3,500	-
Receivable from the City of New York	27,895	15,604
Receivable from the State of New York	7,095	5,344
Receivable from Federal Sources	30,749	36,354
Grants and Pledges Receivable	33,980	40,172
Inventories	1,846	1,671
Prepaid Expenses and Deferred Charges	6,217	6,900
Investments	352,422	521,863
Amounts Held in Trust by Others	1,726	1,958
Funds Held by Bond Trustee	39	1,411
Property and Equipment	235,353	220,136
<b>Total Assets</b>	<b>\$755,875</b>	<b>\$891,583</b>
<b>LIABILITIES AND NET ASSETS</b>		
Accounts Payable and Accrued Expenses	31,337	30,697
Annuity Liability	3,290	2,800
Bonds Payable	66,627	66,665
Postretirement Benefit Obligation	23,051	32,966
<b>Total Liabilities</b>	<b>\$124,305</b>	<b>\$133,128</b>
<b>Net Assets</b>		
<b>Unrestricted:</b>		
Designated for Long-Term Investment	147,402	234,571
Net Investment In Property and Equipment	168,766	154,882
<b>Total Unrestricted</b>	<b>316,168</b>	<b>389,453</b>
Temporarily Restricted	113,026	162,094
Permanently Restricted	202,376	206,908
<b>Total Net Assets</b>	<b>\$631,570</b>	<b>\$758,455</b>
<b>TOTAL LIABILITIES AND NET ASSETS</b>	<b>\$755,875</b>	<b>\$891,583</b>

Copies of audited financial statements are available upon request.

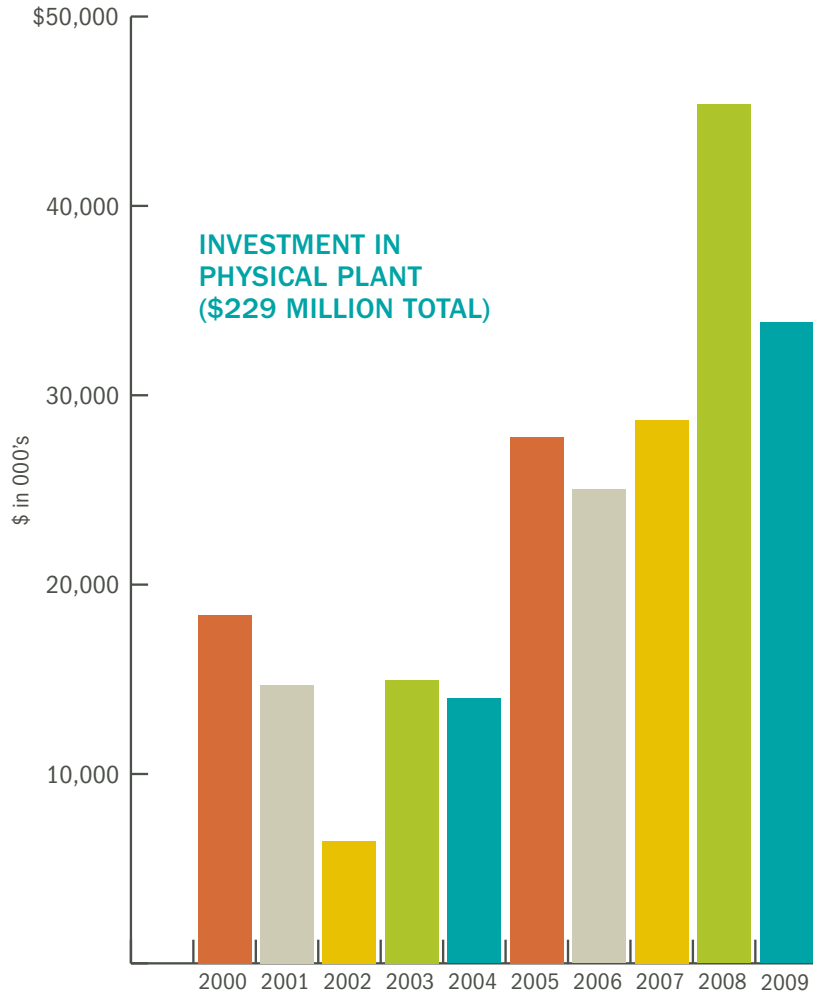
## OPERATING REVENUES AND EXPENSES

Year Ending June 30, 2009

(comparative amounts for 2008), in thousands

REVENUES	2009	2008
Contributed	\$41,496	\$49,885
Membership Dues	10,563	10,234
Investment Income	25,901	20,675
City of New York	28,064	28,875
New York State	3,720	3,496
Federal Agencies	25,843	25,945
Non-Governmental Organization Grants	13,075	9,592
Gate and Exhibit Admissions	28,907	29,111
Visitor Services	22,852	21,469
Education Programs	1,675	1,633
Sponsorship, Licensing, and Royalties	1,975	2,763
Other	1,330	1,353
<b>Total Revenue</b>	<b>\$205,401</b>	<b>\$205,031</b>
<b>EXPENDITURES</b>		
<b>Program Services</b>		
Bronx Zoo	50,145	51,964
New York Aquarium	12,108	12,463
City Zoos	16,665	16,039
Global Programs	74,501	72,119
Wildlife Conservation Magazine	1,458	1,195
Lower Bronx River Habitat Conservation	843	2,149
<b>Total Program Services</b>	<b>\$155,720</b>	<b>\$155,929</b>
<b>Visitor Services</b>	<b>\$14,821</b>	<b>\$13,502</b>
<b>Supporting Services</b>		
Management and General	22,847	21,174
Membership	2,296	2,595
Fundraising	4,798	4,666
<b>Total Supporting Services</b>	<b>\$29,941</b>	<b>\$28,435</b>
<b>PLANT RENEWAL FUNDING</b>	<b>\$3,262</b>	<b>\$5,658</b>
<b>TOTAL EXPENSES AND PLANT RENEWAL FUNDING</b>	<b>\$203,744</b>	<b>\$203,524</b>
<b>EXCESS OF REVENUES OVER EXPENSES AND PLANT RENEWAL FUNDING</b>	<b>\$1,657</b>	<b>\$1,507</b>





return of 24.4 percent for the fiscal year. The \$352 million long-term investment portfolio is diversified, with investments in a broad range of asset classes. On June 30, 2009, \$95 million of the long-term portfolio was invested in cash and cash equivalents. This decision was made in 2008 as WCS recognized the need for additional liquidity in the investment portfolio during a time of unprecedented market volatility. These funds will be redeployed into new investments sometime in the near future. Liabilities have remained stable as WCS has not issued any additional debt, and the \$66.6 million of Series 2004 bonds hold fixed interest rates. This year WCS restructured non-union retiree health benefits and eliminated a \$12 million liability, which provided a much needed boost to the balance sheet and budget relief going forward.

Looking ahead, we have every reason to be optimistic. We took aggressive measures early in the financial crisis to reduce expenditures, while we continue to work on transformational efforts begun in 2007. The FY 2010 expense budget includes a \$15 million reduction in core operating expenses. These deep cuts required a rethinking of programmatic priorities, staffing patterns, and functions. Changes included the closing of several exhibits, restructuring or eliminating certain programs including the closing of Wildlife Conservation magazine, and the consolidation of departments and staffing. The reductions were difficult

to make, but these times require that every public and private institution re-assess its priorities and business practices. Our actions have permitted WCS to budget a substantial operating margin in anticipation of a protracted economic recovery, which is likely to affect giving, earned revenue, and government support over the next several years.

Although reducing fixed costs was part of our response to the global financial crisis, our budget and plans include a growth strategy with the investments we are making through a strategic initiatives fund in species and landscapes conservation, government affairs and policy, program development, and conservation finance. The current economic crisis means that government funding, private donations, and foundation support are severely strained. In response, we must demonstrate the value of what WCS offers to New York and the world, as well as accommodate for the economic losses we have incurred. Through our realignment, we will emerge a stronger leader in conservation, we will continue to honor our deep commitment to the City, State, our neighbors, and staff, and we will improve our parks to better inspire our visitors to understand and care for wild nature.





# WCS: A YEAR IN PICTURES

THE FOLLOWING SECTION TELLS THE WCS 2009 STORY IN PICTURES. THE PHOTOGRAPHS HIGHLIGHT WCS'S STAFF AND SUPPORTERS WHO ARE WORKING TOGETHER TO SAVE WILDLIFE AND WILD PLACES ACROSS THE GLOBE.



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## CAMERA TRAP PHOTOGRAPHS

**01** Opposite: A tiger triggers a camera trap in Indonesia.

**02** After visiting a den site, this male wolverine tracks through the snow in central Idaho's Smoky Mountains.

**03** WCS radio-tracked this wolverine, M56, as he traveled into Colorado, becoming the first documented wolverine in the state since 1919. Here, M56 climbs a tree in Wyoming's Bridger-Teton National Forest.

**04** A red muntjac in Malaysia.

**05** A tiger approaches a camera trap in Thailand's Hua Kha Khaeng Wildlife Sanctuary.



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### WCS AT WORK: NEW YORK

**06** The first annual *Run for the Wild* at the WCS Bronx Zoo raised money for gorilla conservation.

**07** Tasha Hook, a senior wild animal keeper, feeds the ostriches at the WCS Bronx Zoo.

**08** Keeper Nicole Pisciotta feeds an otter at the New York Aquarium's new Aquatic Wildlife Health Center.

**09** Eugene Texeira, an assistant zoo park maintainer, riding one of the Queens Zoo's new eco-bikes.

**10** Denise McClean, director of Prospect Park Zoo, and an alpaca enjoy the snow.

**11** Scott Silver, director of Queens Zoo, in front of the zoo's bald eagles, Mel and Claire.

**12** Veterinary Technician Karen Wone examining an x-ray of a Pallas cat at the WCS Prospect Park Zoo.

**13** Markley Boyer and Eric Sanderson, landscape ecologist, with a replica of an old map used in The Mannahatta Project.



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### WCS AT WORK: ABROAD

**14** Biologist Keith Aune and Jodi Hilty, director of WCS's North America program, in Glacier National Park.

**15** The Gateways to Conservation exhibit travels to Geneva, Switzerland.

**16** WCS staff in Madagascar consult a map for their work in Makira Forest.

**17** Senior Scientist Joel Berger peers through a field scope in Montana's Glacier National Park.

**18** WCS's Dr. Pablo Yorio gets a closer look at a Magellanic penguin in Argentina.

**19** A frog is checked for chytrid fungus in Cao Lanh market in Vietnam.

**20** WCS biodiversity monitoring staff return from the Nam Kading National Protected Area in Lao PDR.



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## EDUCATION

- 21** Senior Instructor Robert Cummings with children enjoying the Bronx Zoo's Pablo Python Summer Camp.
- 22** Students at P.S. 205 throw a parade in support of the Bronx Zoo, as proposed budget cuts threatened funding for zoos and other cultural institutions.
- 23** Jennell Ives, director of professional development, with two teachers-in-training.
- 24** Educators who participated in the Urban Assembly Teachers' Training at the Bronx Zoo.
- 25** Environmental educators from all over the world came to the Bronx Zoo to enhance their curricula.

## PARTNERING WITH GOVERNMENT

- 26** Assembly member Alec Brook-Krasny, Deputy Mayor for Economic Development Robert Lieber, Commissioner for the Department of Cultural Affairs Kate D. Levin, Council member Domenic M. Recchia, Jr., Assembly member Joseph R. Lentol, and WCS Executive Vice President of Public Affairs John Calvelli at *Dinner by the Sea* event.
- 27** John Robinson, WCS's executive vice president for conservation and science; U.S. Representative Henry Brown; and U.S. Representative Madeleine Bordallo, chairwoman of the Subcommittee on Insular Affairs, Oceans and Wildlife.
- 28** David Hayes, deputy secretary of the U.S. Department of Interior (DOI), and WCS's Kelly Keenan Aylward at a Multinational Species Conservation Funds meeting in Washington, D.C.
- 29** Ned Michalek, chief of staff for Representative Eliot Engel, feeding a giraffe at the WCS Bronx Zoo.
- 30** Trustee Edith McBean and U.S. Representative Nita Lowey during a Congo Basin Forest Partnership event in Washington, D.C.
- 31** Kent Redford, director of WCS Institute, speaks at the launch of the U.S. DOI Bison Initiative.

## TRUSTEES & DONORS

- 32** Amy McNamara, a program officer at the Wilburforce Foundation, a longtime supporter of WCS's conservation work in North America.
- 33** Donor Steve Unfried hikes Montana's Glacier National Park.
- 34** Chair Ward Woods and WCS's Rob Wallace pore over a map of Bolivia's Madidi National Park during a flight over the Andes.









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## EVENTS

### WCS Conservation Patrons Events

Conservation Patrons support WCS's work to save wildlife and wild places. In recognition of annual gifts of \$1,500 or more, Conservation Patrons enjoy exclusive access including expert-led tours of our zoos and aquarium, and special events with curators, field conservationists, and program specialists. In 2009, these events included: *Butterflies, Bugs, and Bears—Oh my!* highlighting some of the Bronx Zoo's most fanciful exhibits; *Great Cats, Big City!* celebrating Central Park Zoo's new Allison Maher Stern Snow Leopard Exhibit; and *WCS at Work: 21st Century Discoveries* featuring discoveries by WCS field staff and their implications for conservation management and global health.

**35** Brian and Faith Marcus take a ride with their son Max on the Barbara Hrbek Zucker Bug Carousel at the Patron Family Celebration *Butterflies, Bugs, and Bears—Oh My!*

**36** Ellen Dean, Amy Attas, Nancy Meyrich, and Barbara Avellino during *WCS at Work: 21st Century Discoveries*.

### Explorers' Party

The *Explorers' Party*, WCS's annual family benefit, took place at the Central Park Zoo. Co-Chaired by Kelly Mallon, Annette Younger, and Honorary Chairs Ginny and Tiki Barber, the event celebrated conservation and taught families how to be green. Children decorated reusable tote bags, created recycled art, and ate food grown on local farms.

**37** *Explorers' Party* Co-Chairs Annette Younger and Kelly Mallon. Front: Frances Younger, Madeleine Mallon, and Schuyler Sargent.

**38** *Explorers' Party* Committee member Sarah Beatty with children Jacob and Elizabeth.

**39** Jiwon Simpkins, Stephen Moon, Honorary Event Chair Tiki Barber, and David Moon.

### Dinner by the Sea

Honoring Cynthia Reich, for her accomplishments and success on behalf of the aquarium, *Dinner by the Sea* also announced *A Sea Change at the New York Aquarium*, a public-private initiative to transform the aquarium and jumpstart the re-birth of Coney Island. Guests enjoyed cocktails amidst jellyfish in the Alien Stingers exhibit, followed by dinner and dancing in a tent by the beach.

**40** Stan Picheny, Joan Taylor, and *Dinner by the Sea* Committee Chair and Trustee Brian J. Heidtke.

**41** Brooklyn Borough President Marty Markowitz and WCS President and CEO Steve Sanderson.

**42** Mayor Michael Bloomberg, *Dinner by the Sea* Honoree Cynthia Reich, and New York Aquarium Director Jon Forrest Dohlin.





### Spring Gala

Event Chairs, Allison and Leonard Stern hosted an unforgettable evening debuting the Allison Maher Stern Snow Leopard Exhibit at the Central Park Zoo. More than 600 guests enjoyed cocktails around the sea lion pool and dinner under tents decorated by Preston Bailey. Elyssa Kellerman produced a spectacular *One WCS Journal* featuring her photographs of wildlife and wild places. The evening continued with the annual Junior Committee benefit, *An Evening at the Central Park Zoo*. Co-Chaired by Elizabeth Belfer, Mary Dailey Pattee, and Diana Townsend-Butterworth, the event welcomed more than 700 young professionals for an evening of cocktails, dining, and dancing.



**43** Trustee Jonathan Cohen and WCS Education Instructor Ami Dobelle, holding Smithers, an Egyptian spiny-tailed lizard.

**44** Jim Breheny, Bronx Zoo director and senior vice president of living institutions, Kathleen LaMattina, collections manager of program animals, John LaMattina, Mary LaMattina, Donna DeFalco Boyle, and Bill Boyle.

**45** Donald Zucker, Trustee Barbara Hrbek Zucker, and Daniel Griffin.

**46** Journal Chair and Trustee Elyssa Kellerman, Allison Morrow, Trustee Ann Unterberg, Event Chair and Trustee Allison Stern, and Stephanie B. Clark.

**47** Trustee Antonia M. Grumbach and George J. Grumbach, Jr., with snow leopard.

**48** Margalit Haber, Alexis Sinex, Junior Committee member Catilin Apparius, and Lauren Freiman.

**49** Journal Chair and Trustee Elyssa Kellerman, Event Chair and Trustee Allison Stern and Event Chair Leonard Stern.

**50** Chair Ward Woods, President and CEO Steve Sanderson, Lisa Schiff and Chairman Emeritus David T Schiff.







West Indian flamingos on Inagua Island in the Bahamas, where WCS conducts field research on the birds.

# PROJECTS

## IN THE FIELD

### NEW YORK/ WASHINGTON, D.C./ LONDON

Applications of the human footprint to global conservation policy. E. Sanderson, L. Krueger

Species Conservation Planning Task Force, IUCN/Species Survival Commission. E. Sanderson, J. Robinson, S. Hedges, R. Woodroffe

Zoological Society of London collaboration. M. Hatchwell

Protected Areas Coordination with Convention on Biological Diversity. L. Krueger, M. Hatchwell

REDD Policy Development. L. Krueger, R. Victurine, M. Hatchwell

Conservation Cotton: A market based strategy for Landscape Conservation in Zambia and Madagascar. H. Crowley

Elephant Pepper: A Conservation-focused Business. L. Osborn, M. Gravina, H. Crowley, R. Victurine

Biodiversity co-benefit standards for carbon projects. R. Victurine, L. Krueger, T. Clements, C. Holmes

Design and development of site-based forest carbon projects. R. Victurine, T. Clements, M. Hatchwell, C. Holmes, C. Ingram, T. Stevens, M. Varese, L. Krueger

Wildlife Friendly Product Development. H. Crowley, R. Victurine

Biodiversity Offsets. R. Victurine

Commodities and Conservation. H. Crowley, R. Victurine, M. Hatchwell

Market-based Conservation Initiatives. H. Crowley

Payments for Ecosystem Services, H. Crowley, M. Masozera, R. Victurine

Conservation Trust Fund Investment Survey. R. Victurine

Incentive Payments for Conservation. T. Clements, R. Victurine

Lessons learned: Selling Forest Carbon in Makira, Madagascar. C. Holmes, H. Crowley, D. Wilkie, C. Ingram

Lessons Learned from Tmatboey Community-based Ecotourism Project, Cambodia. T. Clements, A. John, K. Nielsen, C. Vicheka, E. Sokha, M. Piseth, H. Piseth, D. Wilkie, C. Ingram

Wildlife Friendly Enterprise Network Development Meeting in Washington, D.C. R. Victurine, A. Koontz, A. Treves, H. Crowley, D. Wilkie, C. Ingram

Reducing Emissions from Deforestation and Degradation Technical Workshop in Lima, Peru. R. Victurine, L. Krueger, M. Painter, M. Varese, A. Garcia, L. Pedroni, T. Pearson, D. Wilkie, C. Ingram

Reducing Emissions from Deforestation and Degradation Technical Workshop in New York, New York. T. Stevens, D. Wilkie, C. Ingram, M. Hatchwell, T. Clements, M. Varese, C. Holmes, R. Victurine, L. Krueger

Reducing Emissions from Deforestation and Degradation at the Wildlife Conservation Society Presentation at the Commission on Sustainable Development Meeting at the United Nations Side. Event hosted by the UNDP Equator Initiative. C. Ingram, L. Krueger, T. Stevens, D. Wilkie, M. Jenkins, L. Naughton, A. Koontz

Payments for Ecosystem Services Workshop at WCS. D. Wilkie,

C. Ingram, J. Walston, R. Victurine, M. Masozera, H. Crowley, M. Starkey, C. Connelly, T. Clements, M. Painter, M. Hatchwell

Payments for Ecosystem Services for Conservation and Poverty Reduction: Experiences from WCS. C. Ingram and D. Wilkie.

International Human Dimensions Program Meeting in Bonn, Germany, April 2009.

Natural Products Marketing 101 for Enterprises in a Conservation Setting Workshop in Tanzania. A. Koontz, D. Wilkie, C. Ingram, H. Crowley

Where Should We Work? Identifying and Prioritizing Networks of Conservation Areas, a Technical Manual. K. Didier, E. Reuter

Monitoring of large wildlife directly through high spatial resolution remote sensing: experimental and in situ approaches. S. Bergen, E. Sanderson

The Landscape-scale Approaches to Conservation of Four International Organizations (WCS, WWF, TNC, AWF): special section of the conservation journal *Oryx*. K. Didier, D. Wilkie,



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## LAO PEOPLE'S DEMOCRATIC REPUBLIC

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## MALAYSIA

Conservation Education:  
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C. Chin, A. Azmi

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S. Bolortsetseg, A. Fine,  
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T. Zaw, S.H.T. Po, T. K. Moe,  
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K. M. Myo, K. Moe, T. Lwin,  
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## PAKISTAN

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## PAPUA NEW GUINEA

Customary conservation across  
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## RUSSIA

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J. Goodrich, N. Reebin,  
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A. Pattanavibool, M. Umponjan,  
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## VIETNAM

Reducing the illegal cross-border trade of wildlife between Vietnam and China. S. Robertson, V.P. Manh, T.X. Viet, 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, N.T. Nhung, P.T. Minh

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CITES Monitoring the Illegal Killing of Elephants (MIKE). S. Hedges, A. Lynam

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## LATIN AMERICA & THE CARIBBEAN

### ARGENTINA

Sea and Sky: A strategy for conserving open ocean biodiversity in the southwestern Atlantic. C. Campagna, V. Falabella, S.Krapovickas  
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

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### BOLIVIA

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Building Local and Transboundary Conservation Capacity for the Madidi Protected Area. R. Wallace, L. Painter, K. Lara, O. Loayza, G. Miranda, E. Alandia, L. Rosas, E. Salinas, T. Siles  
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- Mamirauá and Amanã Sustainable Development Reserves—management and conservation. H. Queiroz, A. R. Alves
- Piagaçu-Purus Sustainable Development Reserve Management and Conservation. C. Pereira de Deus, E. Venticinque
- Amazon regional conservation. E. Venticinque, J. Boubli
- Improving ranching efficiency to protect the biodiversity in the Brazilian Pantanal. A. Keuroghlian
- Implementation of management programs for the black caiman in the Brazilian Amazon. J. Thorbjarnarson
- Birds of Brazil. M. Argel, J. Gwynne
- One World – One Health grants fund. F. Miranda

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- Conservation management and public use program in Karukinka, Tierra del Fuego. B. Saavedra, R. Muza
- Tierra del Fuego Invasive Species. B. Saavedra, R. Medina, R. Muza
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- Conservation in Bernardo O'Higgins National Park. B. Saavedra, R. Muza, A. Vila
- Coastal marine conservation and management in Karukinka and southern cone. A. Vila, B. Saavedra, G. Harris.
- Outdoor Program.

**COLOMBIA**

- Ecology and conservation of key elements of the biodiversity in the central Andes of Colombia. P. Franco, V. Rojas, M. Garces, C. Cultid, J. Velasco, G. Cadena, N. Roncancio, C. Rios, C. Medina, C. Gutierrez, P. Giraldo, C. Saavedra, Y. Toro
- 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
- Spectacled Bear Conservation in the Andes of Colombia. R. Marques, A. Laina, P. Franco
- Capacity Building based on scientific inquiry. A. Laina, J. Echeverry, L. Cardona
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- Integrated management of indigenous territories in southwestern Colombia. A. Laina, J. Echeverry, L. Cardona, P. Franco

**COSTA RICA**

- Consolidation of the National Protected Areas System. M. Boza

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- Reptile research and conservation in coastal habitats. J. Thorbjarnarson, R. Rodríguez Soberón, M. Alonzo Tabet
- Conservation of Ciénaga de Zapata. J. Thorbjarnarson. A. Chicchón
- Conservation of the Cuban crocodile in the Zapata and Lanier Swamps, Cuba. J. Thorbjarnarson
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- Academic exchanges in conservation biology. P. Feinsinger

**ECUADOR**

- Biodiversity research and conservation in the Yasuni-Napo Landscape. V. Utreras, A. Burbano, S. Garcia, M. Morales, J. Torres, R. Cueva, G. Bryja, S. Arce, J. E. Narváez
- Characterization of wildmeat trade in the northern Ecuadorian Amazon. M. Morales, R. Cueva, V. Utreras, S. Garcia, J. Torres
- Integrated management of landscapes. A. Burbano, V. Utreras, S. Garcia, J. Torres, G. Bryja, S. Arce, R. Cueva, A. Noss, J.E. Narváez, D. Naranjo

- Strengthening and consolidation of the Yasuni Biosphere Reserve, through enhanced local participation. A. Burbano, V. Utreras, D. Naranjo
- Consolidation of the control and monitoring system of the Yasuni National Park and implementation of the YNP Interpretative Center. V. Utreras, S. Garcia, R. Cueva, J. Torres, D. Naranjo

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- Jason Islands research and conservation, Falklands/Malvinas. G. Harris

**GUATEMALA**

- Community-based conservation in Uaxactun. R. McNab, J. Zetina, A. Luna
- Maya Biosphere Living Landscape Program. R. Garcia, V. Hugo Ramos, R. McNab
- Strengthening of Asociación Balam. R. McNab, B. Castellanos, J.M. Castillo, J. Tut
- Scarlet macaw conservation. R. Garcia, G. Ponce, R. McNab, M. Cordova
- Strengthening local capacity for improved governance in the eastern MBR. J. Radachowsky, R. McNab, V. Hugo Ramos
- Fire prevention and control. L. Romero, R. McNab
- Jaguar population estimation. R. Garcia, J. Moreira, V. Hugo Ramos
- Jaguar conflict reduction. R. Garcia, M. Merida, J. Moreira, G. Ponce
- Biological monitoring in the Maya Biosphere Reserve. V. Hugo Ramos, R. Garcia, G. Ponce
- Strengthening CITES Implementation in the Maya Biosphere Reserve. R. McNab, V. Hugo Ramos, R. Garcia, B. Castellanos
- Determining the Spatial and Habitat Requirements of the CA River Turtle in El Perú Lagoon, Selva Maya of Guatemala. R. Garcia, R. McNab, G. Ponce

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- Perú and Amazonia Program. M. Varese, A. Kuroiwa

- Wildlife conservation in the Peruvian Amazon of Loreto. R. Bodmer, P. Puertas, M. Antúnez, Z. Valverde K. Isla, M. Escobedo
- Technical support to Tambopata protected areas complex authorities. R. Wallace
- Initiative for Conservation of the Andean Amazon (ICCA). M. Painter, M. Varese, A. Garcia, R. Wallace

**VENEZUELA**

- Fish community composition and dynamics in the Caura River Watershed. C. Bertsch and Fundación LaSalle de Ciencias Naturales
- Fisheries monitoring and conservation in the Lower Caura. C. Bertsch
- Wildlife use by Ye'Kwana and Sanema indigenous people in the Caura Landscape. C. Bertsch, L. Perera C. Valeris, A. Veit, Universidad Nacional Experimental de Guayana and KUYUJANI
- Ecology and habitat use of Andean bears. I. Goldstein
- Application of the Landscape Species Approach to the Caura River Landscape. C. Bertsch, L. Perera, R. Wallace, T. Siles, S. Strindberg, R. Rose, K. Fisher

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- Amazon conservation. M. Painter, M. Varese, E. Venticinque
- Flamingo ecology and conservation. F. Arengo, P. Marconi, Grupo para la Conservacion de Flamencos
- Conservation science training. P. Feinsinger
- Conservation of the Mesoamerican Biological Corridor. A. Carr III
- Jaguar conservation program, small grants. J. Polisar
- Strategic Planning for Conservation Management across Landscapes. S. Strindberg, T. O'Brien, K. Didier, R. Rose, K. Fisher
- Strategic Planning and Biological Monitoring Programs for Conservation Management. S. Strindberg, L. Duda

Strategic planning and biological monitoring for conservation management for WCS projects in the Amazon-Andes region. S. Strindberg, T. O'Brien, A. Kuroiwa, M. Varese, A. Chicchon, K. Didier, R. Rose, K. Fisher

## MARINE Seascape Conservation

### GLOVER'S REEF ATOLL, BELIZE

Belize Coral Reef Monitoring and Evaluation. T. McClanahan

Building a Constituency for Marine Conservation in Belize.

J. Gibson, R. Graham, R. Coleman

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J. Gibson, R. Coleman, V. Burns, S. Strindberg

Glover's Reef Marine Research Station (GRMRS): A Resource for Greater Understanding of the Mesoamerican Barrier Reef. A. Carr III, J. Gibson, S. Zelaya, D. Wesby, R. Coleman, Alex Tilley

Osprey Management in Belize: Gardening an Uncommon, Possibly Threatened Breeding Bird to Learn its Local Ecology. P. Spitzer, N. Clum

Promoting Sustainable Fisheries through Demonstration of Glover's Reef Marine Reserve. J. Gibson, C. Acosta, R. Coleman, D. Wesby

and Kubulau MPA Networks. S. Jupiter, T. Tui, S. Prasad, A. Caginitoba, P. Clarke

Developing a generalized method for adaptive management and protection from climate change in Mangrove and coral reef ecosystems. S. Jupiter, T. Tui

Strengthening the science behind ecosystem-based management in Fiji, especially ecosystem functionality and connectivity (Stavros S. Niarchos Fellowship in Marine Conservation) D. Egli

Ecosystem-based marine management – strategic planning, and conceptual modeling workshop. M. Callow, D. Wilkie

Ecosystem-scale impacts of changing climate and intensive land-use on Fiji catchments and downstream habitats, NASA Proposal Development. S. Jupiter, R. Rose, K. Didier, C. Storlazzi, M. Field

Adapting to Climate Change on the Western Coast of Madagascar: Implementing a Range of Spatial, Technical, and Temporal Policy Tools Across the Spectrum of Predicted Climate Impacts. H. Randriamahazo, B. Randriamanantsoa

Aménagement et Gestion Durable des Ressources Halieutiques: Mise en place de 50 Réserves Marines dans la Zone entre Soalara Sud et Morombe, Région Sud Ouest de Madagascar. H. Randriamahazo, F. Ramananjatovo

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Management in the Daymaniyat Islands, Sultanate of Oman

Marine Protected Area Sustainable Development Project. T. Collins, H. Rosenbaum

Cetacean Conservation and Research in the Gulf of Guinea. T. Collins, L. Keith, H. Rosenbaum (Gulf of Guinea)

Strengthening Management of a Protected Area for Irrawaddy dolphins and a Human-Dolphin Cooperative Fishery in the Ayeyarwady River of Myanmar. B. Smith, A.M. Chit (Myanmar)

Assessing the Status of and Developing a Conservation Plan for Coastal Populations of Irrawaddy Dolphins in Myanmar. B. Smith (Myanmar)

Developing Sustainable Conservation-Oriented Whalewatching. Y. Razafindrakoto, S. Nguesso, N. Andrianarivelo, S. Nguesso, S. Cerchio, T. Collins, H. Rosenbaum (Global)

A Preliminary Training Course and Assessment of Cetaceans in the Coastal Waters of Banda Aceh. B. Smith (Indonesia)

Application and Implementation of Conservation, Ecotourism, and Marine Protected Areas for Whales and Dolphins in Northwestern Madagascar. S. Cerchio, M. Mendez, N. Andrianarivelo, H. Rosenbaum (Madagascar)

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An Integrated Approach to Humpback Whale and Marine Mammal Research and Conservation: Photographic Identification, Conservation Genetics, Acoustics, GIS Analysis, Satellite Telemetry, and Ecotourism. H. Rosenbaum, Y. Razafindrakoto, S. Cerchio, N. Andrianarivelo (Madagascar)

Assessing the Impacts Hunting and Bycatch on Small Cetaceans in the Southwestern Region of Madagascar. S. Cerchio, Y. Razafindrakoto, N. Andrianarivelo, H. Rosenbaum (Madagascar)

Minimizing Potential Impacts to Marine Mammals of Angola: Research and Conservation of Dolphins, Whales, and Manatees. H. Rosenbaum, T. Collins, S. Cerchio (Angola)

Cetaceans of Bangladesh: Conserving a Regional Hotspot of Species Diversity and Abundance with Local Communities and Institutions. B. Smith, B. Ahmed, E. Fahrni Mansur, R. Mansur, Z. Alom (Bangladesh)

Cetacean Surveys for Sound

## SHARKS

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Characterizing Habitat-use and Movement Patterns of Juvenile Goliath Grouper in Payne's Creek National Park. R. Graham (Belize)

The Marine Megafauna: Acoustically Tracking Megafauna (whale sharks, mantas, reef-associated sharks) in the Western Caribbean, Gulf of Mexico and the Western Indian Ocean. R. Graham

Population Abundance and Movement Patterns of Whale Sharks in Madagascar. R. Graham (Western Indian Ocean)



Assessing the Bioaccumulation of Methylmercury in Belize's Top Marine Predators. R. Graham and D. Evers

Madagascar Shark Conservation. V. Ramahery, B. Randriamanantsoa (Madagascar)

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The Gabon Sea Turtle Partnership for Leatherback Research and Conservation, 2009–2010. A. Formia (Gabon)

Conservation of the Hawksbill Rookery in the Pearl Cays, Nicaragua. C. Lagueux, C. Campbell, W. McCoy (Nicaragua)

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Nicaragua. C. Lagueux, C. Campbell (Nicaragua)

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Enhancing Sea Turtle Conservation in Belize.

R. Coleman, C. Campbell  
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Sea Turtle Partnership for Leatherback Research and Conservation in Gabon. A. Formia

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Technical Assistance for Sea Turtle Research and

Conservation on the Gulf of Guinea. A. Formia

### Global Marine Conservation and Coral Reef Research

#### MARINE CONSERVATION

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Conservation Research on Coral Reefs. T. McClanahan  
Effects of Bleaching on Coral and Fish Communities in the Western Indian Ocean. T. McClanahan  
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Enhancing Community Capacity for Marine Conservation in Kenya. N. Muthiga  
Development of adaptive and integrated management plans for Kenya's marine protected areas. N. Muthiga

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Conservation planning and local community engagement in Ontario's Northern Boreal Forest. C. Chetkiewicz, J. Ray, J. McDermid  
Impact of development on freshwater fish in Ontario



A right whale swims through an algal bloom off the coast of Patagonia.

Northern Boreal Forest. J. McDermid  
 Genetic structure of lake sturgeon populations. J. McDermid  
 Wolverine and caribou research, conservation, and recovery in northern Ontario. J. Ray  
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## UNITED STATES

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 Adirondack Communities and Conservation Program. Z. Smith, L. Karasin  
 Adirondack Living Landscapes Program, Book Chapter on the Landscape Species Approach in the Adirondacks. M. Glennon, K. Didier  
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Adirondack Return of the Moose Assessment. H. Kretser, M. Glennon  
 Black Bear Education, Awareness and Research Program (BBEAR). Z. Smith, M. Glennon, L. Karasin  
 Climate Change in the Adirondacks: Detecting evidence and identifying opportunities. J. Jenkins, L. Karasin, M. Glennon  
 Developing a waterfront revitalization strategy for the towns of Clifton and Fine. Z. Smith, L. Karasin, R. Curran  
 Tools for conserving wildlife through local land-use planning. L. Karasin, H. Kretser, M. Glennon  
 Two Countries, One Forest: Connectivity in the Transboundary Ecoregion from Tug Hill to the Maritimes. G. Woolmer, J. Ray, M. Glennon, Z. Smith  
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### Arctic Coastal Plain

Tundra nesting birds, predators, and development in the Arctic Coastal Plain. S. Zack, J. Liebezeit, and partners  
 Exploration of Biologically Special Areas in the National Petroleum Reserve. S. Zack, J. Liebezeit  
 Impact of Climate Change on Musk Ox. J. Berger, S. Bergen

### Pacific West

Wildlife, fire, and forest management. S. Zack, K. Farris, and partners  
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Wolverine ecology and conservation. R. Inman  
 Carnivore connectivity in the Centennial Mountains. J. Beckman  
 Pronghorn migration conservation. J. Berger, K. Berger  
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 Climate Change Initiative. M. Cross  
 Wildlife trade and the United States military. H. Kretser





**CHARLES FOLEY**

**CHARLES FOLEY HEADS WCS'S ELEPHANT RESEARCH PROGRAM IN TANZANIA. STUDYING TARANGIRE NATIONAL PARK'S ELEPHANT HERDS SINCE 1993, CHARLES EMPHASIZES THE IMPORTANCE OF ELEPHANT MEMORY, MIGRATORY CORRIDORS, AND COMMUNITY INVOLVEMENT IN CONSERVATION.**

**LAST YEAR YOU FOUND THAT SOME WILD ELEPHANTS KNEW TO LEAVE THE DROUGHT-STRIKEN TARANGIRE PARK IN SEARCH OF FOOD AND WATER. HOW DID THEY KNOW WHERE TO GO?**

They were learning from older females that had migrated to drought refuge areas in the past. It's a crucial transfer of knowledge. If there's only one female in a group or clan that has ever been to a drought refuge area, and she dies before leading the rest of her clan to the area, that knowledge is lost to them forever.

**HOW CAN YOU HELP OLDER MEMBERS OF ELEPHANT FAMILY GROUPS SURVIVE?**

You try to have a well-motivated anti-poaching team in place. Unfortunately these large matriarchs are particularly vulnerable because they tend to have the largest tusks (tusk size increases with age), which makes them attractive targets to poachers. Older females also tend to defend younger animals, either by charging the attacker or forming a circle around the young ones. This increases the likelihood of their being killed.

Some countries, particularly in southern and eastern Africa, have national parks and game reserves that are well protected from poaching. But others—the Democratic Republic of Congo and Nigeria spring to mind—have little or no implementation of wildlife laws. There, the only thing protecting elephants is isolation, and isolated areas are becoming increasingly scarce. In general, countries with well-developed wildlife tourism industries do a far better job of protecting their elephant herds.

**WHAT ARE THE MOST SEVERE THREATS TO ELEPHANTS IN THE WILD TODAY?**

Poaching—both for ivory and bushmeat—and habitat loss. The price of ivory has risen sharply over the past decade. Habitat loss is a more gradual process, but in the long run may be more damaging, because it's generally irreversible. Once a forest or migration route has been lost to agriculture, elephants are unlikely to travel the area again, regardless of whether their populations recover.



**IF WE CAN REDUCE THE INCIDENCE OF POACHING, WILL ELEPHANT POPULATIONS REBOUND?**

Absolutely. In Tarangire, the elephant population suffered fairly high levels of poaching until the late 1980s when the trade ban was imposed. They're now approaching the maximal level of increase for an elephant population. Elephant numbers are growing robustly in the Serengeti and Ruaha ecosystems in Tanzania. Other countries with burgeoning elephant populations are Botswana and South Africa. Some populations in Kenya have also shown rapid increases in the past decade.

**SHOULD PEOPLE AVOID BUYING IVORY ALTOGETHER?**

Yes, because it just stimulates the market. There is no reason that people would actually need ivory. Plastics often look the same and are more durable.

**ELEPHANTS THAT RANGE FREELY CAN COME INTO CONFLICT WITH HUMANS. HOW CAN THIS BE HELPED?**

Conflict between elephants and farmers is a huge problem in many parts of Africa. Unfortunately, there are no easy solutions. Crops are nutritious and tasty, and elephants will sometimes walk long distances each night to raid them. Some habitual crop raiders (generally males) lose all fear of humans and can pose a serious threat to human life. Electric fences are extremely expensive to build and maintain, and many parks in Africa are simply too large to fence—the Selous game reserve is the size of Belgium.

Researchers and managers have tried many tactics to prevent elephants from entering the fields, such as twine dipped in chili oil, coordinated patrolling, or raising elephant tolerance levels by giving farmers a greater stake in economic benefits derived from elephants.

**WHAT HAS BEEN THE MOST IMPORTANT DEVELOPMENT IN THE REGION LATELY?**

One of our main goals is to protect key migration routes and dispersal areas before they're lost to agricultural expansion. A few years ago we joined forces with a group of safari operators, local Masai villagers, and a local NGO to establish a conservation easement on village

land in the Simanjiro—where the main calving grounds are for large ungulates during the wet season. One of three main villages zoned approximately 25,000 acres of land as a cattle grazing and wildlife area. They agreed not to cultivate or establish permanent settlements there. In return, a consortium of safari lodges and tour operators pays the village a set amount of money each year, and WCS hires several villagers to work as game scouts.

At the end of last year, a second village contacted us and agreed to set aside a further 35,000 acres of land for another easement. These two easements protect the majority of the calving grounds. We're hoping to acquire one from the third village to link the calving grounds to Tarangire National Park. This seems to be a viable model for protecting wildlife on community lands, and could have wider applications throughout East Africa.

**YOU'VE OBSERVED ELEPHANTS CLOSELY FOR DECADES. WHAT'S THEIR MOST REMARKABLE BEHAVIOR?**

Without doubt it's their response to dead elephants and elephant carcasses. When an elephant comes across a carcass of another elephant, they often become very subdued, spend time touching and smelling the body with their trunk, and sometimes turn around and touch the body with the soles of their rear feet. They also perform a strange behavior where they stand and sway next to the body (or bones) for a few seconds while emitting a low rumble. I've seen them perform this behavior at the spot where a female had died several years before, but where there were no longer any bones or skin.

On one occasion we collected the jawbone of a large bull elephant that had died on a ranch outside the park. We brought the skull to camp and put it at the top of a tree to dry out. A few hours later, a bull came into camp. He walked up to the tree and shook it until the skull fell out, then stood next to it for 30 minutes just smelling and touching the bones, before turning around and walking away. I'm certain the bull recognized the dead individual, which is quite remarkable.

[ ABOVE ] Charles Foley, with his wife Lara, also a WCS conservationist, has been observing Tanzania's elephants for almost two decades.





A red-eyed tree frog at the WCS Bronx Zoo. Chytrid fungus threatens this and many other amphibian species across the globe.





A giraffe calf with her big sister at the WCS Bronx Zoo.



# 11

# SUPPORTING GOVERNMENTS

## U.S. FEDERAL AGENCIES

Agency for International Development  
Bureau of Land Management  
Centers for Disease Control & Prevention  
Department of Agriculture  
Department of the Interior  
Department of State  
Department of Transportation, Federal Highway Authority  
Department of Transportation, Federal Transit Authority  
Environmental Protection Agency  
Fish & Wildlife Service  
Forest Service  
Institute of Museum and Library Services  
National Aeronautics and Space Administration  
National Institutes of Health  
National Oceanic and Atmospheric Administration  
National Science Foundation

## OTHER NATIONAL GOVERNMENT AGENCIES

Agence Française de Développement (AFD), France  
Canadian International Development Agency (CIDA)  
Danish International Development Assistance (DANIDA)

Darwin Initiative, United Kingdom  
Department for International Development (DFID), United Kingdom  
German Development Bank (KfW Entwicklungsbank)  
German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)  
German Federal Ministry for Economic Cooperation and Development (BMZ)  
Ministry of Tourism, Republic of Mozambique  
Netherlands-Mongolia Trust Fund for Environmental Reform  
Norwegian Agency for Development Cooperation (NORAD)

## U.S. STATE AGENCIES

Idaho Department of Fish & Game  
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  
New York State Department of State

## INTERNATIONAL AGENCIES

Asian Development Bank  
The EU-China Biodiversity Programme  
Food and Agriculture Organization of the United Nations  
Global Environment Facility  
Inter-American Development Bank  
International Tropical Timber Organization  
International Whaling Commission  
United Nations Development Program  
United Nations Educational, Scientific & Cultural Organization  
Western Indian Ocean Marine Science Association  
The World Bank



[ LEFT ] WCS's marine program and Washington, D.C. staff meet on the steps of the capitol.

[ RIGHT ] Renata, Orlando, and Annabelle help their father Roque Alvarado conserve turtles along the Tiputini River within Ecuador's Yasuni National Park, where turtle eggs are often sold in the bushmeat trade.

[ BELOW ] Ben Rausenbaum, a staffer for NY Senator Kirsten Gillibrand, with a Pacific walrus at the New York Aquarium.



## U.S. FEDERAL AND OTHER GOVERNMENT DONORS

In FY09, the U.S. Agency for International Development (USAID) continued its generous support of WCS conservation activities in central Africa (Central Africa Regional Program for the Environment), the Amazon Basin (Initiative for Conservation in the Andean Amazon), and in Afghanistan, Belize, Ecuador, Guatemala, Southern Sudan, and other countries.

FY09 was the final full year of the USAID 10-year Global Conservation Program, which allowed WCS to integrate land-use policies and management systems in landscapes and seascapes surrounding protected areas. The USAID-funded WCS TransLinks program—now in its third year—is defining new approaches to payments for ecosystem services that create economic incentives to conserve. FY09 also saw the completion of WCS's USAID-, CDC-, and USDA-supported Global Avian Influenza Network for Surveillance (GAINS) program. GAINS linked 25 partners in 35 countries and yielded more than 100 million wild bird observations and thousands of disease test results in a publicly available mapping and database system. GAINS has positioned the conservation and health communities to monitor and respond to the movement of diseases where wildlife, domestic animals, and public health interface.

The U.S. Fish & Wildlife Service awarded nearly \$3 million in support to WCS species conservation and capacity-building programs throughout Africa, Asia, and the Americas.

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





## CITY AND STATE

### 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, Queens Borough President Helen Marshall, Council Member Domenic M. Recchia, Jr., Chair, Cultural Affairs, Libraries & International Intergroup Relations Committee, Council Member Joel Rivera, Majority Leader, and the entire New York City Council. The elected officials of the City of New York are 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 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 76 living museums across the state. WCS also thanks the New York State Bronx and Brooklyn Assembly delegations for their education program support.



This baby Wolf's guenon was born in the Congo Gorilla Forest exhibit, which celebrated its 10th anniversary in 2009.





# QA

**JEFF SAILER**

**JEFF SAILER, FACILITY DIRECTOR AND CURATOR AT WCS CENTRAL PARK ZOO (CPZ), DISCUSSES HOW ZOOS HELP SUSTAIN WILDLIFE OUTSIDE THEIR BOUNDS, THE ZOO'S NEWEST EXHIBITS, AND WHAT IT TAKES TO FEED A DIVERSE MENAGERIE.**

**CPZ HAS A LONG HISTORY, DATING TO THE 1850S WHEN THE CITY DISPLAYED A BEAR CUB THERE. AFTER A MAJOR RENOVATION, WCS BEGAN MANAGING THE ZOO IN 1988. HOW HAS THE ZOO'S FOCUS CHANGED SINCE?**

After WCS took over its general management, CPZ was finally able to evolve into a modern zoo, one committed to conservation and education—not just the exhibition of animals in stark cages. The Central Park Zoo began cooperating with zoos nationally within the framework of the Species Survival Plans [a program of the Association of Zoos and Aquariums to breed rare animals], breaking new ground right away with the hatching of the first chinstrap penguin in captivity.

**THE NEW ALLISON MAHER STERN SNOW LEOPARD EXHIBIT MIMICS THE BIG CATS' NATURAL DOMAIN. SINCE ITS JUNE OPENING, HOW HAS THE EXHIBIT BEEN RECEIVED?**

The enclosures make for a wonderful exhibition and educational backdrop for these beautiful cats, and the cats have acclimated well and

make full use of their new environs. One of the exhibit's most interactive components is the glass viewing window in one of the pavilions. The public gets an incredibly intimate viewing opportunity with one of the world's most difficult-to-see and wary big cats.

**ARE MORE OF THESE TYPES OF EXHIBITS IN THE WORKS?**

The Central Park Zoo is known for its fewer, but more intimate and immersive, sorts of exhibits. We recently opened a new leaf-cutter ant exhibit that provides for up-close and exciting immersion into the world of these tiny rain-forest gardeners. CPZ will also update its red panda and penguin exhibits in the near future to incorporate additional species and provide new educational content.

**DO SUCH EXHIBITS BETTER CONNECT VISITORS WITH NATURE AND THE SPECIES ON DISPLAY?**

The best exhibits are those that provide the opportunity for an intimate interaction with wildlife. This is accomplished in many ways,

such as snow leopards and red pandas. And we have participated in animal communication studies. Even though we're one of the country's smallest zoos, we're a very powerful force for conservation science.

**DO YOU PLAN TO BROADEN THE ZOO'S BREEDING PROGRAMS?**

We're expanding our work with endangered and threatened waterfowl and pheasants, as well as endangered newts—which make the best use of our space and unique life support systems at CPZ. We're building up numbers and developing breeding programs to sustain these rare animals in the zoo setting.

**WHAT ARE THE GREATEST CHALLENGES TO MAINTAINING THE ANIMALS' HEALTH?**

Often, the greatest challenges are meeting the requirements of the animal and the public simultaneously. Both have very specific needs that are very important to our mission. While animal health and well-being is of the utmost importance, we strive to find innovative ways to meet the animals' needs as we provide the best possible conservation education for the public.

**DESCRIBE A TYPICAL WEEKLY GROCERY LIST FOR THE ANIMALS.**

Hundreds of pounds of frozen fish, boxes and boxes of fresh produce, tens of thousands of mealworms and crickets, dozens of 50-pound bags of nutritionally balanced animal food pellets of various varieties (insectivore pellets, soft-billed bird pellets, monkey chow, bear chow, sea duck pellets, etc.), fresh eggs, frozen krill, vitamin supplements, fresh-cut vegetation (for the ants!), bales of hay, grains, seeds, and nuts, earthworms, black worms, wax worms, and frozen rodents for the snakes.

**ZOOS ELSEWHERE OFTEN LOOK TO WCS'S PARKS FOR INSPIRATION AND GUIDANCE. IN GENERAL, WHAT SETS THE CENTRAL PARK ZOO APART?**

Our small size, coupled with our large annual visitation and our setting in the busiest city—arguably the center of the world—makes us different. Add on CPZ's diverse and interesting collection, including some of Earth's least-studied and rarest animals, CPZ truly can be called WCS's jewel in Manhattan.

**WHAT DO YOU HOPE VISITORS TAKE AWAY FROM THEIR CPZ EXPERIENCE?**

I hope our visitors walk away with a new or renewed awe and respect for wildlife, one that will be instrumental in informing their lifestyle decisions in the future for the betterment of the planet and for wildlife.

such as underwater-viewing opportunities, immersion exhibits, and glass partitions that place the visitor literally centimeters from the animal. This intimate experience does more to engender a respect and awe of these wild creatures than electronic media ever could.

**THE "ONE WCS" MISSION SEEKS GREATER CONGRUENCE BETWEEN WCS SCIENTISTS IN THE FIELD AND IN ZOOS AND AQUARIUMS. HAS CAPTIVE BREEDING AND OTHER WILDLIFE SUSTAINABILITY PROGRAMS BECOME AS IMPORTANT AS ENTERTAINMENT AND EDUCATION?**

CPZ is very active in conservation science, sustainable collection management, and education. We're developing a program to study the wintering ecology of sea ducks along the coast of Long Island, N.Y. We have long participated in the reintroduction of Puerto Rican crested toads to Puerto Rico. We manage many species with cooperative captive breeding programs,



[ ABOVE ] A black-and-white ruffed lemur, native to Madagascar, in the Central Park Zoo's Tropic Zone.

[ LEFT ] Jeff Sailer, seen here at the Bronx Zoo, directs the Central Park Zoo, home to a new king penguin exhibit in 2010.





The WCS Bronx Zoo  
opened a spotted hyena  
exhibit in 2009.





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Patricia Cooper, Gigì Giacomara,

Nancy Gonzalez, Tasha Hook,

Susan Leiter, Alana O'Sullivan,

Yvette Pokorny, Jeremy

Sanders, Brian Tierney: *Senior Wild Animal Keepers*

Jeannine Correa, Elaina Crocitto,

Myra Dremeaux, Linda Edge,

James Gottleib, Shanna Hall,

Michael Houlihan, Ken Huth,

Tim Mohl, Trina Puglia, Jamie

Ries, Kristin Shaumburg,

Ramsay Thom, Debra Wolfe: *Wild Animal Keepers*

### **Herpetology**

Jennifer B. Pramuk, *Curator*

William F. Holmstrom, Jr.,

*Collection Manager*

Paul Kmiotek, *Senior Wild Animal Keeper*

Lauren Augustine, Megan Baumer, Alyssa Borek, Brandon Casey, Melissa Mohring, Robert Mendyk: *Wild Animal Keepers*  
Gail Bonsignore, *Supervising Secretary*

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

John Scarola, *Operations Supervisor*  
Ruth Iannuzzi, Diana Tancredi:  
*Supervisors*

Diana Belich, James Dauterman,  
Stephanie Derkasch, Shakira  
Paula: *Assistant Supervisors*

Mary Bynon, Margaret Deeny,  
Melanie Lumba, Jennifer Oi,  
Patricia Ortiz, Kim Smith, Luke  
Torres, Mia Alomar: *Wild Animal  
Keepers*

### **Animal Management Services**

Nilda Ferrer, *Curator and Registrar*

Helen Basic, Anne Rockmore:  
*Animal Records Specialists*

Mariluz Vazquez, *Data and  
Technical Support Assistant*

Carmen Guzman, *Animal Shipping  
Coordinator*

### **Life Support Systems**

Jason Wagner

### **Pest Control**

Anthony Boodoo, *Manager*

Azaad Gaffar, *Assistant Manager*

Sergio Rivera, *Pest Control  
Applicator*

### **Animal Commissary**

Joseph Briller, *Animal Commissary  
Manager*

Moruf Egbo, Michael Marano:  
*Senior Wild Animal Keepers*

John King, *Maintainer*

Quincy Banks, Michael Cruz,  
Guillermo Guzman, Oliver  
Morton: *Wild Animal Keepers*

### **Bronx Zoo Security**

Edward Cooney, *Manager of  
Security*

Raynor Mattson, *Assistant Manager*

Steve Condon, Dave Gallart,  
Kennedy Samuels: *Supervisors*

Luis Barreto, Steven Carr, Steven  
Pippa, Gregory Upshaw, James  
Williams: *Park Maintainers*

Haseeb Baksh, Jimmy Barreto,  
Ivonne Collazo, Weston Hill,  
Barbara Laureano, Noel  
Martinez, Jesus Padilla,  
Maribel Perez, Robert Rosario,  
Donald Thompson, Alexandre  
Vazquez, Rosa Williams,  
Ralph Zamboli: *Assistant Park  
Maintainers*

### **OPERATIONS**

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

### **Operations Shops**

Walter Almodovar, Parmanand  
Kesraj, Anthony Laino, Thomas  
Reilly, Robert Santarelli,  
Michael Scott, Sanjev Seodas,  
Marconi St. Hill, Robert  
Stillwell, Nathaniel Torres:  
*Supervising Park Maintainers*

James Byrne, Benedetto  
Cardillo, Anthony Cerniglio,  
Francis Cushin, Joseph Corry,  
Lawrence D'Erasmo, Robert  
Gonzalez, Alfred Hart, John  
Illenye, Gregory Kalmanowitz,  
Steven Kozy, Jose Martinez,  
Ramon Mendoza, Alison  
Modeste, Winston Newton,  
Nicholas Perrone, Nelson  
Prado, Phillip Riley, Frank  
Sausto, Renzo Scarazzini,  
Edward Scholler, Carlos Year:  
*Park Maintainers*

### **Maintenance**

Frank Suarino, *Assistant Director*  
Winston Williams, *Manager*  
Dominick Caputo, *Park Foreman*  
Johnnie Ferreira, *Supervising  
Park Attendant*  
Anthony Corvino, *Supervising  
Park Maintainer*

Raquel Camacho, *Administrative  
Assistant*

Juan Semidei, Jr., John Tralongo:  
*Zoo Park Maintainers*

Rafael Adorno, Joel Annuziato,  
William Castro, Jr., Orlando  
Figueroa, Gabriel Gomez,  
Santos Gonzalez, Othniel  
Gulley, Osbert Henry, Mary  
Martin, Jose Raul Rivera,  
Michael Sbarbori: *Assistant  
Park Maintainers*  
Maria Maldonado, *Senior Attendant*

John Bruno, Jr., Migdalia  
Cordero, Maria Estrada,  
Roberto Figueroa, Jeanette  
Goines, Gilbert Green, Porfi  
rio Gutierrez, Keith Harris,  
Demond Jones, Sonia  
Kalmanowitz, Louis Landi,  
Miguel Monclova, Carmen  
Montalvo, Manuel Moura,  
Mildonia Nunez, Jose Palacios,  
Rubin Pineiro, Gerard Palinkas,  
Raymond Quaglia, Maria  
Ramos, Niurka Ramos, Victor  
Rodriguez, Pedro Velez,  
Eduardo Vidal, Raymond  
Zelenka: *Attendants*  
Manuel Garcia, *Supervising Motor  
Vehicle Operator*  
George Izquierdo, Luigi Marricco,  
Kevin O'Keefe: *Motor Vehicle  
Operators*

### **Cogeneration**

Michael Henry, *Manager of Electric  
Services and Cogeneration*  
Alfred Jensen, *Supervisor*  
Mark Anderson, Dave Bailey,  
Farouk Baksh, Hervin Brown,  
Roopnarine Maharaj, Keith  
Reynolds: *Park Maintainers*

### **Horticulture**

Ray Oladapo-Johnson, *Curator*  
Wayne Bourdette, *Manager*  
Mary Ann Focarino, *Supervisor*  
James Coelho, Paul Fialkovic,  
Stuart Goldstein, Robert  
Herkommer, David Hyde, Juan  
Albert Peralta: *Gardeners*  
James Burns, Lloyd Pearson,  
Anthony Quaglia, David  
Rosenthal: *Park Maintainers*  
Kevin Bermeo, Ivonne Lopez,  
Bissessar Rampersad,  
Richard Walton: *Assistant  
Park Maintainers*

### **CENTRAL PARK ZOO**

Jeffrey K. Sailer, *Facility Director  
and Curator of Animals*  
Beverly J. Moss, *Executive Assistant*  
Noemi Medina, *Receptionist/  
Office Assistant*  
Sandra Alcosser, *Poet-in-Residence*

### **Animal Programs**

Susan Cardillo, *Curatorial Science  
Fellow, Animals*  
Anthony Brownie, *Collection  
Manager*

Dave Autry, *Animal Supervisor*  
Jamie Reis, *Animal Supervisor*  
Bernadine Leahy, *Senior  
Veterinary Technician*  
Heather Gordon, Robert Gramzay,  
Kristine Keating: *Senior Wild  
Animal Keepers*  
Celia Ackerman, Michelle Acosta,  
Richard Camilli, Veronica  
Correa, Tumecca Gittens,  
Shanna Hall, Alexander  
Humphreys, Luis Jimenez,  
Diana Major, Melisia Mason,  
Bill Robles, Juan Romero, Jeff  
Schmidt, Gretchen Stoddard,  
Alex Thornton: *Wild Animal  
Keepers*

### **Operations & Maintenance**

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

### **Horticulture**

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

### **Security & Admissions**

Stephen Carey, *Assistant Facility  
Director*  
John Geist, Jolanta Lewinska:  
*Assistant Managers*  
Fitzroy Neufville, *Zoo Park  
Maintainer*  
John Bohan, Carlton Davidson,  
Gary MacAllister, Alberto  
Gonzalez, John Joseph, Marilyn  
Maldonado, Frederick Miller,  
Nestor Morera, Nixon Nedd,  
Jaime Pagan, Everton Pearson,



Rob Sutherland, Ramanen Veerapen: *Assistant Zoo Park Maintainers*

Sonia Colon, Joanne Kittler, Sookiah Maharaj: *Ticket Agents/Cashiers*

## NEW YORK AQUARIUM

Jon Forrest Dohlin, *Director*  
Joan Shovlin, *Executive Assistant*

### Animal Programs

David DeNardo, *General Curator and Director of Animal Operations*  
Paul Sieswerda, *Aquarium Curator*  
Paul Loiselle, *Curator of Freshwater Fishes*  
Martha Hiatt, *Supervisor, Behavioral Husbandry*  
Guenter Skammel, *Senior Trainer*  
Andrea Gissing, Joanne Sottile, Cristina Vieira, Nick Visscher: *Trainers*  
Michael Morgano, Hans Walters: *Supervisors*  
JoAnne Basinger, Frank Greco, Leslie Leffler, Wayne Stempler: *Senior Keepers*  
Alissa Cardone, Nicole Ethier, Jamie Kish, Jaclyn Mazza, Stephanie Mitchell, Paul Moylett, Lora Murphy, Nicole Pisciotta, Sal Puglia, Ellen Spencer, Thomas Wippenbeck: *Keepers*  
Fiona Bayly, *Administrative Assistant*  
Catherine McClave, *Curator of Aquatic Health and Living Systems*  
Melissa Petersen, *Laboratory Technician*  
Patricia Toledo, *Assistant Laboratory Technician*  
Mary Messing, *Project Assistant*  
Richard Blankfein, *Dive Safety Officer and Volunteer Dive Program and Animal Husbandry Volunteer Coordinator*

### Operations & Maintenance

Dennis Ethier, *Director of Operations, Facilities, and Exhibit Fabrication*  
Melvin Pettit, *Manager of Facilities*  
John Moore, Kenneth Prichett, Ralph Ramos, William Sheehan, David Scheurich, Michael Tine: *Supervising Park Maintainers*

Michael Budney, Richard Bullen, Richard DiStefano, Raul Domenech, John Dougherty, Alfred Escalera, Michael Facciolo, Winstrol Hosein, Fitz-Albert Reynolds, Tony Vargas: *Park Maintainers*

Patti Blydenburgh, *Supervisor, Buildings*  
Regina Caldwell, Robert Caraballo, Frances Cantone, Raul Domenech, José Gonzalez, Jarod Hagan, Peter Inesti, Tonya Johnson, Eldwin Lebron, Henry Lighty, Alicia Shannon, Darryl Starks, David Williams: *Attendants*  
Christopher Hackett, *Project Assistant*  
Tonya Thomas, *Clerk*

### Security

Sal DeFeo, *Security Manager*  
Joseph Knowles III, *Assistant Manager*

Carlos Martinez, *Supervisor*  
Samuel Black, Ricky Jackson, Owen Mayhew: *Park Maintainers*  
Michael Antonelli, Diana Barreto, Carlos Emiliano Richard Jarus, Lewis Parker, Kenton Spence, Michael Wallace, Hector Weir: *Assistant Park Maintainers*

## PROSPECT PARK ZOO

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

### Animal Programs

David Bocian, *Curator of Animals*  
Dominick Dorsa, *Animal Supervisor*  
Nicole Shelmidine, *Assistant Supervisor*  
Hulya Israfi I, Leslie Steele, Jennifer Skelley, Frances Verna: *Senior Wild Animal Keepers*  
Elaina Crocitto, Gwen Cruz, Crystal Dimiceli, James Gottlieb, Astra Kalodukas, Atu Marshall, Fran Moghab, Denielle Muoio, Jennifer Plummer, Katie Stupples, Justine Wilbur: *Wild Animal Keepers*  
Karen Wone, *Veterinary Technician*

## Operations & Maintenance

Bob Gavlik, *Director of Operations, City Zoos*  
Anthony Boodoo, *Manager*  
Stephen O'Shea, *Assistant Manager*  
Oscar Ceron, Reginald McKenzie, Norbert Wescott: *Zoo Park Maintainers*  
Selwyn Ramnaidu, Chaitram Singh: *Assistant Zoo Park Maintainers*  
Wayne Peters, *Supervising Attendant*  
Elizabeth Chotalal, Luis Cruz, Stacey Cummings, Eisha Johnson, Angelita Rivera, James Savastano: *Park Attendants*

## Horticulture

Todd John Comstock, *Manager of Horticulture, City Zoos*

### Security & Admissions

Ken Norris, *Manager*  
Eddie Wright, *Assistant Manager*  
Joanne Carrillo, *Supervisor*  
Lemuel Brummell, Rogelio Dickens, Michael Fazzino, Vincent Ferguson, David McPhearson, Yolanda Smith, Jennifer Soto, Romualdo Vasquez, Milton Williams, Rosa Williams: *Assistant Zoo Park Maintainers*  
Lola Chung, Brenda Martinez, Nicole Smith, Suheilee Vasquez: *Ticket Agents/Cashiers*

## QUEENS ZOO

Scott Silver, *Facility Director and Curator*

### Animal Programs

Craig Gibbs, *Assistant Curator*  
Rebecca Benjamin, *Administrative Assistant*  
Donna-Mae Graffam, *Supervisor*  
Mark Hall, *Assistant Supervisor*  
Marcy Wartell Brown, Marcos Garcia, Dana Vasquez, Raul Vasquez: *Senior Wild Animal Keepers*  
Kelly Carman, Barbara Fung, Ira Goldman, Susan Makower, David Morales, James Putnam-Ethimiou, Mark Quadrozzi, Erin Rosebrock, Thomas Seals, Aaron Springer, Andrea White:

*Wild Animal Keepers*  
Andrea Aplasca, *Veterinary Technician*

## Operations & Maintenance

Jeffrey Blatz, *Manager*  
James Wohlmaker, *Assistant Manager*  
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 Copobianco, *Manager*  
Jose Rosado, *Assistant Manager*  
Richard Godas, *Supervisor*  
Paul Fairall, Leonard Golino, Dannis Graham, Anthony Mark, Noel Martinez, Garfield McEachron, Carlton Nelson, Rafael Nieves, William Rosado, Dhandoe Shankar: *Assistant Zoo Park Maintainers*  
Tina Anderson, Joanne Crespo, Augustella Zeko: *Ticket Agents*

## GLOBAL CONSERVATION

The WCS Global Conservation Program employs thousands of staff around the world. Each is deeply valued and contributes substantially to our mission. We regret that space allows us to list only the most senior individuals.

John Robinson, *Executive Vice President for Conservation and Science, Joan O. L. Tweedy Chair in Conservation Strategy*  
Josh Ginsberg, *Senior Vice President, Programs*  
Matthew Hatchwell, *Director of European Office*  
William Conway, Holly Dublin, Maurice Hornocker, George Schaller, Bill Weber: *Senior Conservationists*  
Eric Sanderson, *Landscape Ecologist*

Staff: Sandra Comte, Steve Gallo, Todd Olson, Jonathan Palmer  
Susan Tressler, *Associate Director of Program Development*  
Staff: Liz Lauck, Leticia Orti, Rachael Vinyard  
Elizabeth Bennett, *Vice President of WCS Species Program*  
Staff: Simon Hedges, John Polisar, Howard Rosenbaum, John Thorbjarnarson

## CONSERVATION POLICY

Linda Krueger, *Vice President of Conservation Policy Program*  
Staff: Lizza Protas  
Helen Crowley, Ray Victorine:  
*Associate Directors of Conservation Finance*  
Staff: Michel Masozera

## CONSERVATION SUPPORT

David Wilkie, *Director*  
Tim O'Brien, *Senior Conservationist*  
Will Banham, *Associate Director*  
Jane Carter Ingram, Leticia Orti:  
*Assistant Directors*  
Staff: Tom Clements, Karl Didier, Lynn Duda, Kim Fisher, Amanda Huron, Danielle LaBruna, Kate Mastro, Erika Reuter, Robert Rose, Samantha Strindberg

## AFRICA

James Deutsch, *Executive Director*  
Graeme Patterson, Kirstin Siex:  
*Assistant Directors*  
*Additional Staff:* Connie Clark, Christina Connolly, Jennifer Kennard, Fiona Maisels, David Moyer, Guy Picton-Phillips, Amy Pokempner, John Poulsen, Monica Wrobel

## Cameroon

Marc Billong, Albert Ekinde, Bernard Fosso, Roger Fotso, Marie Odile Kabeyene, Anthony Nchanji Chifu, Romanus Ikfuingei, Gwendoline Kwankam, Comfort Ndah Ndom, Mbalnoudji Ngodjo Ndodjim, Aaron Nicholas, David Nzouango, Jean Bosco Pouomegne, Andre Siko, Ymke Warren

## Central Africa Republic

Andrea Turkalo

## Chad

Michael Fay, Darren Potgieter

## Democratic Republic of Congo

Fidele Amsini, Ellen Brown, Leonard Chihenguza, Floribert Bujo Dhego, Benjamin Ntumba Kaciela, Emmanuel Kayumba, Deo Gracias Kujirakwinja, Innocent Liengola, Guy Mbayma, Jean-Remy Makana, Jacob Madidi, Joel Masselink, Robert Mwinihali, Baby Ngungu Kasareka, Boni Nyembo, Solange Osako, Baraka Othep, Raymond Paluku, Richard Tshombe, Papy Shamavu, Joelle Badesire, Alain Twendilonghe, Arcel Bamba, Jeff Matunguru, Ashley Vosper

## Republic of Congo

Rene Aleba, Patrick Boundja, Thomas Breuer, Mark Dripchack, Mamadou Faye, Remy Ledauphin, Richard Malonga, Nazaire Massamba, Jerome Mokoko, Suzanne Mondoux, Patrice Mongo, David Morgan, Aline Ndombi, Tomo Nishihara, Crickette Sanz, Paul Telfer, Hannah Thomas, Felin Twagirashyaka, Hilde VanLeeuwe, Moise Zoniaba

## Gabon

Rostand Aba'a, Gaspar Abitisi, Nicholas Bout, Romain Calaque, Josie Demmer, Angela Formia, Kath Jeffrey, Martin Hega, Louise Hurst, Anne-Marie Ndong-Obiang, Rich Parnell, Malcolm Starkey, Ruth Starkey, Matt Steil, Jean-Pierre van de Weghe, Joe Walston, Alden Whittaker

## Ivory Coast

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

## Kenya

Alayne Cotterill, Stephanie Dolrenry, Steven Ekwanga, Laurence Frank, Leela Hazzah, Anthony ole Kasanga, Evans Lemusana, Seamus MacLennan, Evelyn Ndinda, James ole Putanoi, Rosie Woodroffe

## Madagascar

Lantoniaina Andriamampianina, Aristide Andrianarimisa, Vonjy Andrianjakarivelo, Olga Andriantsoa, Lisa Gaylord, Norolalaina Raharitsimba Heritiana, Christopher Holmes, Jean Jacques Jaozandry, Francisco Ramananjatovo, Cesaire Ramilison, Herilala Randriamahazo, Bemahafaly Randriamanantsoa, Luccianie Raonison, Andriamandimbisoa Razafimpahanana, Nafis Razafintsalama, Yvette Razafindrakoto, Salohy Soloarivelo

## Nigeria

Jonas Attah, Andrew Dunn, Inaoyom Imong, Michael Moki, Louis Nkonyu, Francis Okeke, Mark Otu, Celestine Wirkikfea

## Rwanda

Nsengiyunva Barakabuye, Innocent Buvumuhana, Nerissa Chao, Julian Easton, Vincent Hakizimana, M. Michel, Felix Mulinadahabi, Ian Munanura, N. Nanette, Joseph Ngango, Nicholas Ntare, Sentama Vedaste, Bill Weber

## Southern Sudan

Margaret Adong, Girma Argaw, Paul Peter Awol, Jill deBruijn, Paul Elkan, Sarah Elkan, Simon Gain, Falk Grossmann, Thomas Kamau, Fiachra Kearney, Joyce Kilonzi, Michael Lopidia, Maria Carbo Penche, Albert Schenk, John Moi Venus, Michelle Wieland

## Tanzania

Nuhu Daniel, Tim Davenport, Daniela de Luca, Sarah Durant, Said Fakh, Charles Foley, Lara Foley, Sylvanus Kimiti, Sophy Machaga, Bakari Mbanu, Noah Mpunga, Ayubu Msago, Linus Munishi, Hamisi Sadalla, Haruna Sauko, Festo Semanini

## Uganda

Sam Ayebare, Ellen Bean, Jane Bemigisha, Jan Broekhuis, Ivan Buddo, Miriam van Heist, Joseph Kabaga,

Stonewall Kato, Ben Kirunda, Scovia Kobusingye, Alastair McNeilage, Hamlet Mugabe, Tutilo Mudumba, Geoffrey Mwedde, Simon Nampindo, Grace Nangendo, Mustapha Nsubuga, Edward Okot, William Olupot, Sarah Opio, Wilibroad Owori, Juliet Owori, Andrew Plumptre, Sarah Prinsloo, Douglas Sheil, Warren Turinawe, Juraj Ujhazy, Christine Vuciru

## Zambia

William Banda, Chisense Chembe, Cephas Chewe, Chris Chiwenda, Whiteson Daka, Dale Lewis, Makando Kabila, Warence Kaluba, Mike Matokwani, Isaac Mwanaumo, Handsen Mseteka, Kennedy Mulilo, Ruth Nabuyanda, Nemiah Tembo

## ASIA

Colin Poole, *Director*  
Peter Clyne, Peter Zahler:  
*Assistant Directors*  
Staff: Rose King, Lisa Yook

## Regional

Etienne Delattre, Simon Hedges, Ullas Karanth, Antony Lynam, Madhu Rao, Emma Stokes

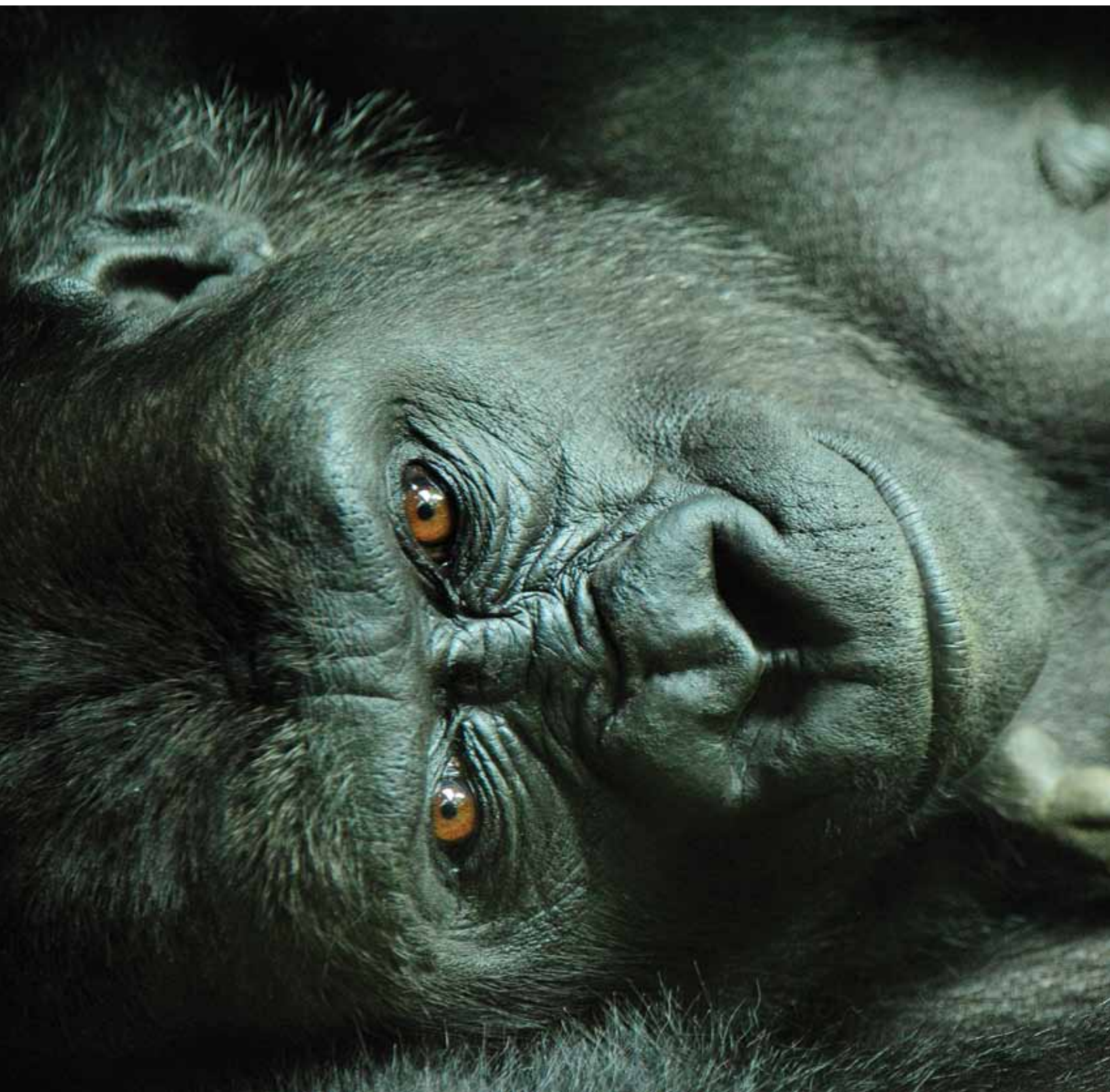
## Afghanistan


Hussain Ali, Inayat Ali, Don Bedunah, Peter Bowles, David Bradfield, Zabihullah Ejiasi, Inayatullah Farahmand, Bilal Habib, Erin Hannan, Mary Heslin, McKenzie Johnson, Nina Kanderian, Iqbal Karim, David Lawson, Rob Obendorf, Stephane Ostrowski, Haqiq Rahmani, Qais Sahar, Mohammed Shafiq, Chris Shank, Anthony Simms, Peter Smallwood, Kara Stevens, Saboor Sultani

## Cambodia

Sophie Allebone-Webb, Pech Bunnat, Hong Chamnan, Song Chansocheat, Tom Evans, Ashish John, Mark Gately, Nhem Sok Heng, Long Kheng, Nut Menghor, Karen Nielsen, Hannah O'Kelly, Pet Phaktra,







A western lowland gorilla relaxes in the WCS Bronx Zoo's Congo Gorilla Forest exhibit.

Edward Pollard, Hugo Rainey,  
Tao Sarath, Tan Setha, Ea  
Sokha, Men Soriyun, Heng  
Sovannara, Sun Visal

#### China

Cirenbaizhen, Caidanjia, Langhua  
Du, Youcai Du, Youmei  
Du, Yufang Gao, Aili Kang,  
Shengbiao Li, Haitang Liang,  
Lishu Li, Anya Lim, Fuwen Liu,  
Tong Liu, Shunqing Lu, Jirong  
Tang, Zhenyu Wen, Donna Xiao,  
Yan Xie, Fang Zhang, Guihong  
Zhang, Mingwang Zhang,  
Mingxia Zhang, Huaidong Zhao,  
Wenbo Zhu

#### India

Ravi Chellam, Advait Edgaonkar,  
Arjun Gopaldaswamy, Sanjay  
Gubbi, A. V. Haridevan,  
Ajith Kumar, Samba Kumar,  
P. M. Muthanna

#### Indonesia

Dwi Nugroho Adhiasto, Firdaus  
R. Affandi, Harry Alexander,  
Herovan Alfin, Noviar  
Andayani, Big Antono, Runy  
R. Badrunnisa, Bambang P.  
Bharoto, Nick Brickle, Akbar  
Ario Digdo, Sherly M. Ering,  
Patih Fahlapie, Giyanto, Donny  
Gunaryadi, Agung Hawari Hadi,  
Herwansyah, Iwan Hunowu,  
Munawar Kholis, David  
Kosegeran, Deasy Krisanti,  
Deky Kristiyantono, Usman  
Laheto, Leswarawati, Edyson  
Maneasa, Athaya Mubarak,  
Meyner Nusalawo, Cep Dedi  
Permadi, Lilik Prastowo, Wulan  
Pusparini, Danny Albert Rogi,  
Frida M. Saanin, Stephen Siwu,  
Vicky Soleman, Sugiyo, Ade  
Kusuma Sumantri, John Tasirin,  
Rusli Usman, R. Wianasari,  
Waktre, Hariyo Wibisono,  
Nurul Winarni

#### Lao PDR

Keophithoune Bounnak,  
Anita Bousa, Souksavath  
Chanthaneun, Chris  
Hallam, Troy Hansel, Michael  
Hedemark, Arlyne Johnson,  
Lucy Keatts, Khampaseuth  
KongAy, Phouthakone  
Luangyotha, Emma Litgermoet,  
Alex McWilliam, Sithisak Pan-  
Inhuane, Vanida Philakone,  
Anousone Philavanh, Santi  
Saypanya, Sengvilay Seateun,  
S. Sengthavideth, Soubanh  
Sinthammavong, Kelly  
Spence, Soumalie Sygnavong,  
Anhsany Sypasong, Chanthavy  
Vongkhamheng, Vene Vongphet

#### Malaysia

Azima Azmi, Melissa Bilong,  
Eunice Chia, Cynthia Chin,  
Cannely Goyem, Melvin Gumal,  
Jason Hon, Norhayani Jalaweh,  
Norhidayati Khalid, Song  
Horng Liang, Leona Liman,  
Chee Pheng Low, John Mathai,  
Wegess Midok, Eling Ng, Sylvia  
Ng, Emma Noordin, Aris Oziar,  
Joshua Pandong, Jessica Tay,  
Mufeng Voon, Ee Phin Wong

#### Mongolia

Jadamba Batmonkh,  
Tuvshinjargal Dashdawaa,  
Amanda Fine, Losolmaa  
Jambal, Ochirkhuyag Lkhamjav,  
Odonchimeg Nyamtseren, Kirk  
Olson, Bolortsetseg Sanjaa,  
Enkhtuvshin Shiilegdamba,  
Agizul Sosor, Susann  
Townsend, Ann Winters

#### Myanmar

U Aung Myo Chit, Daw San San  
Htay, U Saw Htun, U Win Ko  
Ko, U Kyaw Thinn Latt, U Than  
Myint, Daw Khin Myo Myo, U  
Kyin Khan Kam, U Aung Lwin,  
U Kyaw Moe, U Thu Kyaw Moe,



U Hla Naing, Daw Myint Myint  
Oo, U Saw Htoo Tha Po, U Htun  
Shaung, Robert Tizard, U Zaw  
Win, U Than Zaw

### **Pakistan**

Mayoor Khan, Norullah, Taj  
Muhammad

### **Papua New Guinea**

Arison Arihafa, John Kuange,  
Ross Sinclair, Tanya Zeriga

### **Russia**

Andre Dotsenko, Evgeny  
Gishko, John Goodrich, Cheryl  
Hojnowski, Natalia Karp, Alexei  
Kostyria, Vladimir Melnikov,  
Clay Miller, Dale Miquelle,  
Marina Miquelle, Katya  
Nikolaeva, John Paczkowski,  
Tanya Perova, Alexander  
Reebin, Nikolai Reebin, Anton  
Semyonov, Ivan Serodkin,  
Svetlana Soutryina

### **Thailand**

Thongbai Charoendong, Manat  
Inchum, Sittichai Jinamoy,  
Pornkamol Jomburom,  
Thongjia Kaewpaitoon,  
Chai Kamkaew, Permsak  
Kanishthajata, Nont Keawwan,  
Aangkana Makvilai, Petch  
Manopawitr, Panomporn  
Patithus, Anak Pattanavibool,  
Chaksin Praiket, Yossawadee  
Rakpongpan, Chokanan  
Saengduen, Chution Savini,  
Suitpatee Siethongdee,  
Jiraporn Teampnpong,  
Witthaya Thuekthao, Jutamas  
Tifong, Mayuree Umponjan,  
Kwanchai Waitanyakarn

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# PUBLICATIONS

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[ OPPOSITE ] A young Burdell's zebra in Zambia's Luangwa Valley



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# QA & NANCY CLUM

**NANCY CLUM IS WCS'S NEW CURATOR OF ORNITHOLOGY. SHE DISCUSSES THE UNIQUE CONSERVATION NEEDS OF ENDANGERED BIRDS, HOW WCS WORKS TO SAVE THEM, AVIAN INFLUENZA, AND ONE MEMORABLE TALKING PARROT.**

**MOST BIRDS FLY. SOME EVEN COVER GREAT EXPANSSES OF HABITAT THAT CAN SPAN ENTIRE HEMISPHERES. DOES THE ABILITY TO FLY MAKE PROTECTING BIRDS EASIER OR HARDER?**

Theoretically, their ability to fly makes them more resilient to environmental change, but this isn't always the case. Mauritius kestrels were critically endangered as a result of loss of primary forest habitat. Although there were appropriate resources available to them in secondary habitat close by, they wouldn't use this habitat. It wasn't until biologists raised and released young birds into the secondary forest that they learned to make use of these resources. This allowed their populations to rebound. For migratory birds you have to conserve breeding grounds, wintering grounds, and stopover sites to successfully conserve the species. Even with non-migratory birds, you have to conserve a continuous block of habitat, which is becoming increasingly hard in today's fragmented landscapes. However, it can be easier for birds than other animals to move among disjunct areas, which is an advantage in today's fragmented landscapes.

The down side of that is that habitat fragments often differ in quality, and some species are sensitive to fragment size.

**BIRDS HAVE HISTORICALLY PLAYED LARGE ROLES IN HUMAN CULTURE. YET MANY PEOPLE KNOW LITTLE ABOUT THEM. DO YOU THINK YOUR WORK HELPS PEOPLE BETTER CONNECT WITH NATURE—AND SPECIFICALLY, WITH BIRDS?**

Actually, I think people know relatively little about most aspects of the natural world. But I also think people have an affinity for nature and that it's just a matter of finding a way to waken that in them. That's part of the reason I think zoos are important. Most people rarely interact with wildlife, and it's difficult for them to care about things that they haven't experienced. By curating the bird collection at the Bronx Zoo, I facilitate those experiences. By breeding species of conservation concern, I help ensure these species are there in the future for people to appreciate. And my work in the field helps people engage in their own conservation work.

**PROTECTING BOTH MIGRATORY, AND IN MANY CASES NON-MIGRATORY HABITATS, CAN BE AN INTERNATIONAL UNDERTAKING. IS IT DIFFICULT GETTING EVERYONE ON BOARD?**

It can be very difficult. One way WCS accomplishes this is by making long-term investments in sites. We don't just swoop in, tell people what they should do, and leave. We work to build an infrastructure that supports conservation in-country and to train the next generation of conservation professionals. So we not only have long-standing relationships, but the programs are "owned" by local people. In cases where we work across multiple sites or with many partners, we often bring together everyone involved to agree on regional priorities, which gets people working towards common goals.

**AVIAN INFLUENZA DEMONSTRATES HOW A DISEASE CAN SPREAD BETWEEN SPECIES. WHAT ARE THE CHIEF FACTORS AT PLAY, AND ARE WE SEEING MORE INTERSPECIES TRANSMISSION THAN IN THE PAST?**

The major factor in diseases "jumping" from one species to another is proximity. This happens more today as a result of the mixing of domestic and wild species in live markets and increased contact as humans settle into previously wild areas.

**THE "ONE WCS" MISSION APPROACHES STUDYING CAPTIVE AND WILD SPECIES IN TANDEM. HOW HAS SHARING INSIGHTS AMONG SCIENTISTS IN THE FIELD AND IN ZOOS AND AQUARIUMS PAID OFF?**

Outside of Indonesia, the Bronx Zoo has the only captive population of maleo, an endangered species that WCS also works with in the field. This species buries its eggs in the ground, so the husbandry is very different from other birds. If incubation parameters aren't correct, the chicks don't hatch successfully in captivity—and we couldn't seem to get the conditions quite right. We logged temperature and humidity at natural nest sites in Sulawesi, and the temperatures turned out to be much higher than we ever would have considered using. Since taking that into account, we've had very good hatching success. We're also researching nest site preferences and methods for aging birds. And we're planning a collaborative project on tracking released chicks so we can assess their head-starting program. We'll test the tracking devices on captive birds before attempting this in the field.

**WHAT'S THE GREATEST SIGN OF INTELLIGENCE THAT YOU'VE PERSONALLY OBSERVED IN A BIRD?**

My sister Linda used to visit a friend who had an African grey parrot. They'd sit around, drink wine, and talk. One time as my sister was arriving, her friend looked out the front window



and said, "Oh, here comes Linda!" and the bird immediately responded with "glug, glug, glug"—a perfect imitation of wine being poured into a glass. I hope this story doesn't inspire anyone to run out and buy a parrot for a pet. They can be demanding—it's like having a two-year-old that never grows up, except that they become sexually mature. So it's like having a hormonal two-year-old that never grows up. Unless you're into that level of commitment, it eventually ends up badly for everyone, especially the bird.

**YOU'VE WORKED WITH BIRDS IN NUMEROUS CAPACITIES AND SAY YOU PREFER WORKING IN THE NONPROFIT SECTOR. WHY?**

One reason I prefer working in a nonprofit environment is that a greater proportion of my time is devoted to hands-on conservation. In academia, you naturally devote a lot of time to teaching and university service. Teaching is important—which is why I still teach—but to do it well is extremely time consuming. Also, not all academic environments are supportive of applied work. Basic science is important, but I am personally very drawn to practical problem solving. In a nonprofit, you have the opportunity to "cut to the chase"—to identify areas of action and then act. Government agencies have the advantage of guaranteed resources, but someone much higher up may be setting your priorities. In a nonprofit, you have greater opportunity to influence those priorities.

[ ABOVE ] In the field, Nancy Clum surveys West Indian flamingos on Inagua Island in the Bahamas. At the Bronx Zoo, Nancy sits within the Caribbean flamingo exhibit.





# 15 WCS BY THE NUMBERS

[ LEFT ] WCS released three videos in the spring depicting the financial troubles New York institutions faced as the State considered eliminating its 2010 budget for Zoos, Botanical Gardens and Aquariums (ZBGA). The first video went viral through YouTube with 93,714 views and starred Wednesday, a porcupine at WCS's Bronx Zoo, who was laid off. Soon, CNN, FOX, CBS and other networks were broadcasting Wednesday and her plight into thousands of homes. In the end, New Yorkers sent more than 83,000 messages to Albany through the "Save ZBGA" campaign and its funding for FY 2010 was fully restored.

Operating expenses and plant renewal funding: **\$203,744,000**

Staff size: **MORE THAN 4,000**

Countries we work in: **MORE THAN 60**

Conservation programs we operate: **ABOUT 500**

Animals in all five New York facilities: **MORE THAN 14,200**

2009 attendance for WCS zoos and aquarium: **4,349,637**

Students matriculated at our Urban School for Wildlife: **289**

Number of new species or sub-species discovered by WCS conservationists this year: **3**

NYC Teachers trained by WCS: **ABOUT 13,500**

Class trips to the Bronx Zoo in fiscal year 2009: **4,491**

Students and teachers on those trips: **294,733**

Total economic activity generated by WCS annually: **ABOUT \$414.6 MILLION**

Number of New York City teenagers WCS employs annually: **ABOUT 360**

Eco-tricycles zooming around the Queens Zoo: **2**

Birthday celebrated by Bronx Zoo in November: **110**

Number of priority landscapes and seascapes we work to conserve: **73**

Number of national protected areas WCS has helped create globally: **MORE THAN 130**

Number of protected areas WCS helped create or enhance in 2009: **4**

Number of WCS LEED-certified "Gold" buildings: **2**

Acres of wildlife parks we manage in NYC: **308.5**

Value of television stories placed in 2009: **\$6.9 MILLION**

How many people "Ran for the Wild" in April at the Bronx Zoo: **3,624**

Number of WCS veterinarians and health scientists abroad: **30**

Hours that a WCS veterinarian is available at Bronx Zoo: **24-7**

Lemurs born in the Madagascar! exhibit's first year: **6**

People who viewed the baby dwarf mongooses video clip on www.wcs.org last summer within its first week: **54,896**

Number of people who visited WCS online in 2009: **6,762,104**

Number of animals in the WCS collection that paint: **21**

Number of Bronx Zoo gorillas currently exploring their artistic sides: **6**

## ANIMAL CENSUS

As of June 30, 2009

Facility/Class	Species (On-site and In-on-loan)	Births (Includes non-viable)	Specimens (On-site and In-on-loan)
<b>BRONX ZOO</b>			
Mammals	166	1,228*	2,495
Birds	220	130	1,181
Reptiles	113	15	481
Amphibians	42	523	798
Invertebrates	22	3,488	59,903*
Pisces	43	145	1,351
<b>TOTAL</b>	<b>606</b>	<b>5,529</b>	<b>66,209</b>

<b>CENTRAL PARK ZOO</b>			
Mammals	25	663*	584
Birds	85	67	384
Reptiles	34	0	643
Amphibians	20	1,865*	826
Invertebrates	2	0	110,028*
Pisces	5	0	22
<b>Total</b>	<b>171</b>	<b>2,595</b>	<b>112,487</b>

<b>QUEENS ZOO</b>			
Mammals	26	5	84
Birds	42	38	226
Reptiles	6	0	50
Amphibians	0	0	0
Invertebrates	1	0	25
Pisces	3	0	12
<b>Total</b>	<b>78</b>	<b>43</b>	<b>397</b>

<b>PROSPECT PARK ZOO</b>			
Mammals	35	9	119
Birds	33	0	127
Reptiles	30	3	97
Amphibians	18	36	76
Invertebrates	3	50	108
Pisces	11	94	277
<b>Total</b>	<b>130</b>	<b>192</b>	<b>804</b>

<b>NY AQUARIUM</b>			
Mammals	6	0	21
Birds	1	0	14
Reptiles	6	0	6
Amphibians	9	0	44
Invertebrates	104	0	8,406
Pisces	213	0	2,646
<b>Total</b>	<b>345</b>	<b>0</b>	<b>11,137</b>

- \* Number of births includes 1,075 bats and rodents.
- \* Insects; mainly Madagascar hissing cockroaches.
- \* Includes 655 bats.
- \* Includes more than 1,300 Puerto Rican crested toads that were released into the wild in Puerto Rico and 500 Wyoming toads. Both species are endangered and part of a release program.
- \* Includes a new ant colony of approximately 100,000 specimens.



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## RECOMMENDED FORM OF BEQUEST 2009

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.”

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If you wish to discuss the language of your bequest and other planned giving options, please contact the Office of Planned Giving at 719-220-6894.

[ BACK COVER ] The new WCS Center for Global Conservation at the Bronx Zoo.

For information on how you can support the Wildlife Conservation Society, please call our Development Department 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.





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