2022 IMPACT REPORT

We Stand for Wildlife®

Wildlife Conservation Society

MISSION

WCS saves wildlife and wild places worldwide through science, conservation action, education, and inspiring people to value nature.

VISION

WCS envisions a world where wildlife thrives in healthy lands and seas, valued by societies that embrace and benefit from the diversity and integrity of life on Earth.

DISCOVER

We use science to discover new knowledge, guide our conservation action, and inform policy decisions to scale up our impact.

PROTECT

We protect and rewild priority species and wild places, and reduce the threats causing the loss of wildlife and wild places.

INSPIRE

We inspire and engage people to care about wildlife and wild places by leveraging the power of our zoos and aquarium, and expanding digital platforms to reach a global audience.

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Letter from the Chair of the Board

I hope you feel as proud as I do when you read through this impact report and see all that the Wildlife Conservation Society (WCS) has accomplished over the past year thanks to your strong support and the hard work of our zoo and field experts in New York City and around the world.

Like many of you, I have loved animals since I was a child, so WCS's mission to save wildlife and wild places is close to my heart. It means a lot to me to know that together, we are targeting our conservation efforts to the world's most critical places and making a real difference every day for elephants, tigers, and numerous other species fighting for their survival.

As you may know, Cristián Samper is stepping down as WCS President and CEO this fall after 10 years of exceptional leadership. With our unique strengths and vital mission—and in this critical decade for biodiversity and climate—WCS is well positioned to attract top talent to take the helm. I look forward to partnering with the new CEO to meet the challenges ahead of us, and to saving wildlife and wild places for generations to come.

Alejandro Santo Domingo
Chair of the Board

"Together, we can help wildlife not only survive, but thrive."

Letter from the President & CEO

Serving as President and CEO of WCS for the past decade has been a great honor. I am inspired every day by the passion, talents, and diversity of my colleagues around the world—and by our supporters' generosity and commitment to saving wildlife and wild places.

You can get to know some of WCS's supporters and experts by reading their profiles on the pages that follow. Without them, we could not achieve the kind of results we share in this impact report—from promising gains for big cats and elephants, to robust forest protections in the Congo Basin and Mesoamerica, and much more.

Shortly after I started at WCS in 2012, Hurricane Sandy devastated our New York Aquarium. More recently, we have all confronted the COVID-19 pandemic. Yet our five urban wildlife parks have come back from these challenges stronger. The aquarium is now fully reopened, with new exhibits that connect visitors to the wonders of marine life in the New York Seascape and beyond. Last year we welcomed more than 3.5 million guests to our four zoos and aquarium in New York City, offering new experiences and family favorites like the Bronx Zoo's World of Birds, which is celebrating its 50th anniversary.

Globally, we face three daunting and interconnected crises: biodiversity loss, climate change, and the pandemic. WCS is well positioned to contribute to the search for solutions with a 2030 strategy informed by our assessment of the rapidly changing world, the urgency of the three existential crises we face, our unique strengths, and the new opportunities that we can leverage to scale up our impact. This strategy, which was developed by a stellar group of WCS experts and approved by our Board of Trustees, aims to:

- Protect and rewild species and Nature's Strongholds, in partnership with governments and Indigenous Peoples and Local Communities
- Reduce threats to wildlife and wild places by advancing nature-positive solutions to the climate crisis, promoting One Health solutions, and fighting wildlife crime and unsustainable hunting
- Inspire and expand support for conservation through our four zoos and aquarium, including through new forms of digital outreach
- Leverage our impact through science and policy—connecting them with action on the ground

There's a lot to be proud of at WCS today—and many reasons to feel hopeful. I thank my colleagues at WCS, our Board, and most importantly our many supporters for placing their trust in me, and for their partnership in advancing our mission of saving wildlife and wild places.

Cristián Samper

Cristián Samper
President & CEO

FROM CRISIS–TO→RECOVERY

The challenges we face are steep: 1 million species at risk of extinction, accelerating climate change, and more emerging diseases as people disrupt natural systems. Yet your partnership has enabled us to protect Nature's Strongholds and vital species, advance nature-positive climate solutions, and inspire a diverse cadre of conservation advocates. With your strong support of our mission, we have hope for the future.

OUR SOLUTIONS

SAVING WILDLIFE AND WILD PLACES

SAVING WILDLIFE

"We have one planet we call home, and we need to protect it—for us and for the 10 million species we share the planet with."

—Cristián Samper
President & CEO

All animals—from mighty whales to tiny honeybees—play critical roles in their habitats. Their daily rounds of eating, excreting, traveling, and homebuilding help maintain the health of the ecosystems they are part of—or can be harmful if, for example, predators vanish, allowing prey species to overconsume natural resources.

We still have a great deal to learn about our planet's complex system of natural checks, balances, and interdependencies. But we do know that right now, 1 million species are at risk of extinction. This means that the earth's entire web of life—on which we all depend—is also in jeopardy.

There is still time to reverse this dangerous trend. With your support, WCS is shining the way forward with science-driven conservation and policy in more than 50 countries around the world. Big cats, elephants, apes, whales, dolphins, and many more species are not just surviving but thriving at sites where WCS has worked the longest. Please read on for stories about wildlife you have helped us protect and recover around the world.

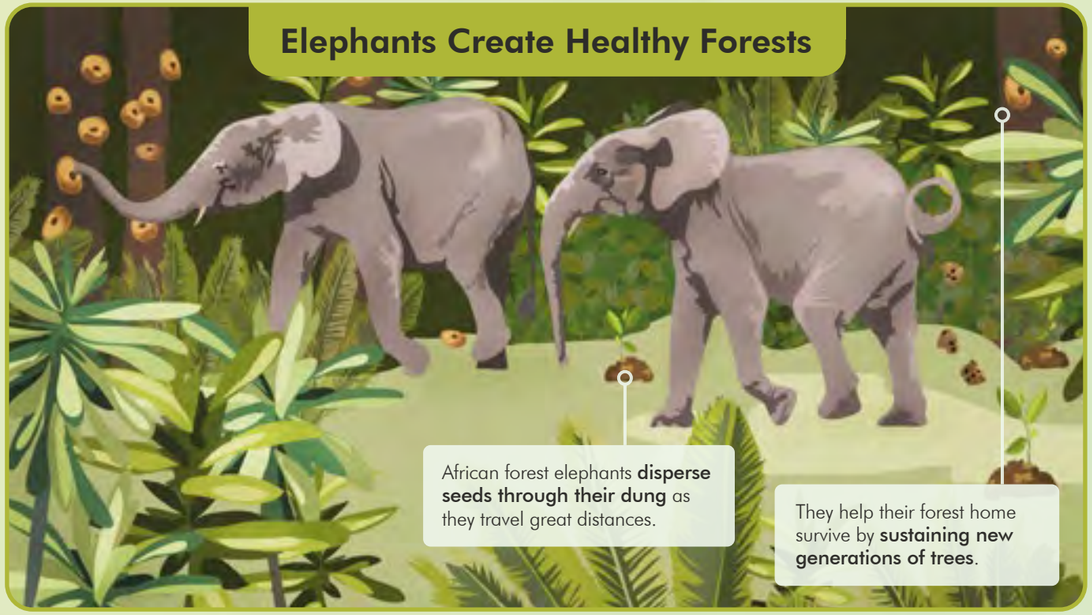
Queen Elizabeth National Park in Uganda is one of the few places where lions habitually climb trees—a learned behavior, likely passed down through generations. Lions face severe threats across Africa, including habitat loss, snaring, and illegal wildlife trade. WCS and partners are monitoring lions in Uganda, removing snares and traps, and helping to reduce conflict between lions and local herders.

What Roles Do Species Play in Ecosystems?

Each species has an important role to play in maintaining ecosystem balance. When we manage our natural world effectively, we protect our food sources, water supply, climate, health, and well-being.

The examples below are meant to highlight just a few beneficial actions, though each species does much more.

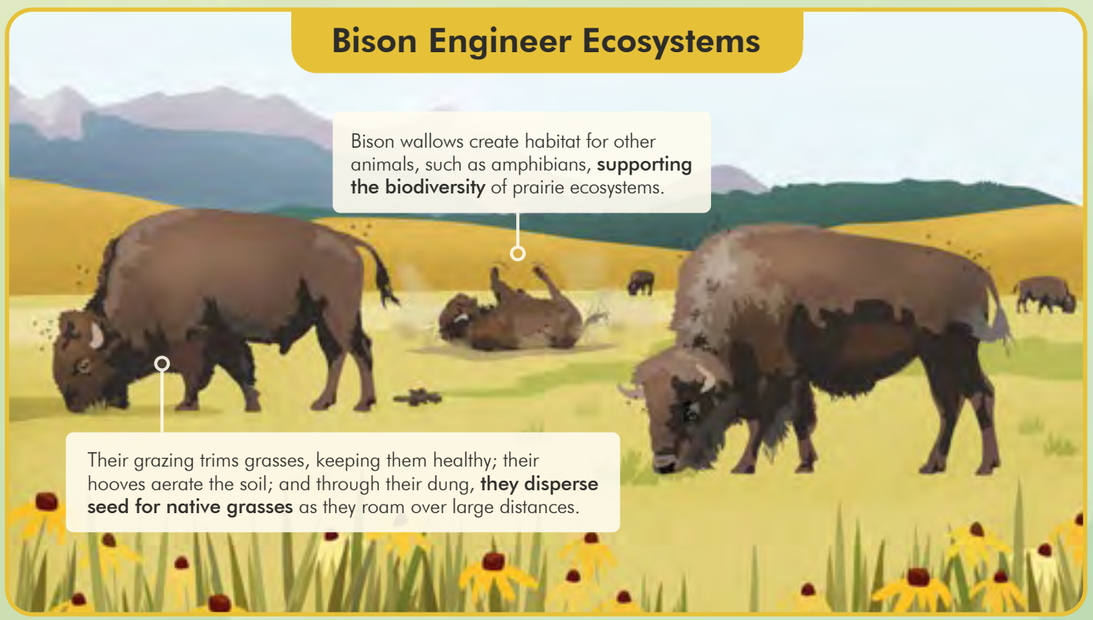
Elephants Create Healthy Forests



African forest elephants **disperse seeds through their dung** as they travel great distances.

They help their forest home survive by **sustaining new generations of trees**.

Bison Engineer Ecosystems



Bison wallows create habitat for other animals, such as amphibians, **supporting the biodiversity** of prairie ecosystems.

Their grazing trims grasses, keeping them healthy; their hooves aerate the soil; and through their dung, **they disperse seed for native grasses** as they roam over large distances.

"In nature, nothing exists alone."

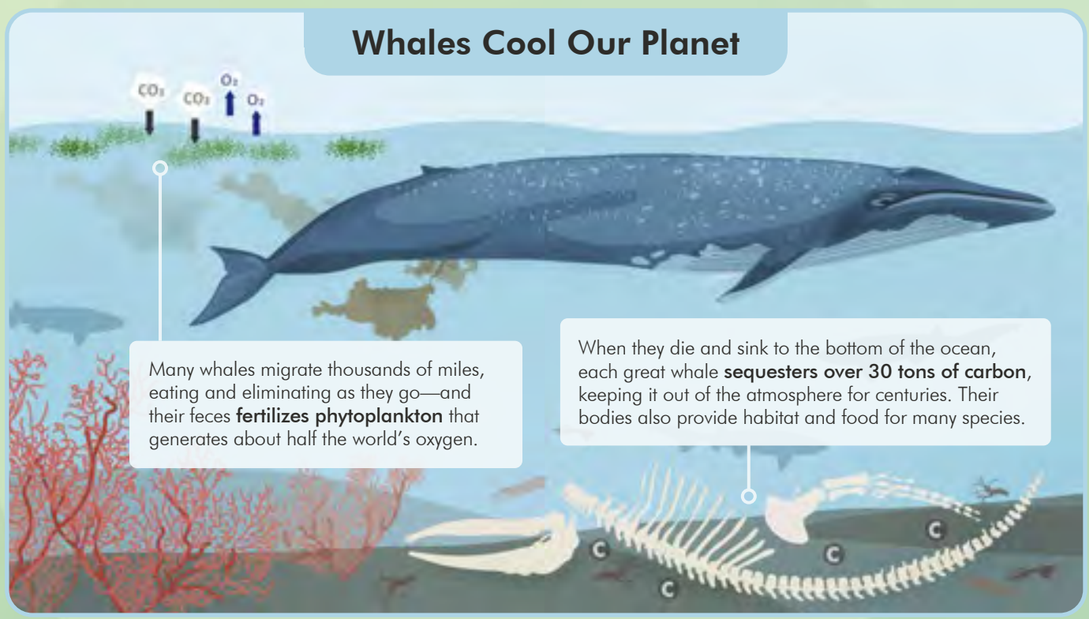
—Rachel Carson
Silent Spring

Sea Otters Help Kelp Forests Thrive

Kelp absorbs millions of tons of carbon dioxide and is home to a diversity of sea life that depends on it for food and shelter—including sea otters.

Sea otters eat the sea urchins that feed on kelp—preventing urchin numbers from growing too high and overconsuming kelp forests.

Whales Cool Our Planet



Many whales migrate thousands of miles, eating and eliminating as they go—and their feces **fertilizes phytoplankton** that generates about half the world's oxygen.

When they die and sink to the bottom of the ocean, each great whale **sequesters over 30 tons of carbon**, keeping it out of the atmosphere for centuries. Their bodies also provide habitat and food for many species.

Illustrations by Sarah Markes

Growing Hope for Big Cats, Building on Gains

Big cats are more than majestic cultural icons. When these top predators disappear, the effects ripple across ecosystems. For example, when herbivore numbers are unchecked, they can overconsume native foliage, degrading natural systems that provide climate benefits for all of us, as well as important habitat for pollinators and many other species.

While big cats, including tigers and jaguars, are making a comeback at WCS sites, they still face many threats, including habitat loss, poaching, and overhunting of prey. Our goal is to restore and sustain key big cat populations at their natural carrying capacity in 33 countries across Africa, Asia, and the Americas.

SPOTLIGHT

How We Save Big Cats

Protect and Restore Key Habitat
WCS and partners recovered nearly 1,554 square kilometers of forest that had been damaged by illegal cattle ranching in a critical Central American jaguar stronghold.

Research and Monitor Populations
WCS co-authored the first peer-reviewed paper on Kenya's national lion survey, establishing a rigorous standard for surveying lions at the national level—critical for effective management.

Prevent Poaching
WCS staff and rangers stopped illegal activities throughout more than 65,500 square kilometers of tiger habitat across six countries in 2021 alone, despite COVID-19 constraints.

Reduce Human-Cat Conflict
WCS works with Patagonian herders to train guard dogs who keep livestock safe, reducing conflict with pumas, Andean cats, and other native predators.

The global population of wild tigers has increased by 40% in the last decade.

Tigers

In this Year of the Tiger, there is new hope for big cats. Research from WCS and partners indicates that the global population of wild tigers is now about 4,500—a 40 percent increase in the last decade. Tigers at WCS sites in China, India, Thailand, and Russia have shown strong gains in numbers and in Indonesia and Malaysia they are holding steady—testament to our proven strategy of excellent science, deep partnerships, enduring on-site presence, and continuous assessment of our methods to find paths to even better results.

LEFT In Thailand's Huai Kha Khaeng and Thung Yai regions, tiger populations have doubled, and we have helped reduce tiger poaching incidents to zero.

Populations of jaguars and tigers are rising or holding steady at WCS sites in the Americas and Asia.

We are bringing our successful approach to recovering lions in Africa.

Jaguars

WCS protects many of Central and South America's most important jaguar strongholds. These wilderness areas contain more than 5,000 jaguars in about 400,000 square kilometers of largely intact habitat. Jaguar populations are growing steadily at sites where WCS works, averaging a 6.1 percent increase per year. WCS protects jaguars where they are now—and works to return them to their former range.

SPOTLIGHT: BOLIVIA

Jaguars have now fully recovered to their natural carrying capacity in Bolivia's biodiverse Madidi National Park, where WCS has worked with Indigenous Peoples and the government for 25 years. When we began, there was less than 1 jaguar per 100 square kilometers; now there are 7 times as many, because we have strengthened protections, safeguarded habitat, and curbed threats.

7x INCREASE IN JAGUAR POPULATIONS

LOOKING AHEAD →→→

Our goal is a future where big cats thrive, fulfilling their ecological and cultural roles in wild habitats around the world. WCS seeks to turn the tide for Africa's lions—which have declined by 43 percent since the early 1990s—by replicating our successes with tigers in Asia and jaguars in the Americas. We aim to increase Africa's lion populations by 50 percent in sites where we work over the next 25 years by expanding partnerships, scaling up our efforts to stop poaching, supporting local livelihoods, and bringing our science to bear on policy action.

MEET A
WCS EXPERT

Musir Riswan

"As team leader of the Wildlife Response Unit in South Aceh, Indonesia, I mobilize community teams to prevent conflict with Critically Endangered Sumatran tigers."

Q: Your earliest memories of tigers?

MUSIR: I grew up in the forest, on the edge of Gunung Leuser National Park, where my family farms nutmeg and patchouli. As a child I often heard tigers, saw their tracks, sometimes met them directly. But I never feared them, or considered them my enemy. I was taught by the elders that tigers are our nana, our grandmother, a benevolent force in our lives—and as important as humans. Every year we showed our respect with offerings of food. We honored taboos like not playing with dry palm leaves, whose rattle disturbs the tiger.

But all those beliefs were shaken when, in 2010, a tiger took my elder brother's life. It was the first fatal attack in my village in 50 years. The pain it brought my family, our entire community, was so deep. For a time, I hated the tiger; I never wanted to see one again.

Q: What brought you back to tigers?

MUSIR: Hearing of our tragedy, a team from WCS and the Indonesian government's natural resources conservation agency (BKSDA) came to our village to work with our local conservation group and ensure that no family would ever again suffer such a loss. After our first meeting, I came again the next day—and the next, eager to learn everything the team had to teach about how we might use science and technology to prevent conflict. On the third day, they asked if I'd like to volunteer, reporting any signs of tigers and patrolling in the evening with torches and fireworks to chase tigers back into the forest. In 2012, WCS hired me, trusting me to carry on the work.

Q: Your most rewarding moment?

MUSIR: What has been most rewarding is the opportunity I've been given to build my knowledge and skills. WCS scientists have taught me how to track and monitor tigers, and about tiger ecology, habitat, and behavior. Joined with our local wisdom, that scientific knowledge has enabled me to help our community adapt in small ways to stay safe. Knowing that tigers pass through in the afternoon, for instance, we advise farmers not to go outside then, or to go only in twos or threes. We've built tiger-proof enclosures to guard livestock and reduce the temptation for tigers to come into our villages. That protects my own two small children, my neighbors, even nearby villages, where we've been disseminating these lessons on how to live side by side. Because of all I've learned from WCS, I can give everything to my community. And since 2010, no people or livestock or tigers have been killed here.

Rewilding Bison with Indigenous Partners

From the Bronx Zoo to the Great Plains

The bison, or buffalo, is an American conservation success story. In the 1800s, tens of millions roamed North America. Those numbers had plummeted to fewer than 1,100 animals when in the early 20th century, WCS sent Bronx Zoo-bred bison out west to re-establish the species in its native habitat. Together with Indigenous nations, we brought bison back from the edge of extinction.

Today, WCS uses science-based solutions to conserve this species and supports Indigenous Peoples in maintaining viable populations so that bison can once again fulfill their essential ecological and cultural roles.

In 2022, we sent six Bronx Zoo-born genetically pure bison to the Osage Nation's 17,400-hectare ranch in Oklahoma: to augment the genetics of the Osage's existing bison herd, and to help the tribe preserve their cultural heritage and the ecology of their ancestral lands. The return of bison to these lands benefits soil health, carbon storage, and the abundance and diversity of grassland plants, pollinators, amphibians, birds, and mammals, as well as revitalizing cultural and community well-being.

"Bison are not only a mark of our past; they are a symbol of our future."

—Chief Geoffrey Standing Bear of the Osage Nation

LOOKING AHEAD →→→

At the Bronx Zoo and across North America, WCS will advance the science of growing healthy bison populations, and foster diverse partnerships for bison rewilding. In Alaska, WCS is working with Native partners to introduce wild bison on Indigenous lands. That will include rescuing bison that leave the protection of Yellowstone National Park by relocating them to Alaska.

Saving Elephants across Africa and Asia

"Nature's great masterpiece, an elephant…"

So wrote the Elizabethan poet John Donne, whose imagination was captured, like so many others, by this "giant of beasts." Yet despite elephants' enduring fascination, they are under siege. Poaching, habitat loss, and human-wildlife conflict have caused severe declines to all three species: African savanna, African forest, and Asian elephants.

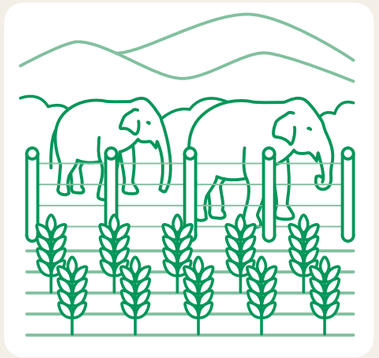
Can we bring elephants back? At WCS, we are proving it is possible. We combine science and fieldwork to safeguard these animals while stepping up efforts globally to end the ivory trade.

As a result, elephant populations have stabilized or increased in areas throughout Africa where WCS has ensured long-term, effective site management and the necessary resources, anti-poaching systems, and training. In Asia, we have reduced human-elephant conflict across our sites.

Protecting Gabon's Elephants with Strong Science

WCS's groundbreaking research, conducted in partnership with the Government of Gabon, has revealed that Gabon is home to 95,000 Critically Endangered forest elephants—much higher than previous estimates.

Forest elephants are shy of humans and cannot be counted from the air because they mainly live under tree cover. WCS employed a novel DNA-based approach to analyze dung samples collected over five years. The findings? Not only does Gabon have more forest elephants than any other country, it also has the most intact habitat, with elephants ranging over more than 250,000 square kilometers, or about 90 percent of the country. These data will inform management strategies for protecting elephants in Gabon and beyond.



THAILAND

A passive fence guides elephants away from agricultural fields, keeping the animals safely inside the park and stopping them from raiding crops while still allowing smaller wildlife to pass through.

Stopping Poaching and Conflict

WCS's long-lasting partnerships with communities and governments have resulted in significant decreases in poaching and conflict between elephants and humans:

MOZAMBIQUE
Niassa National Reserve

Poaching incidents
NEAR-ZERO FOR 3+ YEARS

NIGERIA
Yankari Game Reserve

Poaching incidents
NEAR-ZERO FOR 7+ YEARS

TANZANIA
Ruaha-Katavi Landscape

Elephant populations
STABLE

THAILAND
Kaeng Krachan National Park

Agriculture-related human conflicts
REDUCED BY ABOUT 90%

Ending the Ivory Trade

In 2021, the European Union announced stronger restrictions on its domestic ivory trade, bringing the EU closer to fully closing its previously legal ivory markets. In 2022, all legal ivory trade in Hong Kong and the UK officially closed. All permits for possessing ivory in Hong Kong have now expired, and previous permit holders can only keep their ivory for non-commercial use. For more than six years, WCS policy experts have been pushing to shut down the trade in elephant ivory.

LOOKING AHEAD →→→

WCS will scale up protections for elephants and their habitats across our field sites. Our scientists will monitor key elephant populations and guide their recovery with targeted anti-poaching and conflict reduction strategies. We will advocate for governments to monitor illegal ivory trade and create even stronger restrictions. We are also urging other countries, in particular Japan—one of the largest remaining legal ivory markets—to close domestic markets and enact bans.

Recovering Cambodia's Waterbirds

Cambodia's Tonle Sap Great Lake and Northern Plains sustain some of the largest colonies of waterbirds in Southeast Asia, but they are threatened by nest raiding and habitat loss. Since 2000, WCS has partnered with government rangers and communities to protect breeding colonies and track population trends.

One surprisingly effective approach: many of the rangers on the conservation team of Cambodia's Prek Toal sanctuary are former poachers now employed to guard the birds they used to hunt. They now earn their income protecting the colony, and the populations of storks, ibises, pelicans, herons, bitterns, and egrets have increased accordingly. The monitoring program provides scientifically robust estimates of the bird populations each year.

Over the past two decades, WCS and partners have largely eliminated collecting of eggs and chicks from large waterbird nests.

Some species have rebounded dramatically. After increasing by over 1,000 percent, numbers of Asian openbill—a unique stork that helps rice farmers by feeding on invasive apple snails—and Oriental darter are now too great for the Prek Toal colony. During the past decade, they have dispersed throughout the Greater Mekong, and established additional colonies in Cambodia, Vietnam, and Thailand. Thanks to the hard work of Prek Toal's local community, urban and rural families across the region can now enjoy seeing Asian openbill and Oriental darter.

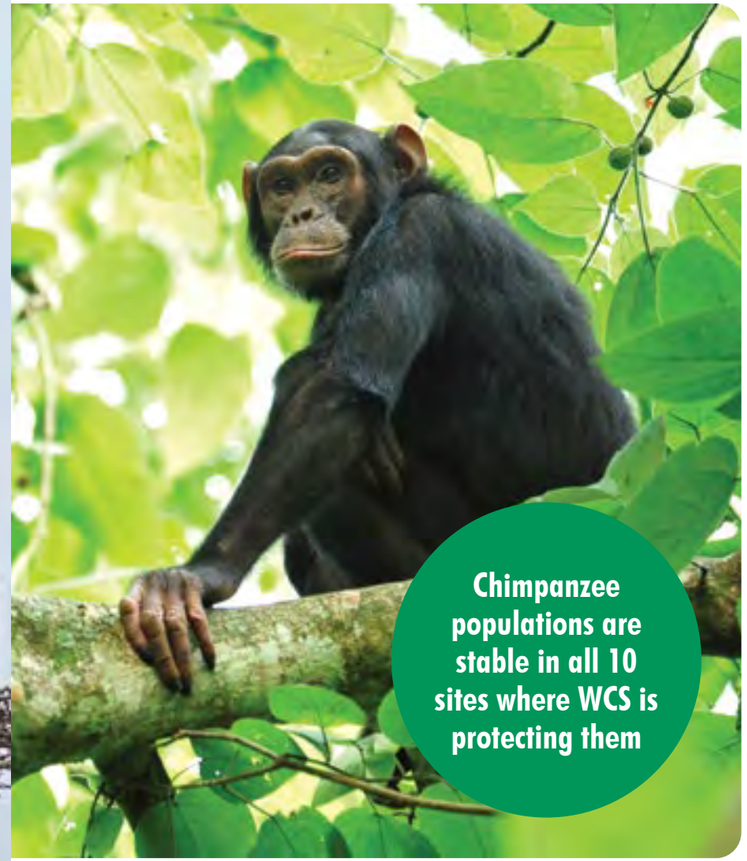
1,000%
INCREASE
in numbers of Asian openbill and Oriental darter

50,000
WATERBIRDS
supported in Prek Toal Ramsar Site

Saving Great Apes, Our Closest Relatives

Apes are known for their intelligence, complex social lives, and close genetic relationship to humans. Yet they are among the most at-risk mammals on the planet: all species of gorillas, bonobos, chimpanzees, and orangutans are Endangered or Critically Endangered.

Though habitat loss, illegal hunting, and infectious disease have created enormous pressure on these animals, WCS leadership in habitat protection, veterinary science, and combating poaching on the ground is beginning to move apes from crisis to recovery at the sites where we work.



Chimpanzee populations are stable in all 10 sites where WCS is protecting them

Our Progress

Protecting Key Ape Habitat

WCS protects life-giving forests—from orangutan habitat in Borneo, to central Africa, home of gorillas and chimps.The Okapi Wildlife Reserve has the highest diversity of primates in Africa, and under WCS management, the rate of deforestation is now 90 percent lower within the reserve than on its periphery.

Combating Poaching

WCS supports rangers with training and technology to target poaching threats. In the critical habitat of Nigeria's Mbe Mountains, for 10+ years there has been no poaching of Cross River gorillas, the most endangered of all great apes.

Advancing Science

In hotspots throughout Africa, WCS researchers have been monitoring Ebola outbreaks for more than 10 years, conducting research on virus ecology, and teaching Ebola prevention awareness in at-risk communities.

Sustaining Communities and Wildlife

WCS partners with local communities on ecotourism ventures and sustainable agriculture—including improving methods of coffee production in forests—which provide alternatives to deforesting ape habitats.

LOOKING AHEAD →→→

Our long-term goal is to stabilize existing ape populations, support their recovery, and expand protection of intact forests that are vital to apes and multiple other species, including humans. We will ramp up our research on Ebola and other viruses that threaten both apes and people, strengthen anti-poaching efforts, and protect key ape strongholds across Africa and Asia.

A Targeted Strategy to Recover Sharks and Rays

Sharks and their close relatives, rays, have been gliding through the world's oceans since long before the dinosaurs walked the earth. From maintaining food webs, to cycling nutrients, to ensuring robust fish stocks, these top predators are critical to healthy marine ecosystems.

But today, they are one of the most threatened groups of animals on the planet, with nearly 40 percent of shark and ray species at risk of extinction—and some 100 million killed annually. The primary threat is overfishing, fueled by demand for shark meat, fins, and other parts; accidental catch of sharks and rays is also a problem. Amplifying this crisis, many shark species grow slowly, have few young, and range widely—making them vulnerable to a number of threats and rapid population declines.

WCS has developed a new, science-based 10-year strategy that will focus on the most important strongholds for sharks and rays. Our strategy includes strengthening regulations; empowering local law enforcement; establishing new marine protected areas; monitoring shark and ray catches in partnership with citizen science networks and communities; and conducting long-term research to guide policy decisions.

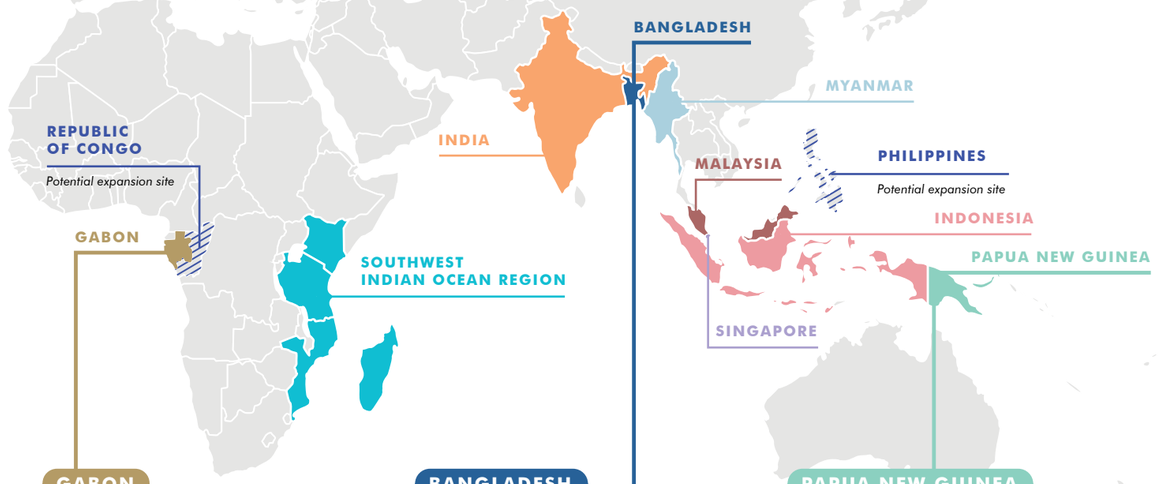
SPOTLIGHT

New Tools to Combat Trafficking

The commercial trade in shark and ray parts is valued at a billion dollars annually. With WCS guidance, one-quarter of the shark fin trade is now regulated by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), enabling better enforcement and oversight. To get customs officials the information they need to seize illegally traded shark products, WCS has created easy-to-follow visual guides to threatened sharks; these will be crucial in helping officers identify products from protected and regulated species, which are often hidden in shipments of unlisted species.

Our Strategy in Action

139 shark and ray species protected in key countries to date



GABON

Enacting Landmark Measures for Whale Sharks and More

WCS worked with the Gabonese government to enact laws that protect all threatened sharks and rays and ban commercial trade in their products. Gabon's waters host a wide range of shark and ray species: from the world's largest fish, the open ocean whale shark, to the giant manta ray, and iconic scalloped hammerhead.

BANGLADESH

Safeguarding a Global Hotspot

WCS supported the Government of Bangladesh in creating enforceable protections for all sawfish; guitarfish; wedgefish; cownose, eagle, and devil rays; thresher, mako, and hammerhead sharks; and another 23 shark and ray species. We also launched an exhibition to educate government officials and the public about the importance of protecting sharks and rays—including devil rays, which are known to leap out of the water.

PAPUA NEW GUINEA

Saving the Sawfish and Rhino Ray

Since 2017, WCS has worked with over 100 communities in Papua New Guinea's New Ireland Province to establish the country's largest network of marine protected areas—essential habitat for Critically Endangered sawfish and rhino rays. We use a community-first approach, with extensive local outreach, engagement, and education—exchanging information with local residents about the biology, threats, and management opportunities for sawfish and rhino rays.

LOOKING AHEAD →→→

Currently, about 25 percent of sharks and rays are protected—but WCS is leading international efforts to win global trade protections for more than 90 percent of shark and ray species. We will strengthen our efforts in key shark and ray hotspots, partnering with governments and local communities to enact and enforce laws, manage fisheries, and control trade.

CONNECTING PEOPLE TO NATURE AT WCS'S ZOOS AND AQUARIUM

"The pandemic has reinforced what an important role our zoos and aquarium serve in providing people with a nature retreat."

—Jim Breheny
Executive Vice President and General Director, Zoos and Aquarium & the Jonathan Little Cohen Director of the Bronx Zoo

WCS's four zoos and aquarium in New York City are the largest urban network of wildlife parks in the world. We welcome millions of visitors each year, who encounter amazing animals and learn about the critical role wildlife plays in the web of life that sustains us all. For example, walking through the New York Aquarium, visitors discover how top predators like sharks are vital to a healthy ocean ecosystem, and how sea otters sustain kelp forests by regulating sea urchin populations.

Connecting people with animals and nature helps create champions for wildlife and wild places. But WCS's zoos and aquarium play other important roles, including maintaining sustainable populations of endangered species. That can aid efforts to reestablish animal populations in nature, as the Bronx Zoo's did with American bison. The Bronx Zoo's wildlife health experts provide skilled care for all animals residing in our parks, as well as rescued and rehabilitated animals, and help advance veterinary health globally. And our parks serve as a much-needed conservation science resource for educating millions of visitors each year, including thousands of school-age children and educators.

The Bronx Zoo housed bison for over 100 years, and has played a key role in preventing their extinction. Today, we are advancing our collaboration with Indigenous Peoples and other partners to conserve bison across North America.

World of Birds at 50: A Legacy of Pioneering Zoo-Field Connections

When it first opened in 1972, the Bronx Zoo's World of Birds immersed visitors in a completely new experience: birds flying freely through lush, naturalistic habitats. Today, walking through the exhibit still awakens a sense of wonder as you spot vibrant hornbills, birds-of-paradise, and many other species amid a symphony of bird calls and rushing waterfalls.

At all five WCS parks, we seek to provide the highest standard of animal care, educate our visitors about animals and nature, and highlight WCS's global conservation work. World of Birds advances those goals, encouraging people to connect with wild places, learn about threats to species in the wild, and become conservation advocates—and it has inspired other zoos around the world.

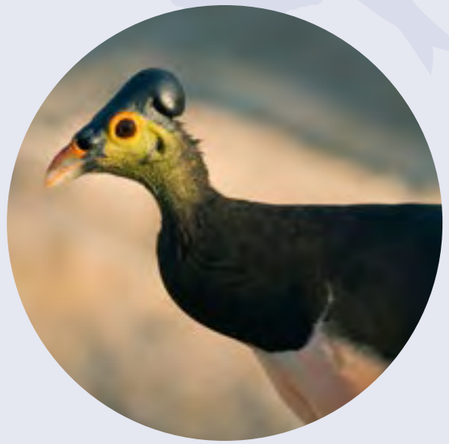
"We want to convince... people that wildlife is worth preserving. We want them to leave saying: 'Aren't birds beautiful? Wouldn't it be a shame if all this disappeared?'"


BRONX ZOO OPENS WORLD OF BIRDS

More Than 500 Are Viewed by Thousands of Visitors

By JANE E. BROODY

—William G. Conway
WCS General Director (1966–1999)
"Bronx Zoo Opens World of Birds"
The New York Times, June 17, 1972



Maleo

STATUS: Critically Endangered
NATIVE TO: Sulawesi, Indonesia

Maleos are quirky: this uniquely adapted bird's nesting behavior is similar to sea turtles'. Instead of using body heat to keep eggs warm like most bird species, maleos lay eggs in a communal nesting area in the sand created with a flurry of kicking; the eggs are incubated by the natural heat of the beach and sun. When chicks hatch, they dig themselves out of the sand and disperse on their own into the forest.

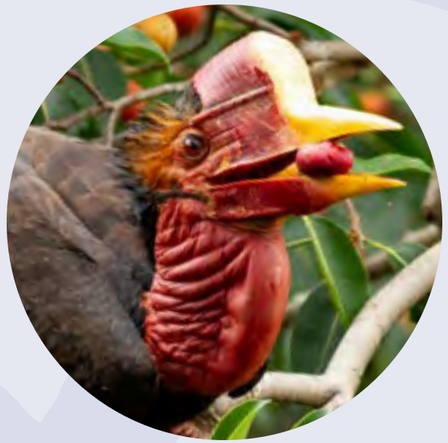
CONSERVATION IMPACT
The Bronx Zoo is the only zoo in the world with a breeding program for maleos. Early on, our zoo experts figured out how to encourage the birds to breed, successfully incubate eggs, and raise chicks. We then shared these learnings with our field colleagues. WCS works with Indonesia's Ministry of Environment and Forestry, local conservationists, and farmers to protect maleo nesting grounds and eggs on the island of Sulawesi. Since 2001, we have helped release over 26,000 chicks into the wild.

Red Bird-of-Paradise

STATUS: Near Threatened
NATIVE TO: Indonesia and Papua New Guinea

There are over three dozen species of birds-of-paradise. With their vibrant feathered ruffs and elongated feathers, known as wires or streamers, they are some of the most visually dramatic birds in the world.

CONSERVATION IMPACT
Last year, the World of Birds had two juvenile red birds-of-paradise on exhibit, one of which was hand-reared by our ornithologists. Populations in North American and European zoos have decreased over the past 20 years, so our husbandry efforts focus on reversing this trend. WCS also assists Indigenous Peoples of Papua New Guinea in protecting the forests that birds-of-paradise rely on for food and safety.



Hornbill

STATUS: Hornbill species range from Least Concern to Critically Endangered
NATIVE TO: Asia and Africa

With their large size, striking colors, distinctive vocalizations, and complex social behavior, hornbills are both beloved and exploited by people. Known as "farmers of the forest" for the role they play in seed dispersal, hornbills are threatened by habitat loss and hunting. In 2022, 5,000 zoo visitors and staff participated as runners and walkers raising money and awareness for hornbills at the Bronx Zoo's annual Run for the Wild.

CONSERVATION IMPACT
The helmeted hornbill is among the largest hornbill species in Asia—and one of the most hunted birds in Indonesia for the illegal trafficking of their bills, known as "red ivory." WCS's Wildlife Crime Unit collaborates closely with the Government of Indonesia to dismantle the criminal networks that trade in hornbills and other wildlife.

Inspiring Young, Diverse Conservation Leaders

Building a diverse movement of conservation advocates is central to our mission, and our work with youth is critical to this goal. WCS education programs reach close to 1 million youth annually—in school, after school, at home, and through jobs and internships at our parks—sparking a love of animals and kindling curiosity about science and nature.

Bringing Fieldwork to the Classroom

The Field Sight curriculum integrates our global conservation work into interactive lessons. Students can imagine themselves tramping through a forest to find a gorilla, or learn how to capture a wolverine in order to fit it with a GPS collar.

Increasing Diversity

With our zoos and aquarium based in one of the most diverse cities in the world, we reach young people from many backgrounds—helping to diversify the conservation field, which makes us stronger and more effective. In 2021, 84 percent of youth who completed our programs said they planned to pursue a career in science.

LOOKING AHEAD →→→

We are ensuring that the intern experience at WCS provides rich opportunities and equal access for all. As a founder of SCI Network NYC—which includes other New York City science venues such as the New York Hall of Science—WCS is sharing lessons learned and connecting young people across institutions while working to increase paid, STEM-based career opportunities for youth throughout the city.

"I have really enjoyed being a part of a community that advocates for wildlife and the environment. It keeps me determined and hopeful for the future... Through this internship I've seen that it's possible to work with animals, educate the general public, and contribute to research."

—Maria Rodriguez, 2022 Sea Cliffs intern at New York Aquarium

"WCS nurtures future New York conservation leaders by harnessing the energy of our science-based cultural institutions. Our leadership will help pave the way for a more inclusive, educated workforce in the years ahead."

—John Calvelli, Executive Vice President of Public Affairs

IN MEMORIAM

William G. Conway

NOVEMBER 20, 1929 – OCTOBER 21, 2021

Field Conservation Leader and Zoo Visionary
WCS General Director and President Emeritus

"Bill Conway was a transformative leader who across every dimension, from our zoos to the field, laid the foundation of who we are today."

—Cristián Samper, President & CEO

Though his own favorites were flamingos and penguins, the animal William Conway was most often likened to was the noble lion. In his nearly half century of leadership at WCS, which he joined in 1956, his voice reigned in the zoo and conservation communities. It was his vision that reshaped how zoos care for animals, and transformed their essential mission to advancing the survival of species in the wild.

Until Conway, zoos were menageries: collections of solitary animals prowling bare enclosures for the entertainment of onlookers. Drawing on his deep field experience studying and protecting birds in Patagonia, Conway remade the New York Zoological Park, as the Bronx Zoo was then called, into something entirely new. Here birds would fly freely through a sunlit canopy, unseparated by any barrier from their human visitors below. Gorillas would live as they did in their Congo home: in big family groups nestled into lush rainforest surroundings.

"Conway lived by a simple principle," says Jim Breheny, his successor in running WCS's zoos and aquarium. "If you're going to keep animals, keep them well. As our field scientists learned more about what these animals needed, he continually challenged and rethought everything we do. No idea was too big for Conway, if it enriched the animals' lives." Zoo-goers, too, would find deeper delights: "Generations growing up without any natural contact with wild creatures [would step] into another sensory and social world," Conway wrote.

Conway's influence was local and global. Seeing his successful innovations in the Bronx, New York City asked him to also run the Central Park, Prospect Park, and Queens zoos—the biggest expansion ever of any NYC cultural institution. Zoos across the US and around the world emulated the new approaches and high standards Conway set for the care and exhibition of animals; the accreditation program he led in developing for the Association of Zoos & Aquariums was adopted nationally in 1973. His colleagues called him a "visionary" years ahead of his time, and the conscience of the profession. One remembered the "fierce righteous lion" challenging the head of another zoo for planning to import a rare rhinoceros all had agreed to leave in the wild.

Most far-reaching were the links Conway forged between the zoos and WCS efforts to conserve species and habitats on five continents and the ocean. He believed captive wild animals must serve a larger purpose: to educate and inspire the public to support conservation, and to directly serve species' survival. The separate entry fee he instituted for the Bronx Zoo's Congo exhibit raised millions of dollars for WCS work in that region. The Species Survival Plan he conceived replaced a long-standing rivalry among zoos with a program of cooperative breeding to maintain genetically viable populations. Recognizing that animals can be fully understood only in the wild, Conway supported groundbreaking field work, building from a small roving band of iconic naturalists like George Schaller and Roger Payne to a WCS presence in more than 50 countries staffed almost wholly with local scientists. "Bill Conway was a transformative leader," says WCS President and CEO Cristián Samper, "who across every dimension, from our zoos to the field, laid the foundation of who we are today."

Building on the Power of WCS's Zoos and Aquarium

WCS's wildlife parks—the Bronx Zoo, Central Park Zoo, Prospect Park Zoo, Queens Zoo, and New York Aquarium—have long inspired millions of annual visitors to help advance our mission of saving wildlife and wild places. But in the past two years, the value of our parks has become even more apparent as people emerge from pandemic restrictions and seek to connect with nature and reconnect with one another. Whether it's coming face-to-face with a tiger, or strolling through the Sea Bird Aviary as Inca terns swoop overhead, visits to our zoos and aquarium foster hope, build memories, and strengthen our relationship with the natural world.

Advancing Care for Geladas

Geladas are a unique grass-grazing primate found solely in the highlands of Ethiopia. At the Bronx Zoo—the only zoo breeding geladas in North America—a two-acre rocky exhibit invites visitors to explore the wildlife and alpine habitat of Ethiopia's Amhara Plateau. Also home to Nubian ibex and rock hyrax, the exhibit opened in 1990 and still educates and delights visitors each day. We plan to add new space to maintain gelada breeding and bachelor groups, both of which are essential to managing a genetically diverse, sustainable population.

"The Bronx Zoo became my refuge during the pandemic. Going there once a week to walk the beautiful grounds and see the animals was so important to my mental and physical health. Thank you."

—Don Galasso, Bronx Zoo Visitor

Breeding At-Risk Species

In 2021, a male Coquerel's sifaka was born at the Bronx Zoo. Like all lemurs, the Critically Endangered Coquerel's sifaka is found only on the island nation of Madagascar. However, sifakas are distinct from other lemurs because they leap through trees using just their back legs. Through the Association of Zoos & Aquariums' Species Survival Plan, WCS collaborates with other accredited zoos and aquariums to ensure that populations of species in zoos are genetically diverse and demographically stable.

Rewilding Zebra Sharks

Veterinarians at the New York Aquarium are lending expertise to a new initiative to rewild zebra sharks. This endangered shark is extremely rare in Raja Ampat, Indonesia, where it once thrived. Aquariums in the US are collecting egg cases from a genetically diverse pool of zebra sharks to be transferred to hatcheries and holding systems in Raja Ampat, and eventually released within a marine protected area. As part of a consortium, WCS is developing a veterinary manual for the care of both sharks and egg cases, consulting on hatchery and holding system design, and training veterinary staff at Raja Ampat. The first batch of fertile egg cases will ship to the hatcheries in the coming year.

LOOKING AHEAD →→→

We are developing new ways of reaching more people to promote observation, discovery, and science learning, both at our parks and through digital channels, enriched by what we learned during the pandemic. We are creating new experiences such as "Aliens Among Us," an exhibit at the Bronx Zoo that will celebrate our planet's most unusual creatures and the important roles they play in ecosystems. Visitors will take in an amazing diversity of species and learn how their unique body forms, senses, and behaviors help them thrive in often extreme habitats.

MEET A
WCS EXPERT

Priscilla Hernandez

"As manager of volunteers and visitor engagement at the Bronx Zoo, I work to welcome our diverse communities and inspire new conservation advocates."

Q: Your path into WCS?

PRISCILLA: I've always been an animal lover. As a kid, I loved listening to my parents' stories about nature in the Dominican Republic, where they'd both grown up on coffee and chocolate farms. I loved when they brought us to the Botanical Garden and Bronx Zoo; I never forgot the first time I got to touch a live animal, a hedgehog whose quills felt just like a comb.

So, when a high school guidance counselor told me about the Zoo's Afterschool Adventures in Wildlife, I jumped to apply. By age 15, I was commuting three bus stops to earn my first paycheck while learning about zoology and the role of modern zoos in conservation. I returned here just before college—where I studied conservation biology, followed by a master's in museum education—to work at the Children's Zoo, and then two summers later as a Summer Teaching Fellow. My first full-time job was in education at the Queens Zoo.

I kept coming back to WCS because I always found committed mentors here. Just last year, my boss encouraged me to apply for the Disney Diversity Advancement Scholarship, which enabled me to attend my first conference of the Association of Zoos & Aquariums. A session there on how to stir visitors' empathy for animals really stayed with me.

Q: Most rewarding moment?

PRISCILLA: We're in the business of inspiring awe. At the Queens Zoo, I loved wheeling out our giant Flemish rabbits, always an education program favorite! I also loved seeing New York City kids who never imagined they'd want to touch a big insect gently stroking the Madagascar hissing cockroach to hear it go sssss.

Best of all was bringing author Eric Carle's books to the Bronx Zoo's Wildlife Theater stage. We were given full creative freedom, and my supervisor and I had the wildest idea. Why not offer one show in Spanglish, which many of our local visitors consider their home language? Watching families at these performances, I saw eyes light up. They felt seen and heard and welcomed in a new way. It felt wonderful to extend that feeling of belonging, and to honor my own Hispanic heritage.

Q: Value of zoos to conservation?

PRISCILLA: To succeed, conservation has to be human centered. Most of our visitors will never have the chance to see these animals in their native habitats; our gorillas and lions serve as avatars for their wild kin. How we communicate and encourage wildlife connections during zoo visits and programs will ultimately determine whether we take the collective actions needed to protect the planet's wildlife and wild places.

A Renaissance at the New York Aquarium

At the edge of the Atlantic Ocean in one of the world's greatest metropolises, WCS's New York Aquarium is a beacon for ocean conservation and education. Building on the 2018 opening of the award-winning exhibit *Ocean Wonders: Sharks!*, the Aquarium is now transformed, with new experiences that invite more people to become ocean advocates and help define a sustainable future for the New York seascape and our oceans.

Introducing the New Bilingual PlayQuarium
Our first completely bilingual exhibit, PlayQuarium invites our youngest visitors to experience the ocean through imaginative play, with graphics in both English and Spanish. Children can discover the vastness of underwater environments by climbing inside a submarine, navigating a coral maze, and exploring a kelp forest. A touch pool teeming with local invertebrates connects visitors to the New York shoreline and its inhabitants.

Spotlighting Our Changing Seas
As climate change increasingly alters environments, it threatens ocean-dwelling animals. The Sea Change exhibit gives visitors an up-close, underwater connection with sea lions, sea otters, penguins, and more, while explaining complex topics including ocean acidification, coral bleaching, and the ocean's role in regulating the planet's climate.

Protecting the Whales of New York
At a kiosk, Aquarium visitors can learn when whales are present in near-real time—just offshore from where they are standing. With partner Woods Hole Oceanographic Institution and others, WCS has deployed acoustic buoys in the area. When the buoys detect Critically Endangered North Atlantic right whales in the area, the US government asks ships to slow down.

PROTECTING NATURE'S STRONGHOLDS

"If we lose the world's forests, we lose the fight against climate change. Rainforests are our earth's greatest utility—our planet's lungs, thermostat, and air-conditioning system."

—Michael Somare
former Prime Minister of Papua New Guinea

At WCS, our mission is to save wildlife and wild places. The two are inextricably connected: wildlife need shelter, food, and water to live, and our scientists find new evidence daily of the myriad ways wildlife enhance the health of their habitats.

We depend on this web of life, so preserving—and expanding—areas of protected wilderness is also crucial for human survival. Science shows that well-designed, well-managed protected areas conserve biodiversity, support local livelihoods, and help curb climate change. Yet today, only 15 percent of the world's land and 7 percent of the ocean are protected. We must do more—before it is too late.

That is why WCS is working to advance the goal of protecting 30 percent of our planet by 2030, doubling the lands and more than tripling the expanse of ocean under protection. Momentum is building: over 100 countries have announced support for this "30x30" target.

WCS is in a strong position to contribute. Since 1908, we have helped create more than 300 protected areas in over 40 countries. Habitat that WCS helped conserve now shelters more than half of life on Earth—and we are setting our sights higher still with a goal of creating at least 50 new protected areas by 2030.

In this section, we highlight: how we protect Nature's Strongholds in alliance with 200 Indigenous communities around the world; our progress restoring forests in Mesoamerica; and our impact in the marine realm, from tropical coral reefs to the Hudson Canyon off the coast of New York.

The Andes-Amazon—including this cloud forest in Colombia—is the most biodiverse region in the world, and holds some of the most important carbon stocks in South America. WCS has been helping to protect the Andes-Amazon for more than 50 years, supporting the creation of more than 30 conservation areas throughout Colombia, Peru, Ecuador, and Bolivia.

The Maya Biosphere Reserve

Restoring Forests, Recovering Species, Revitalizing Communities

The Maya Forest Stronghold is the single largest forest block in Central America, and one of Mesoamerica's last five great intact forests. Spanning more than 30,000 square kilometers across Guatemala, Mexico, and Belize, the *Selva Maya* provides habitat for an array of species such as jaguars, Baird's tapirs, Geoffroy's spider monkeys, and Critically Endangered river turtles. Its intact forests are also a powerful bulwark against climate change. A WCS study revealed that the benefits of saving intact tropical forests are six times higher than previous methods assumed.

But growing demand for natural resources across the region has led to deforestation, putting immense pressure on wildlife. Agriculture has the heaviest footprint: illegal cattle ranching is responsible for more than 90 percent of recent deforestation.

Within this vast yet vulnerable stronghold is Guatemala's Maya Biosphere Reserve. At more than 2 million hectares, it is Central America's largest protected area and a haven for nature. For nearly three decades, WCS has been helping to protect its intact forests, wildlife, and livelihoods in close partnership with the government—and these efforts are getting results.

Our Strategy

Protect forests through law enforcement, patrols, and removal of illegal cattle ranches

Partner with local communities to strengthen local governance and build wildlife-friendly green economies

Restore areas degraded by cattle ranching, in order to reconnect large, contiguous stretches of forest

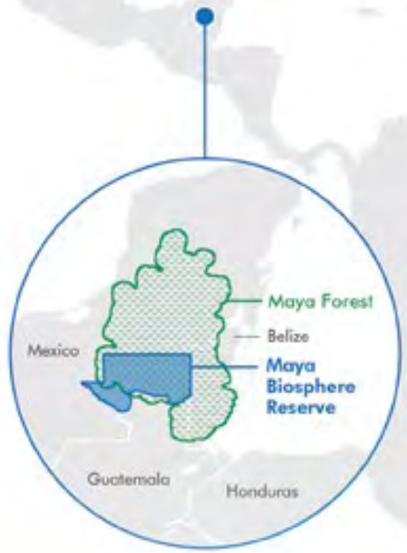
Reduce the scale and impact of wildlife and timber trafficking through patrolling and supporting law enforcement on the Guatemala-Mexico border

Our Success

Wildlife populations stable or increasing

65% decrease in habitat loss

Forest cover on the rise for 2 years in a row



WCS Leading Scarlet Macaw Recovery

The Maya Biosphere Reserve hosts some of the most important nesting and feeding habitat for the scarlet macaw in the Maya Forest, but the birds remain highly threatened by poaching and habitat loss. For two decades, WCS has been leading efforts to save these iconic birds by raising fledglings at our field laboratory and releasing them into the wild.

LOOKING AHEAD →→→

WCS aims to restore and recover forest and wildlife throughout the Maya Forest Stronghold. We will also expand our programs in community-based management areas and strengthen our government partnerships. As part of the Five Forests Alliance, WCS aims to achieve the following across the Mesoamerica region:

- **Protect** 10 million hectares of forest and recover 500,000 hectares of forest that has been illegally claimed or cleared
- **Stamp out** illegal cattle ranching that degrades ecosystems
- **Achieve** zero species extinctions
- **Improve** well-being for Indigenous Peoples and forest-based communities

Indigenous Peoples and Local Communities: Central to Conservation Success

Biological and cultural diversity are interdependent, mutually reinforcing, and often co-evolved—this diversity makes our world stronger. Indigenous Peoples and Local Communities are often the most active defenders of nature and the best partners for conservation.

AMERICAS **Amazon Basin**

Four decades ago, WCS helped local communities establish some of the Brazilian Amazon's first sustainable development reserves. These community reserves in Mamirauá and Amanã protected the rights of traditional hunters and fishers, and became a model for community-led conservation.

Today, WCS is supporting Indigenous groups across the Amazon, including in the Madidi-Tambopata Stronghold spanning Bolivia and Peru. Our local partners are strong stewards of their lands and waters: deforestation rates are three times lower in Bolivia's Tacana Indigenous territory than in surrounding areas. WCS is helping to create sustainable tourism, fisheries, and farming opportunities while strengthening protected and conserved areas.

WCS allies with more than 200 Indigenous communities in 39 countries and with 1,800 local community organizations, supporting local people around the world in securing, exercising, and benefiting from their ancestral rights. Respecting and protecting the rights of Indigenous Peoples and Local Communities is our best pathway to achieving durable conservation, and reflects WCS's commitment to equity and justice.

SOUTHEAST ASIA **Cambodia's Keo Seima**

Keo Seima Wildlife Sanctuary is a haven for Asian elephants, monkeys, gibbons, and hundreds of bird species. It is also home to more than 20,000 Indigenous Peoples who live in and around the park. The majority are Indigenous Bunong people for whom the forest is a deep, indivisible part of their culture.

Due to historical acts of displacement and genocide during the Khmer Rouge regime, the Bunong and other traditional communities in Cambodia have not held formal rights to their resources. Their ancestral territories have been vulnerable to outsiders illegally extracting wildlife, timber, and other products from the forest. As these communities have pursued legitimate claims to their traditional territories, WCS and partners have provided support, helping them to defend these claims and sustain effective stewardship of the forest.

The Bunong people were among the first to obtain a communal land title. Since then, WCS has helped seven local communities obtain legal land titles, and three others to obtain management rights to community protected areas. These Indigenous communities can now defend their land from illegal land grabs. We also manage a program that has enabled communities to build water systems, small-scale infrastructure such as bridges, and other projects the communities have prioritized—while avoiding cutting and degrading forests.

SOUTH PACIFIC **Fiji's Vatu-i-Ra Conservation Park**

Across the globe, WCS learns from and supports Indigenous Peoples as they conserve coastal ecosystems in traditional ways. As these measures have major benefits for both biodiversity and people, WCS works to ensure that communities get the resources they need to eat and provide for their families.

In Fiji, the Indigenous iTaukei people co-manage the Vatu-i-Ra Conservation Park under traditional rules and values. Protecting the whole environment, from mountains to seas, is central to iTaukei culture. They sustain natural resources for food, water, health, and cultural vitality through such Fijian traditions as the *tabu*, in which areas are closed to fishing for periods of time. The Vatu-i-Ra park—which includes spectacular coral reefs—was established under a *tabu*; reduced fishing pressure has preserved healthy fish stocks that bolster local livelihoods. WCS supports park management, and with partners, established a tourist entry fee, which funds conservation and a scholarship for local students.

CENTRAL AFRICA **Okapi Wildlife Reserve, Democratic Republic of Congo**

WCS works to secure the legal land rights of Indigenous Peoples and Local Communities in or around Central African strongholds. With secure land rights, these communities can curb external threats including poorly-governed extraction industries, and improve their livelihoods while reducing dependence on forest resources.

About 27,000 people live in and depend on the Democratic Republic of Congo's Okapi Wildlife Reserve, 25 percent of whom are Indigenous Mbuti and Efe Forest Peoples. The Reserve, about three times as big as the Grand Canyon, is also home to critical populations of forest elephants and okapi, as well as the highest diversity of forest primates in Africa. Here, WCS has recently introduced a new business plan to develop micro-enterprises and financial skills among local communities.

Saving Coral Reefs: Our Ocean's Bright Beacons

Coral reefs captivate us with their striking beauty, and these diverse ecosystems are home to 25 percent of all marine species. Healthy reefs also function as barriers against storm damage, saving us billions of dollars each year, and foster cultural vitality, food security, and livelihoods for more than 1 billion people.

A recent WCS-led study mapped the top threats to coral reefs globally, which include accelerating climate change, destructive fishing, pollution, and industrial development. WCS experts are discovering and protecting climate sanctuaries—unique coral reefs that are more resilient to climate change. We are prioritizing conservation of these strongholds, working with local partners to sustainably manage human pressures.

New Science to Protect Corals

In partnership with Bloomberg Philanthropies, WCS brought together over 50 of the world's leading scientists to create an ambitious agenda to save the world's coral reefs. WCS scientists have developed a more holistic approach to identifying climate sanctuaries, one that advocates for expanding protections to coral reef sites that have not just avoided heat exposure due to climate change, but also those that show resistance to heat shocks or rapid recovery after coral bleaching.

1 BELIZE

Expanding a Coral Reef Stronghold

With the second largest barrier reef in the world, marine protection in Belize is critical to the future of our planet's coral reefs. WCS has recently supported the Belizean government in expanding a key marine reserve at Sapodilla Cayes—a haven for healthy and climate-resilient coral and a hotspot for commercially and culturally important fish species. We have also supported the government in increasing Belize's ocean protection from 3 percent to more than 11 percent, replenishing fish stocks on the barrier reef and in deep sea zones.

2 CUBA

Safeguarding a Climate-Resilient Coral Stronghold

WCS supported the designation of Este del Archipiélago de Los Colorados as a new marine protected area. Covering 281 square miles, the area includes coral reefs as well as mangroves and seagrasses, and hosts groupers, snappers, substantial shark populations, and nesting and feeding grounds for sea turtles.

3 EAST AFRICA

Discovering a Climate Refuge

WCS scientists discovered a rare ocean cool spot along the Kenya-Tanzania coast after analyzing data that we collected with partners over three decades. We found that this cool spot is protecting large coral populations from thermal stress and bleaching, providing a safe haven for vulnerable marine species. We are partnering with coastal communities to preserve this ocean jewel and monitor reef health using new MERMAID data technology, while also developing a model of sustainable coral reef conservation for the world.

4 SOLOMON ISLANDS

Supporting Indigenous-Led Conservation

In Melanesia's Solomon Islands, WCS is helping local communities manage their coastal ecosystems on Rendova Island. Under the direction of the Tetepare Descendants' Association, entire communities have become involved in protecting the locally sacred and Critically Endangered leatherback turtle. As a result, annual nesting turtle numbers doubled from 100 to 250 in the last two decades.

5 FIJI

Protecting a Storm-Resistant Coral Reef Sanctuary

The corals of Fiji are highly resilient; they have been able to avoid significant climate impacts and quickly recovered from a devastating climate-induced storm in 2016. WCS has worked with more than 29 Indigenous and local communities to curb pollution that was damaging reefs downstream, protecting peoples' livelihoods, culture, and health.

MEET A
WCS EXPERT

Emily Darling

"As Director of Coral Reef Conservation, I work across the Western Indian Ocean, Southeast Asia, Melanesia, and the Caribbean to inspire and advance effective, equitable coral reef action."

Q: Your typical day?

EMILY: Our first step in protecting reefs is to understand what's most important to our local partners, so every day is different. A key goal is to mainstream coral reef protection into how governments make decisions about food, health, or the economy. In some countries, the priority will be ensuring women and children have access to "blue foods," because reef fish have greater nutritional value than livestock. In others, it might be "blue carbon"—the carbon captured and stored by seagrasses and mangroves—which through carbon markets can finance community initiatives and protected areas.

Q: Most rewarding moment?

EMILY: A few years ago, I went with our Fiji team to a small island where the community was observing a traditional *tabu*, managing fishing on a particular reef to allow fish and coral to replenish. They were preparing for a harvest to pay for their children's school fees. When we asked to survey the reef before and after, to understand how long and extensive such set-asides need to be, they agreed—if we became members of the village.

We were honored and moved by the invitation, and by the initiation ritual, which ended with us in the water helping drive the fish—1,003 of them; we counted each one—into nets. It turned out the 100-day *tabu* was exactly the right period to enable the fish to recover. I saw how reefs sustain not only food systems but also culture and ceremony, and how those traditions in turn have resulted in thousands of years of guardianship.

Q: Vision for the future?

EMILY: My first dive in northern Mozambique in 2011 left me stunned: here were the vibrant corals I'd only ever seen described on paper. The 1998 marine heatwave that had killed half the corals in the western Indian Ocean had left these untouched. What had saved them was the Mozambique channel, which brings up deep cold waters.

We wondered, are there other places in the world where corals are thriving? Tapping 100 field scientists in 44 countries to build the largest-ever dataset on corals, we found "reefs of hope": 449 reefs in 22 countries remained healthy enough to sustain fisheries, cultural practices, and tourism. Even after the recent devastating heat waves that have degraded coral reefs around the world, these climate refuges for corals will be our priority for protection: for the marine life and livelihoods they support, and as nurseries to replenish depleted reefs.

Protecting the Hudson Canyon

The Hudson Canyon is one of New York City's best kept secrets. Just 100 miles off the coast of New York and New Jersey, this vast underwater canyon rivals the Grand Canyon in scale and teems with extraordinary marine wildlife, including threatened whales and dolphins, sharks, and sea turtles.

WCS, our New York Aquarium, and a coalition of partners WCS brought together have been urging leaders to designate the Hudson Canyon as a National Marine Sanctuary since 2016; in June 2022, the Biden Administration started the designation process. We are advocating for the Sanctuary to be permanently off limits to oil, gas, and mineral exploration and extraction, protecting this biodiversity hotspot into the future.

Our Great National Parks

WCS Conservation Partnership with Netflix

Our Great National Parks is a five-part documentary series by Netflix that examines the wonder, beauty, and mystery of our natural world. WCS is the exclusive conservation partner for this series, which was narrated by President Barack Obama and launched in 2022. The series features extraordinary wilderness areas, including the rainforests of Indonesia's Gunung Leuser National Park and the vast terrain of Chilean Patagonia—two of Nature's Strongholds that WCS safeguards. Reaching the top 10 of all TV shows on Netflix in 26 countries in April 2022, the series encourages people to experience nature and take meaningful steps to protect the planet's wildlife and wild places.

Indonesia's Gunung Leuser National Park and its surrounding forests represent one of the last great intact wilderness areas on Earth. This incredibly biodiverse landscape is home to the Sumatran elephant (right) and many other iconic species, including tigers, rhinos, and orangutans. Drawing on best-in-class science, WCS partners with the Indonesian Ministry of Environment and Forestry to bolster formal habitat protections and support law enforcement operations throughout this 8,305-square-kilometer haven.

ADVANCING NATURE-POSITIVE CLIMATE SOLUTIONS

"I was fascinated by the forest, and to get to it I had to go through the peatbog. The feeling was delicious. I took off my shoes."

—Fernanda Olivares
Indigenous woman of the Selk'nam people,
Tierra del Fuego &
biodiversity conservation advocate

Fires, floods, droughts, extreme heatwaves, sea level rise. Across the globe, people and wildlife are being hit hard by more frequent and more intense natural disasters, many of which are caused or amplified by climate change.

It is well known that we need to drastically reduce our dependence on fossil fuels in order to achieve the goal of limiting global warming to 1.5 degrees Celsius. But there is less awareness that we have natural solutions to the climate crisis available right now. For example, the earth's forests sponge up 30 percent of the carbon dioxide we release into the atmosphere each year—and they will keep doing this work for us if we make sure they are not cut down.

In this section, you can read about how WCS is leading global efforts to advance nature-positive solutions to the climate crisis—from protecting the forests of the Congo Basin, the largest tropical net carbon sink on Earth, to conserving the peatlands of boreal Canada, which store even more carbon than intact forests. And since some of the effects of climate change are unavoidable, WCS is also working to help wildlife, ecosystems, and communities adapt to changing conditions.

High-integrity peatlands, like those within Chile's Karukinka Natural Park in Tierra del Fuego, are powerful cooling systems for our planet, storing more carbon than any other type of ecosystem. Karukinka holds the equivalent of nearly 600 million tons of carbon dioxide across its old growth forests, meadows, and other ecosystems, including peatlands. Its *Sphagnum magellanicum* moss—bright orange and red, and sometimes called pompom—can absorb and store 20 times its weight in water, making these terrestrial carbon sinks vital water reservoirs.

Conserving the Congo Basin for Nature, Climate, and People

As Africa's most biodiverse region and Earth's largest tropical net carbon sink, the Congo Basin holds incredible power in the fight against biodiversity loss and the climate crisis. For example, here you can find the world's largest tropical peatland, the Cuvette Centrale, which contains the equivalent of 112 billion tons of CO_2, nearly three times the total emitted globally each year.

But the Congo Basin's natural capital is at risk. Poaching for ivory and for the commercial bushmeat trade imperils the region's elephants and other species. Expanding agriculture, as well as poorly managed extractive industries including mining, logging, and oil are putting immense pressure on the forests, leading to deforestation and degradation. Overfishing, pollution, and targeted poaching of turtles are harming the region's coastline and ocean ecosystems.

WCS is ensuring that these threats do not engulf this unique and critical stronghold. We have a robust strategy to protect the Congo Basin's peatlands, intact forests, and wildlife over the long term. By creating, expanding, and strengthening the management of protected areas, we are safeguarding critical populations of mountain gorillas, forest elephants, okapis, and many other endangered species found nowhere else on Earth. And through the close partnerships we have built over the last 40 years with governments and communities in the Congo Basin, we are advancing nature-positive solutions to climate change and securing the livelihoods of over 30 million forest-dependent local and Indigenous Peoples.

WCS's Key Accomplishments

- Reducing elephant poaching by more than 50 percent in key protected areas in the forest through increased patrolling, aerial surveillance, and strong wildlife crime conviction rates
- Helping governments across the region to create 39 protected areas conserving 6.3 million hectares of forest and 5.3 million hectares of ocean
- Forging partnerships in logging concessions buffering national parks to protect of the highest integrity forests and wildlife
- Creating innovative governance models for forests and fisheries with Indigenous and local people, and putting into place management plans that honor Indigenous land rights
- Negotiating public-private agreements with governments to strengthen management and financing of more than 2 million hectares of protected areas

ABOVE Community members in the village of Eboyo in Okapi Wildlife Reserve harvest cassava as part of the sustainable wildlife management program in Democratic Republic of Congo.

Indigenous Partnerships

WCS empowers Indigenous Peoples and Local Communities in the Congo Basin to secure land tenure, resource rights, and livelihoods.

Our strong support has helped Indigenous and Local Communities secure access to their life-giving natural resources. In recent years, WCS has helped Indigenous and local people obtain land titles in the eastern Democratic Republic of Congo (DRC) and co-created a new approach to managing protected areas with communities in Kabobo Wildlife Reserve and the Oku community forests of DRC. We have also supported sustainable wildlife management in customary hunting areas in the northern Republic of Congo (ROC) and helped artisanal fishers in organizing their communities into more than 40 locally-run cooperatives. By strengthening community land tenure and management, we are safeguarding Congo's lands and waters against harmful industrial resource extraction, and helping empower the people who have guarded and relied on these ecosystems for millenia.

We take a community rights-based approach to enable men, women, and youth to participate in initiatives that promote sustainable natural resource use. For example, WCS has been working with peri-urban communities to reduce unsustainable demand for resources that Indigenous Peoples and Local Communities need, such as wildlife and fish. We have also supported micro-entrepreneurship as well as savings and loans programs in ROC and DRC to give people livelihood alternatives that reduce their dependence on natural resource extraction.

LOOKING AHEAD →→→

We seek to focus our conservation efforts on the remaining 9 million hectares of highly intact forests in the Congo Basin in partnership with governments as well as Indigenous Peoples and Local Communities. In doing so, we will advance national commitments to protect 30 percent of the planet by 2030 (30x30) within the Congo Basin. WCS will strengthen management effectiveness in 3.5 million hectares of existing protected areas and other conserved areas; add 6 million hectares of protected areas and conserved forests; prioritize a further 31 million hectares of forests for improved protection; and facilitate direct support and finance to local and Indigenous communities engaged in forest governance and management.

The Power of Peat as a Climate Solution

Protecting High-Integrity Peatlands, Immense Carbon Sponges

In peatlands across Canada, a colorful carpet of *Sphagnum* mosses undulates along a landscape of low-lying shrubs, sedges, and open water pools, with patches often covered in trees and lichens. The Hudson Bay Lowland, shown here, is one of the world's largest expanses of high-integrity peatland, and is home to a great variety of life including caribou, polar bears, and wolverines. Its undammed rivers carry nutrients and organic materials to large marshes along the shores of James Bay and Hudson Bay that are highly productive for migratory birds and shorebirds.

Canada has the world's largest peatland carbon stock, with peatlands covering over 1.1 million square kilometers—an area twice the size of France. These below-ground soil carbon stores have been building up for the last 10,000 years, and now one square meter of peatland contains around five times the amount of carbon as the same area of tropical forest.

One square meter of peatland contains 5 times the amount of carbon as the same area of tropical forest.

Global peatlands are critically important for climate regulation, and protecting them is an important natural climate solution. The path to net zero emissions by 2050 assumes that marine and terrestrial carbon sinks, including peatlands, will continue to remove about half the CO_2 emitted annually from fossil fuel combustion and land-use change. WCS is helping to ensure these peatlands continue to serve their essential role for climate, biodiversity, and people.

MEET A
WCS EXPERT

Dan Zarin

"As WCS's first Executive Director of Forests and Climate Change, my job is to help protect and grow the role of the world's forests in slowing climate change."

Q: Why is WCS scaling up its work on forests and climate change?

DAN: Climate change fundamentally threatens our core mission to save wildlife and wild places; we've all seen the harm done by worsening droughts and wildfires. But WCS also brings distinctive strengths to solving this crisis. Forests remain our greatest climate asset; globally, they remove a third of the CO_2 emitted each year from burning fossil fuels. And most of that removal is done by the kind of high-integrity forests and peatlands WCS field programs help protect.

With our on-the-ground presence in more than 50 countries—including thousands of staff working closely with governments and communities—WCS can be a significant piece of the global climate solution. The key is to bring financial investment into conservation in a whole new way. Intact forests keep the planet as much as a degree cooler than it would be without their help. If we value that natural climate control—which is worth tens of trillions of dollars to the global economy—we can create sustainable protections for these vital ecosystems, the wildlife they shelter, and the climate itself.

Q: How did you come to this work?

DAN: I've focused on the intersection between forests and climate for more than 30 years, as a professor and then working in philanthropy. I came to WCS because I think, right now, it's where I can have the greatest impact—building on the unrivaled work of our field conservation programs and connecting those assets to global policy and finance solutions. It's clear that we are in no way separate from nature. Whether in the most remote regions or in the heart of a city, we are all linked to one another and to our animal relatives. We are mutually dependent. Africa's forest elephants, for instance, are like gardeners: they weed out smaller brush, which allows big trees to get bigger, locking away carbon. A single elephant contributes to many additional tons of CO_2 storage, helping regulate our climate. As an ecosystem ecologist, I think of species as parts of a larger system, and that's true of humans as well.

Q: Your most hopeful moment?

DAN: Indigenous Peoples and Local Communities have always stood on the frontlines protecting forests. What gives me hope is seeing their growing influence and impact on the global political stage. We saw it at the climate conference in Glasgow in 2021: far from being marginalized, or cast as victims of forces beyond their control, their voices carried real power. WCS has spent years building partnerships with Indigenous and traditional communities across the Amazon, Southeast Asia, Mesoamerica, and the Congo Basin. Those strong ties enable us to support and empower these leaders and work with them at all levels—from local to global.

10 Years of Impact: Climate Adaptation Fund

A Partnership with the Doris Duke Charitable Foundation

Climate change has become one of the most severe and widespread threats to ecosystems worldwide. We are already seeing impacts, ranging from floods and fires to more intense storms and sea-level rise.

While it is vital that we find ways to curb the climate crisis, helping wildlife, ecosystems, and communities adapt to changing conditions is also critical.

A decade ago, WCS and the Doris Duke Charitable Foundation created the WCS Climate Adaptation Fund, which provides grants to conservation non-profits across the United States to catalyze innovative, science-driven climate adaptation projects—many of which serve as models that can be replicated around the globe.

IMPACT: 123 climate adaptation projects launched across 48 states, commonwealths, territories, and tribal lands.

Here are just a few ways in which the Climate Adaptation Fund has helped communities and wildlife adapt to changing conditions over the last decade.

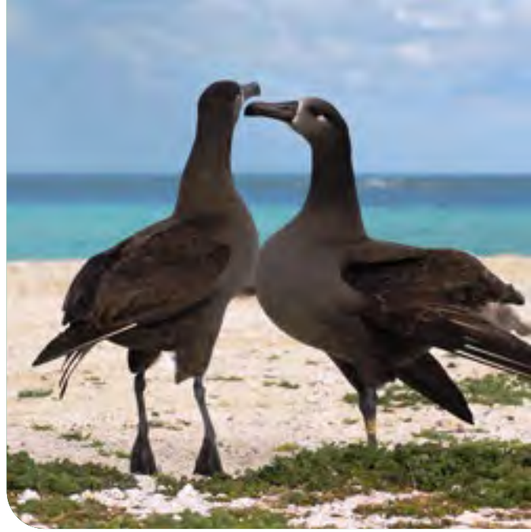
Restoring Ocelot Habitat, Expanding Carbon Sinks

The native thornscrub forest of the Lower Rio Grande Valley in Texas provides habitat for more than 500 species of songbirds, 300 species of butterflies, and 11 threatened and endangered species, including ocelot and jaguarundi. But the forested area has shrunk to 10 percent of its original size, and climate models predict the area will be further affected by drought due to increased temperatures.

An American Forests climate adaptation project restored 270 acres of degraded ranch lands to functioning thornscrub forest, promoting drought resistance and creating migration corridors for wildlife. The project will help store 100,000 tons of carbon over 50 years, helping to mitigate climate change.

Transforming Vacant Lots into Pollination Oases

In the city of Philadelphia, the National Wildlife Foundation converted 50 vacant lots to climate-resilient pollinator meadows. These newly greened areas provide important habitat for birds, butterflies, and other pollinators through changing climate conditions—and give a major boost to stormwater retention. The meadows will also help reduce the dangerous "urban heat island" effect: increased temperatures in cities with dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat. Providing more green space in cities can reduce energy costs for cooling, air pollution, and heat-related illness.



Protecting Hawaii's Seabirds

Over 97 percent of the global populations of black-footed albatrosses, bonin petrels, and Tristam's storm petrels nest on low-lying atolls in the Northwestern Hawaiian Islands. Pacific Rim Conservation is translocating these birds to habitats at higher elevations, as their current home is threatened by climate change-driven sea level rise.

Coexisting with Wildlife in a Rapidly Changing Environment

In the Arctic—home of walrus, beluga and bowhead whales, and polar bears—accessible summer sea ice for wildlife is dramatically declining. As a result, female walruses and their calves are now hauling out (temporarily leaving the water) in unprecedented numbers along the Alaskan and Russian coasts. When on land, the animals are vulnerable to being startled by people or engines, leading to stampedes in the water that can result in fatalities.

The Alaska Conservation Foundation developed a GPS-based virtual perimeter to create temporary, virtual fences to shield species and communities. Despite the vast area of the Arctic region, we can alert ships, planes, and visitors in near real time to avoid sensitive wildlife gatherings, allowing for quicker (and more effective) response times.

ONE WORLD, ONE HEALTH

"The COVID-19 pandemic has made it clear that the health of our planet hinges on the intertwined relationships among humans, animals, and the environment—a concept that WCS put forth in 2004 with 'One World, One Health.'"

—Chris Walzer
Executive Director, Health Program

COVID-19 and most new infectious diseases in humans have a zoonotic origin—meaning they originate from animals, particularly wildlife—and the risk of viruses jumping between animals and people has increased dramatically in our lifetime. The rapid growth of travel and trade—including the legal and illegal wildlife trade—is bringing people, wildlife, and livestock into closer and more frequent contact, sometimes with devastating effects.

Human encroachment into wild areas, habitat destruction, and climate change are further amplifying this trend. Human activities are also exposing wildlife to new pathogens that can cause unprecedented devastation, including avian influenza in wild birds and a fungal disease that has killed millions of little brown bats.

Core to WCS's strategy is preserving the foundational role of intact and functioning ecosystems, benefiting the health of all life on Earth; and creating early warning systems to help experts detect, analyze, and share information about emerging health threats and coordinate effective responses. Our efforts to stop the trade of live wild birds and mammals for human consumption are also a key part of the solution.

In this section, we share how we are advancing One Health solutions around the world—and at our five New York City wildlife parks, where the WCS Zoological Health team provides the highest standard of care to over 21,000 animals.

Bats have gone from misunderstood to villainized, especially since the closest ancestor of the SARS-COV-2 virus that caused the COVID-19 pandemic was identified in horseshoe bats. But bats themselves are not to blame. The risk of spillover has skyrocketed as humans have cleared and converted forests and other natural disease barriers that separate humans and wildlife. And we need bats: they pollinate plants and crops, disperse seeds, and save farmers billions of dollars in pest control each year. This leaf-nosed bat is pollinating a banana blossom.

To Stop Disease Spillover, We Need Healthy, Intact Ecosystems

Challenge

At least three-quarters of emerging infectious diseases in humans have an animal origin, and the threats below intensify risks to animals and people.

Destruction of natural habitat breaks down natural disease barriers

Commercial and illegal wildlife trade creates "super-interfaces" for disease

Increased global connectivity spreads diseases more rapidly

Climate change hastens the spread of vector-borne diseases

The interfaces where diseases can be transmitted are increasing and barriers of protection are decreasing—and each of these challenges are interrelated and amplified by one another. We must act now.

SOLUTION

One World, One Health

Many species that rely on intact ecosystems carry diseases that can pass to humans and domestic animals when we disrupt those ecosystems. WCS is monitoring and protecting these species and safeguarding the intact ecosystems that provide natural disease barriers and preserve the integrity of our planet. Below are some of our key strategies to protect human, animal, and environmental health.

Protecting intact wilderness around the world

Detecting and stemming the spread of infectious disease

Stopping commercial trade of live wildlife for human consumption

Preventing Disease Outbreaks

To help prevent the next pandemic, we must reduce disease spillover from animals to people—or vice versa—before it occurs. We must identify pathogens in their natural environment and understand the behaviors that break down the natural barriers between those pathogens and people.

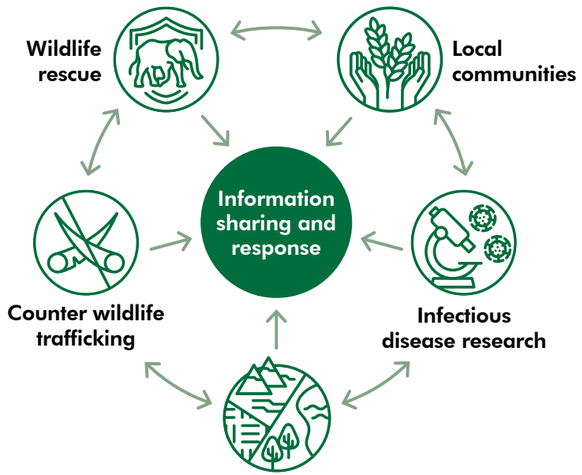
WildHealthNet: A First-Ever Global Early Warning System to Prevent Disease Spillover

WCS aims to swiftly connect people who encounter wildlife—such as rangers, hunters, and local community members—with scientists, decision makers, and others who can analyze disease threats and act immediately to limit their spread.

Our pilot of the WildHealthNet early warning system in three Southeast Asian countries is already having an impact. We are now expanding to other countries, with the goal of scaling up globally.

This is how WildHealthNet works: if rangers patrolling a protected area encounter for instance an unusual bird die-off, they share that information through WildHealthNet. That triggers an investigation to determine potential disease risk to people—as with Avian flu—or to domestic animals. Next, appropriate wildlife, public, or livestock mitigation interventions are introduced. This rapid response helps to prevent emerging threats from becoming a widespread danger.

STRONG COMMUNICATION NETWORKS HELP PREVENT DISEASE SPILLOVER



WildHealthNet connects rangers, government partners, community members, and others who can share information in real time to detect diseases and prevent both outbreaks and pandemics.

Preventing Spread of African Swine Fever

Southeast Asia is home to unique and highly endangered wild pig species which serve essential roles within their ecosystems, both as prey for other animals, including the Sumatran tiger, and as "gardeners," tilling the soil and encouraging plant growth.

In 2019, these wild pigs suddenly faced the risk of contracting the highly contagious and deadly African Swine Fever, which had spread from Africa to domestic pigs and wild boar living in or around protected areas. Through WildHealthNet, WCS identified the first cases of the disease in wildlife and immediately ramped up communication with local communities on how to prevent the spread—protecting both local livestock and wildlife.

ABOVE Young Eurasian wild boar, Malaysia

ABOVE A Sunda pangolin confiscated from illegal trade at a rescue center in Vietnam.

Stemming an Avian Influenza Outbreak

Avian influenza is a highly contagious virus that can spread easily from poultry to wild birds, threatening many endangered species; the H5N1 strain has already resulted in more than 380,000 wild bird deaths since October 2021. Through WildHealthNet, WCS discovered a significant transnational outbreak of the disease in important wetlands in Cambodia and Vietnam. We immediately alerted government and local communities—jumpstarting communication campaigns to limit expansion of the outbreak.

Ending Commercial Trade in Wildlife for Human Consumption

Wildlife trafficking is a major threat to the survival of many endangered species—and the sale of wild mammals and birds for human consumption poses significant risks to our health too. A new study led by WCS scientists found that pangolins confiscated from the illegal wildlife trade hosted SARS-CoV-2-related coronaviruses with the potential to spill over to humans.

WCS has anti-wildlife-trafficking teams on the ground in nearly 30 countries, the largest presence of any conservation organization; this vast network allows us to forge strong, effective alliances among neighboring countries. For example, our in-country and regional experts recently unified the efforts of several governments to apprehend wildlife traffickers who crossed borders to elude local law enforcement. With our strategy centered on preventing trafficking at the source, we run awareness campaigns in partnership with local and Indigenous communities.

To enact meaningful pandemic prevention policy, we are lending our unique wildlife health expertise to the World Health Organization effort to craft an international agreement, ensuring that preventing pathogen spillover from wildlife is at the forefront of the solution.

LOOKING AHEAD →→→

WCS seeks to end the dangerous practice of wildlife trafficking, saving many endangered species and improving health outcomes; and to expand WildHealthNet to all of our global field sites—developing a pathogen monitoring system and One Health intelligence to prevent the emergence of new diseases and inform international policy.

Advancing Zoological Health

More than 21,000 animals, representing some 1,000 species, reside at WCS's five wildlife parks. To keep every animal healthy, our team of veterinarians and health specialists provides top-tier care for all—from tiny fish to 250-pound gorillas, and even rescued animals.

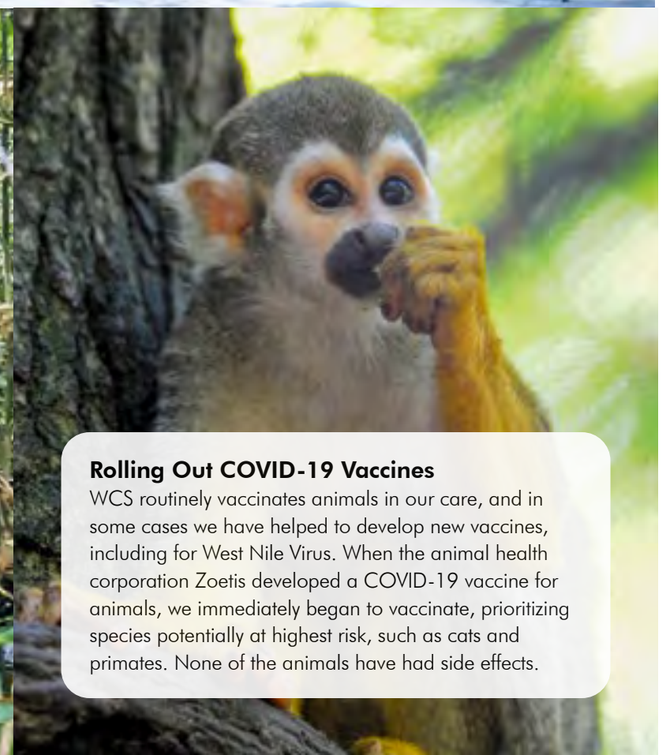
The WCS Bronx Zoo-based Zoological Health team also contributes to conservation in our parks and around the world, developing innovative tools to detect emergent diseases and identify rare and trafficked animals.

Using Cutting-Edge DNA Technology to Save Big Cats

In response to the heavy toll that illegal trade is taking on global big cat populations, WCS's Molecular Lab developed a DNA test to aid law enforcement. Tiger parts, especially bone, are highly trafficked as are body parts of other big cat species. This DNA test gives customs officers and law enforcement the means to identify which species a sample comes from at the site of confiscation—enabling investigators to quickly trace and curb this deadly trade.

Developing a Diagnostic Tool to Advance Protection for the Rare Saola

WCS has developed a DNA test to detect one of the rarest animals on Earth, the saola, found only in the Annamite Mountains of Laos and Vietnam. This tool allows researchers to test feces and potentially other samples collected in the field to see if the scat, soil, or water contain saola DNA. Scientists can then define locations where saola are present and focus conservation actions in these priority areas.



Rolling Out COVID-19 Vaccines

WCS routinely vaccinates animals in our care, and in some cases we have helped to develop new vaccines, including for West Nile Virus. When the animal health corporation Zoetis developed a COVID-19 vaccine for animals, we immediately began to vaccinate, prioritizing species potentially at highest risk, such as cats and primates. None of the animals have had side effects.

MEET A
WCS EXPERT

Charles Emogor

"As a WCS Conservation Fellow, I study the relationship between communities and pangolins to shape protections for the world's most trafficked wild mammal."

Q: How did you land at WCS?

CHARLES: I'd just graduated from college in 2016 and was volunteering at WCS Nigeria when I learned I'd been awarded the great honor of an internship with the Conservation Leadership Program. That gave me a year of training by WCS in skills I've relied on ever since. I learned about camera trapping, digital wildlife monitoring and reporting technologies, even how to write grant applications and manage a team of rangers protecting Cross River gorillas. Those critically endangered animals are so rare that, in two years, I saw nests and dung but never a single gorilla. But that internship launched everything. And when I turned to pangolins, a Conservation Leadership Program grant and the WCS Harry Schwarz Conservation Scholarship were the breaks I needed to make my field work possible.

Q: What drew you to pangolins?

CHARLES: I grew up on the edge of Cross River National Park, seeing many animals in the forest where we played. But the only pangolins I ever saw were dead, piled up in wild meat markets. For two decades, I longed to see one alive. That dream came true in 2020, when thanks to the Harry Schwarz scholarship, I was able to go deep enough into the park, and stay there long enough to finally see one in the wild. I was elated to meet Abacus, as I named him. Though he weighed just four pounds, I was struck by his majesty. He had a slow, stately walk, as if protecting his adornments, and great finesse gathering ants with his long tongue. But I also felt deep grief at his vulnerability; seeing me he tried to run but soon gave up and rolled into a ball. Had I been a hunter, he would never have escaped my grasp. For my study, I fitted him and other pangolins with transmitters to track their range and behaviors. I also began interviews to understand how local people see pangolins; their role in family diets and incomes; and what drives commercial hunters.

Q: Your vision for the future?

CHARLES: The work I've been doing to reach young people—in primary schools, through social media, even running 55 kilometers dressed as a pangolin—gives me so much hope and joy. I see students becoming pangolin champions: one kid went home and memorized every country where pangolins can be found.

I also believe that with the right incentives, communities will become pangolin protectors. One hunter told me his dream had been military service. He was doing something he didn't want to do because he saw it as his only way to survive. We need better law enforcement—more anti-poaching patrols and prosecutions—but we also need to create alternate ways for local people to benefit from the forest.

Advancing Science to Save Wildlife and Wild Places

Spotlight | Science and Monitoring

Aili Kang, PhD
Director, China Strategic Engagement

Nyawira Muthiga, PhD
Director and Conservation Scientist, Marine Program, WCS Kenya

Jesus Martinez Mollinedo, MSc
Titi Monkey Field Researcher, Conservation Biologist, and Co-founder of the Bolivian Primatology Network

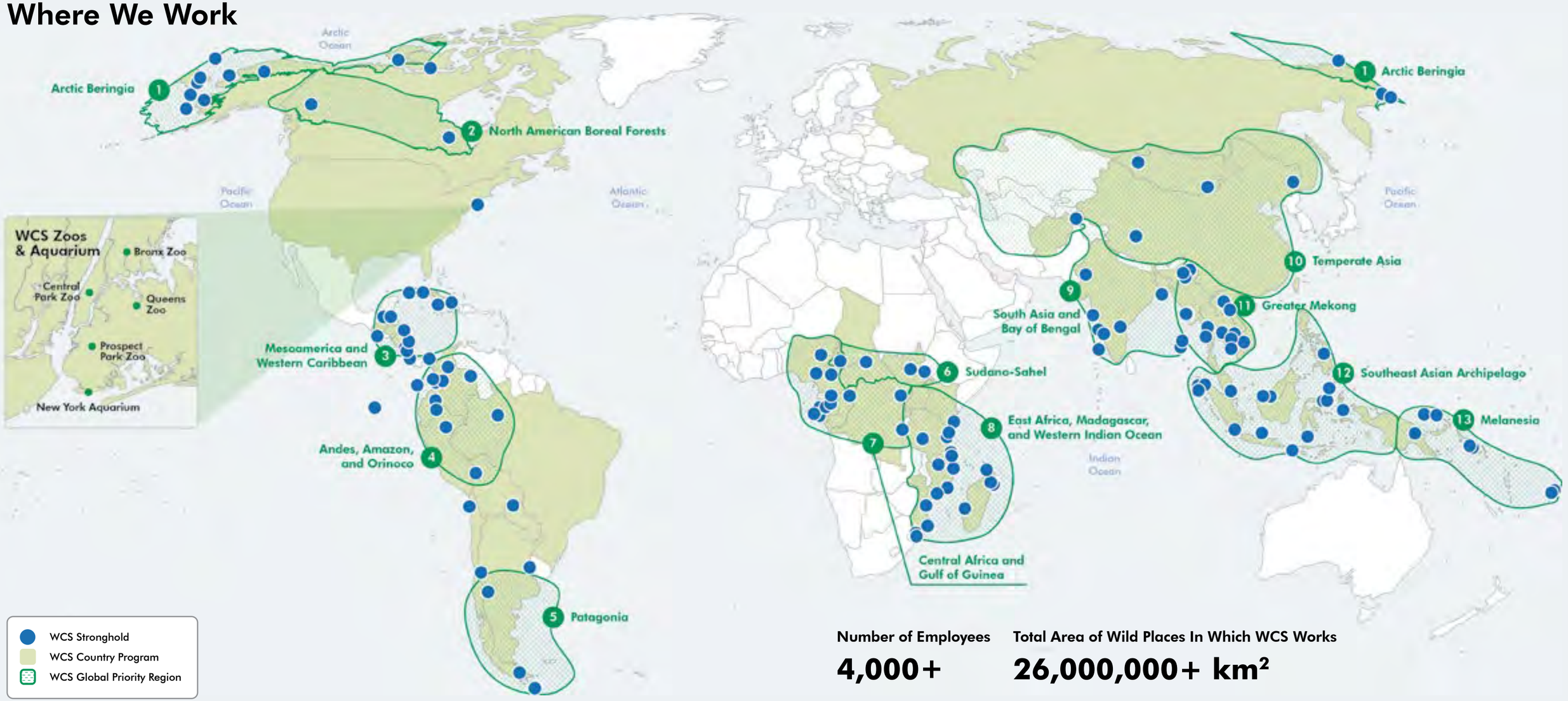
Emma Stokes, PhD
Vice President, Field Conservation

Cristián Samper, PhD
President & CEO

WCS has earned a reputation for producing high-quality conservation science. We use science to achieve clear outcomes, from winning stronger protections for species, to evaluating the footprint of human activities, to measuring the integrity of forests and coral reefs around the world. Our research allows us to solve problems, measure the impact of our efforts, adjust our approach, and guide critical policy decisions.

As we address the biodiversity and climate crises as a global community, we need to act swiftly and in concert. The way we conduct science matters. WCS publishes findings using the peer review process, which ensures that independent scientists critique our work; in this way, we strengthen our analysis and ensure scientific integrity while advancing learning among our colleagues. We also hold ourselves accountable to sharing our insights broadly, and whenever possible, provide conservation partners, governments, and researchers around the world with immediate and unrestricted access to our work. In 2021, WCS authored an all-time record 440+ articles in peer-reviewed journals. Sixty percent of these publications are freely available online; in the years to come, our goal is to make all of our science accessible.

Where We Work



Number of Employees
4,000+

Total Area of Wild Places In Which WCS Works
26,000,000+ km²

1 Arctic Beringia
Arctic tundra and productive seas of Alaska, western Canada, and northeastern Russia

2 North American Boreal Forests
Boreal forests, mountains, and peatlands in Canada and Alaska

3 Mesoamerica and Western Caribbean
Forests, coasts, and coral reefs in Belize, Cuba, Guatemala, Nicaragua, Honduras, Mexico, Costa Rica, and Panama

4 Andes, Amazon, and Orinoco
Forests, grasslands, and wetlands of Bolivia, Brazil, Colombia, Ecuador, Peru, and Venezuela

5 Patagonia
Landscapes and seascapes of Chile, Argentina, Paraguay, and Uruguay

6 Sudano-Sahel
Savannas, woodlands, forests, and wetlands of Chad, Central African Republic, and South Sudan

7 Central Africa and Gulf of Guinea
Forests, savannas, and coasts, including Equatorial Guinea, Gabon, Republic of Congo, Democratic Republic of Congo, Nigeria, and Cameroon

8 East Africa, Madagascar, and Western Indian Ocean
Savannas, forests, and coastal habitats of Uganda, Kenya, Rwanda, Tanzania, Mozambique, and Madagascar

9 South Asia and Bay of Bengal
Forests, mountains, and coasts of India and Bangladesh

10 Temperate Asia
Forests, rangelands, and mountains of Afghanistan, Mongolia, Russia, and China

11 Greater Mekong
Forests, grasslands, wetlands, and coasts of Cambodia, Laos, Myanmar, Thailand, and Vietnam

12 Southeast Asian Archipelago
Tropical forests, marine and coastal ecosystems in Indonesia, Malaysia, and the Philippines

13 Melanesia
Highlands and islands of Fiji, Papua New Guinea, and Solomon Islands

Advancing Conservation with Public-Private Investment

We thank our generous public and private funders, whose strong support and partnership enable us to advance WCS's vital mission to save wildlife and wild places.

Private philanthropy is essential to our success, and complements public funding. Each dollar we receive from private donors allows us to leverage and put to work at least five dollars of additional funding toward the programs and operations described in this report.

Our longstanding public-private partnership with New York City and New York State—which spans more than 125 years—is another important anchor of our finances. This partnership enables WCS to advance science learning across the city, and is a driving force behind our capital upgrades, animal care, and operations.

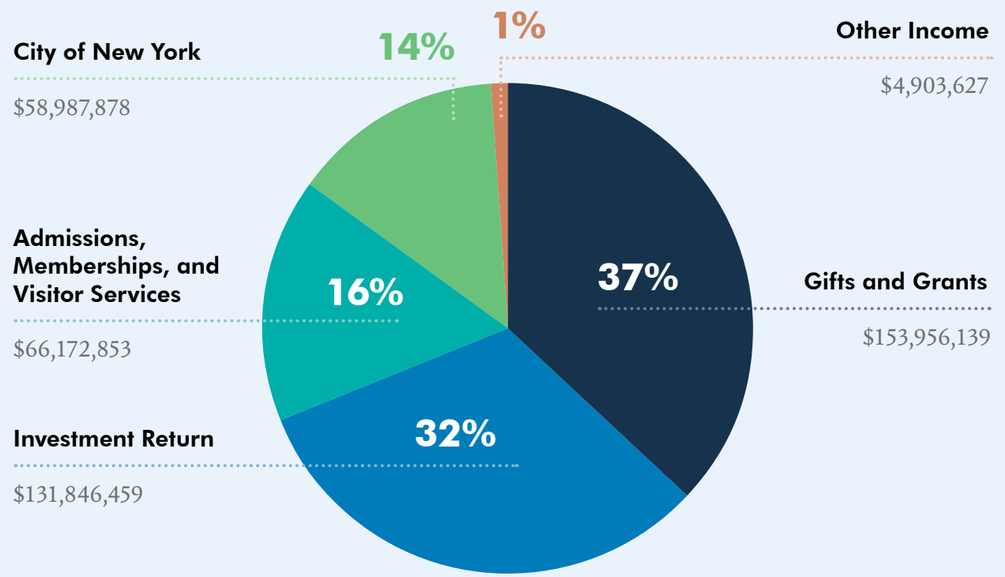
WCS's ability to achieve and sustain conservation results also makes us a trusted partner of governments around the world. In FY 2021 (July 1, 2020–June 30, 2021), our global conservation programs received substantial support from more than 72 government funders, including agencies of the US, German, French, UK, Norwegian, and Australian governments, as well as from 14 multilateral agencies including the European Union, Global Environment Facility, Blue Action Fund, United Nations Development Program, World Bank, Food and Agriculture Organization, Asian Development Bank, and Green Climate Fund.

We have welcomed an increasing number of visitors to our New York City parks in the past year as people seek safe, meaningful opportunities to connect with nature and with one another. Stronger attendance has played a critical role as we emerge from pandemic-related fiscal challenges and chart a path toward recovery. WCS was also fortunate to experience strong investment returns in FY22, like most other endowments over this time period, which bolstered our balance sheet.

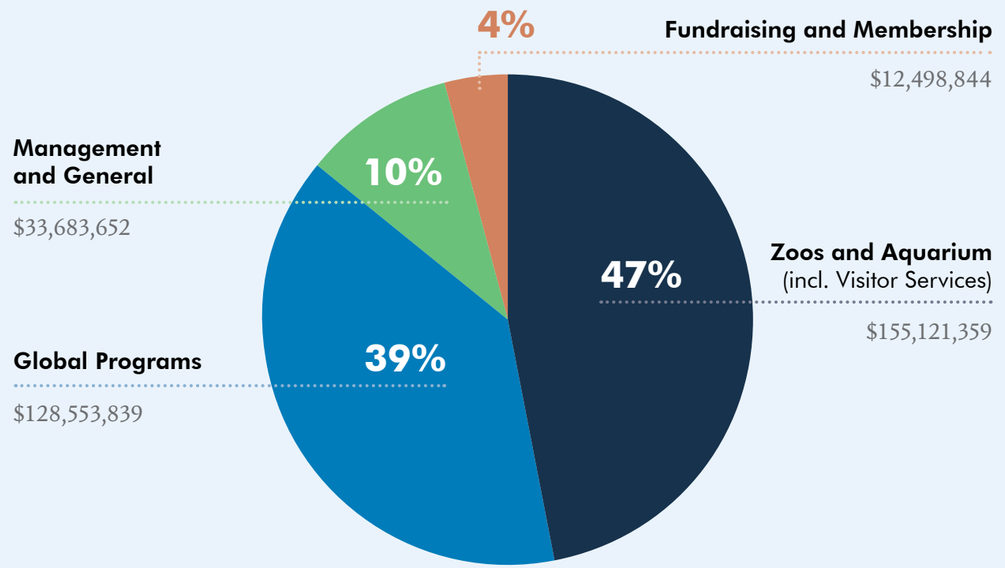
We hope you feel proud of the work that your support makes possible. We could not do it without you. Thank you.

Financial Report

2021 TOTAL REVENUE ($415.9 MILLION)



2021 TOTAL EXPENSES ($329.9 MILLION)



STATEMENT OF ACTIVITIES (JUNE 30, 2021 AND 2020, IN THOUSANDS)

2021 TOTAL REVENUE ($415.9 MILLION)	2021	2020
Bequests	$ 2,549	$ 6,585
Gifts and Grants	120,473	106,332
City of New York	58,988	70,821
Federal Agencies	30,934	30,997
Gate and Exhibit Admissions	27,098	25,950
Visitor Services	22,177	19,192
Memberships	16,898	9,720
Investment Return	131,846	9,796
Other Income	4,904	5,786
Total Revenues	**$ 415,867**	**$ 285,180**
2021 TOTAL EXPENSES ($329.9 MILLION)		
Program Services		
Zoos and Aquarium	$ 155,121	$ 153,355
Global Programs	128,554	123,013
Management & General	33,684	30,987
Fundraising and Membership	12,499	10,738
Total General Operating Expenses	**$ 329,858**	**$ 318,093**

Additional updates on WCS's financial information can be found at **wcs.org/financials**.

CONSOLIDATED BALANCE SHEETS (JUNE 30, 2021 AND 2020, IN THOUSANDS)

ASSETS	2021	2020
Cash and cash equivalents	$ 75,324	$ 52,700
Miscellaneous receivable	1,896	3,596
Receivable from the City of New York	100,743	88,310
Receivable from the State of New York	4,759	2,233
Receivable from Federal sources	8,350	10,380
Contributions receivable	7,573	9,137
Non-US governmental and bilateral grants and contracts receivables	11,205	11,784
Private organization grants and contracts receivables	20,080	20,016
Inventories	1,961	2,898
Prepaid expenses	5,214	4,466
Advances to sub awardees	5,781	2,968
Right to use lease assets	3,213	-
Investments	560,873	451,590
Amounts held in trust by others	2,112	1,780
Funds held by Bond Trustee	14,207	283
Property and equipment	449,314	453,305
Total Assets	**$ 1,272,605**	**$ 1,115,446**
LIABILITIES AND NET ASSETS		
Accounts payable and accrued expenses	$ 52,069	$ 45,884
Grants and contracts liabilities	56,720	35,601
Escrow liability	21,486	92
Right of use lease liability	2,932	-
Annuity liability	3,124	3,133
Line of credit	30,000	30,000
Loans payable	-	6,650
Bonds payable	164,885	133,338
Post-retirement benefit obligation	54,342	56,968
Total Liabilities	**385,558**	**311,666**
Net Assets (Without donor restriction)		
General Operating	(4,569)	(7,158)
Board Designated	130,881	71,724
Net investment in property and equipment	297,536	311,952
Total without donor restrictions	**423,848**	**376,518**
Net Assets (With donor restriction)		
Purpose restricted	190,213	154,565
Endowment Corpus	272,986	272,697
Total with donor restrictions	**463,199**	**427,262**
Total net assets	**887,047**	**803,780**
Total Liabilities and Net Assets	**$ 1,272,605**	**$ 1,115,446**

WCS TRUSTEES AND LEADERSHIP

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For more information, contact Stephen Ham at 718 741 1619 or SHam@wcs.org.

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WCS's Conservation Patrons are saving wildlife and wild places by giving at the $1,500 to $24,999 level annually. Patrons receive special conservation impact updates, invitations to insider events, recognition in the WCS Impact Report, and the option to receive zoo benefits with access to our five NYC wildlife parks.

For more information, visit wcs.org/Patrons or contact us at 718 220 5085 or Patrons@wcs.org.

CORPORATE PARTNERSHIP & ENGAGEMENT

WCS Corporate Partners provide vital operating support of our conservation efforts through philanthropic giving, corporate membership, sponsorship, and cause marketing. Partnerships with WCS help corporations gain brand exposure, consumer loyalty, and community engagement, while aligning with an important cause that resonates with their consumers, employees, and investors.

For more information, contact Carolyn Gray at 718 741 1650 or CGray@wcs.org.

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You can build a conservation legacy by designating WCS as a beneficiary in your will or trust. You can also name WCS as a beneficiary of your individual retirement account, life insurance policy, donor-advised fund, or brokerage account.

For more information, contact Emily Hirshbein at 718 741 1628 or EHirshbein@wcs.org.

NAMING OPPORTUNITIES

There are exhibits, galleries, and benches available for naming within well-loved spaces at our five wildlife parks. Naming an animal is also a unique way to provide critical support for the care, enrichment, and health of the animals at WCS's Bronx Zoo, Central Park Zoo, Queens Zoo, Prospect Park Zoo, and New York Aquarium.

For more information, contact Stephen Ham at 718 741 1619 or SHam@wcs.org.

Learn more about these giving programs at

wcs.org/waystogive

For information on how you can support the Wildlife Conservation Society, please call our Global Resources Division at 718 220 5090 or visit wcs.org. A copy of this annual report may be obtained by writing to the Chair of the Board, Wildlife Conservation Society, 2300 Southern Boulevard, Bronx, New York 10460. In addition, a copy of the 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. The report can also be found online at wcs.org.

SUGGESTED FORM OF BEQUEST

The Trustees of the Wildlife Conservation Society suggest 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 and tax identification number EIN: 13-1740011, I hereby give and bequeath [the sum of $____ OR ____ percent of my estate] to be used as determined by WCS for its general purposes."

In order to help WCS avoid future administrative costs, we suggest that the following paragraph be added to any restrictions imposed on a bequest:

"If at some future time, in the judgment of the Wildlife Conservation Society, it is no longer practical to use the income and/or principal of this bequest for the purposes intended, WCS may use the income and/or principal for whatever purposes it deems necessary that is most closely in accord with the intent described herein."

If you wish to discuss the language of your bequest and other planned giving options, please contact the Office of Planned Giving at 718 220 6894.

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Front Cover
Mountain gorilla, Bwindi Impenetrable National Park, Uganda

Back Cover
Nicobar pigeon, World of Birds, Bronx Zoo

Additional information about WCS, including a list of our professional publications for 2020 and 2021, can be found at **wcs.org**.

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