

2021
IMPACT REPORT

We Stand for Wildlife®

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

PROTECT

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

INSPIRE

We will 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 President/CEO and Chair of the Board

Mending our broken relationship with nature is the defining challenge of our lifetime. The collapse of biodiversity, the climate crisis, and the pandemic have made that abundantly clear. These calamities result from the extreme and unsustainable pressure we are putting on our planet's natural resources—endangering all living things, including ourselves.

We must find a new path that balances human needs with protecting and restoring nature—a path that actually harnesses nature's immense power. To take just one example: we know that nature-based solutions, especially preserving intact forests, can provide nearly one-third of the climate action we need by 2030.

This is a moment when Wildlife Conservation Society (WCS) can make a vital contribution. We have been at the vanguard of conservation since 1895, when we made it our mission to save the earth's wildlife and wild places through a unique mix of zoo- and field-based work.

WCS's early Bronx Zoo-based efforts helped save an American icon—the buffalo—from extinction. Since then, we have saved many more species and helped create, manage, expand, and strengthen hundreds of protected wilderness areas around the world, working hand in hand with Indigenous and local partners and national and local governments in 60 countries. We have also connected more than 400 million visitors to nature at our four zoos and aquarium in New York City. And every year, we help train the next generation of scientists, educators, and conservationists; last year we published more than 400 articles in peer-reviewed scientific journals.

The results that we achieve every day—highlights of which we share in this impact report—give us hope for the future. But we could not do any of it without generous support

from you and other donors, which we were profoundly grateful for during the challenging pandemic year. We hope that you are inspired by stories in the pages that follow about how you have helped WCS:

- Care for rescued animals at our five urban wildlife parks
- Reimagine zoo-based learning during the pandemic
- Devise promising new conservation strategies for lions, jaguars, elephants, whales, and sharks
- Advance efforts to ban the commercial trade in wildlife for human consumption
- Unlock the power of intact forests
- Protect Nature's Strongholds around the globe

We also hope that the passion and dedication of our very diverse staff and partners around the world shine through when you read their profiles, which this year include a New York Aquarium marine mammal and bird keeper, an Indigenous ecotourism guide in Bolivia, a Robertson Big Cat Conservation Fellow from China, a Thai anti-poaching leader, and a Bronx Zoo admissions manager. They are the heart and soul of everything that WCS does.

As we chart a path forward for the next decade with our 2030 strategy, we are grateful that we can count on your partnership.

Thank you.


Alejandro Santo Domingo
Chair of the Board


Cristián Samper
President & CEO

THE THREE CRISES OF OUR TIME

BIODIVERSITY LOSS CLIMATE CHANGE PANDEMICS

“The world is facing three major crises—
they are all interrelated, with many of
the same causes and solutions.”

—CRISTIÁN SAMPER
PRESIDENT AND CEO OF WCS

OUR SOLUTIONS

We face three interconnected crises: 1 million species are at risk of extinction; climate change is accelerating; and the pandemic, which is linked to the dangerous commercial trade in wildlife for human consumption, has claimed millions of lives. But we have hope for the future because of your strong support for our mission—and because of all we have accomplished with that support.



Conserve biodiversity and wilderness

with science-led species
protections and strategies to
protect 30 percent of
our planet by 2030



Advance nature-based solutions to climate change

—which can provide nearly
one-third of the action we need
by 2030—by unlocking the
power of intact forests



Help prevent future pandemics

by rolling out One Health solutions
worldwide and ending the
commercial trade in wildlife
for human consumption

WCS SEEKS TO:



Protect and rewild Nature's Strongholds

including 60 of the planet's most
critical remaining wilderness areas
on land and at sea



Inspire millions to protect nature

through our NYC zoos and aquarium,
and through strong digital engagement
and education programs



Stabilize or increase at-risk populations

of tigers, elephants, sharks, and
many other endangered species



Stop the commercial trade in wildlife for human consumption

through legislative reform, educational
campaigns, and stronger measures to
help law enforcement find, catch, and
prosecute wildlife trafficking criminals



Scale up our intact forest conservation fieldwork

to protect the planet's 1.7 billion
hectares of intact forest by 2030



Use cutting-edge science and strong policy

to advocate for conservation action
and promote nature-based solutions

SAVING WILDLIFE



Today, an unprecedented 1 million species around the world are at risk of vanishing forever. This is not a loss we can afford. From the smallest birds, bats, and insects that pollinate crops to the largest predators—including the big cats and sharks that keep food chains strong and balanced—biodiversity plays a vital role in the web of life that sustains us.

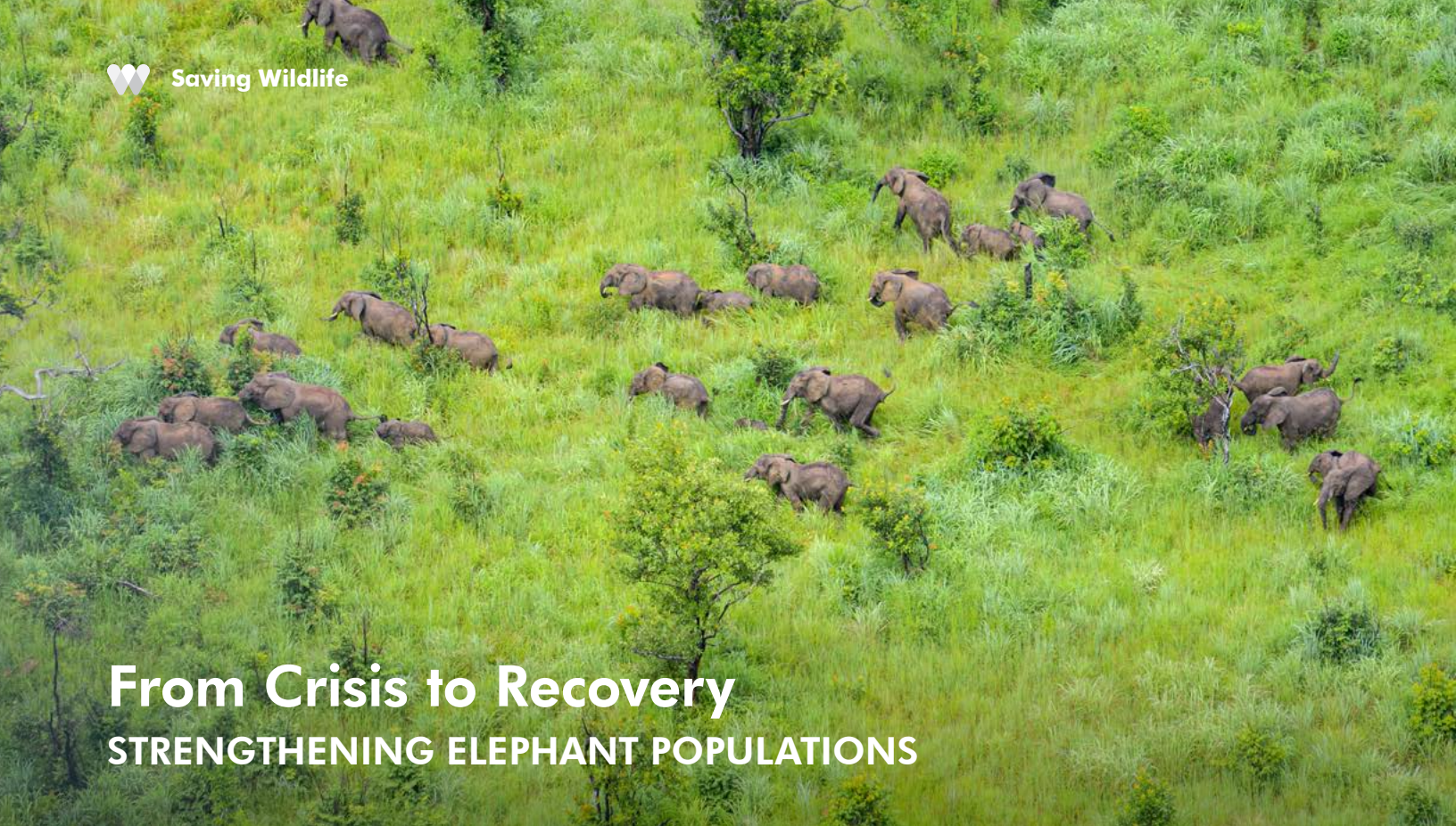
And it is not too late to reverse course. Saving wildlife has always been WCS's core mission, beginning with rewilding the buffalo, or bison, in the American West at the turn of the 20th century. WCS's ambitious 2030 goal is not only to prevent the extinction of our planet's most iconic and biologically important species—but also to lay the groundwork for their full recovery.

WCS is leading the way with science-driven fieldwork and policy efforts across 60 countries. We are protecting priority species that are ecologically vital and culturally valued: apes, big cats, bison, crocodilians, elephants, whales and coastal dolphins, sharks and rays, and tortoises and freshwater turtles.

In this section, you can read highlights of our progress toward protecting and recovering wildlife around the world, and learn about promising new conservation strategies for lions, jaguars, elephants, marine mammals, sharks, and more.

“WCS has recognized in a pioneering way the manmade catastrophes that are overcoming the natural world, and is one of the foremost organizations working to save the world’s wildlife.”

—SIR DAVID ATTENBOROUGH
NATURALIST, BROADCASTER, AND WRITER



From Crisis to Recovery

STRENGTHENING ELEPHANT POPULATIONS

Elephants are beloved animals, central to many African and Asian cultures. They also have far-reaching and beneficial impacts on their habitats. Science has shown that elephants play a key role in the growth and health of forests by dispersing seeds, minerals, and nutrients over long distances, and by opening pathways and mineral-rich clearings. Elephants' browsing patterns also improve trees' ability to store carbon, helping to curb climate change. In short: the fates of elephants and humans are intertwined.

After decades of poaching for their ivory, human-elephant conflict, and destruction of habitats, African and Asian elephants have disappeared from about 90 percent of the range they occupied two centuries ago. Their numbers have dwindled alarmingly, especially over the last 50 years.

But there is hope: 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 parts of Asia where human-elephant conflict is the key threat, our strategies have reduced potential conflict by as much as 90 percent.

WCS works in more elephant landscapes than any other conservation organization—and we have an evidence-based, proven strategy to not only stop their decline, but enable them to recover. The landscapes we protect contain more than 50 percent of African forest elephants and an estimated 50 percent of Asian elephants.

✓ Using science to combat elephant poaching and ivory trade:

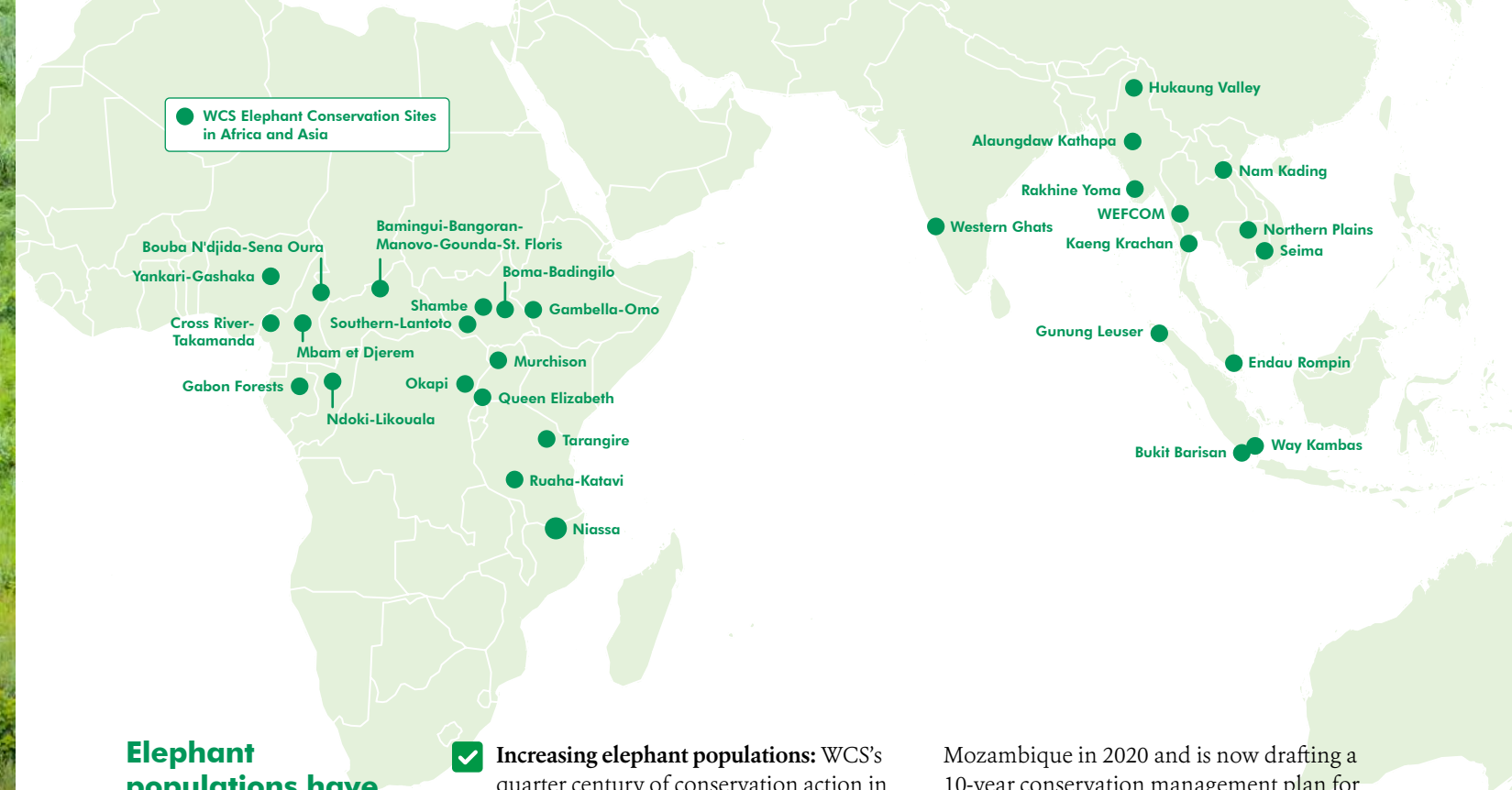
Historically, African forest elephants and African savanna elephants have been grouped together and scientifically classified as just Vulnerable. Several African nations have used this to justify keeping the ivory trade open.

In 2021, WCS's research on elephant populations and threats helped confirm that [these are two distinct species and must be respectively classified as Critically Endangered and Endangered](#). WCS will use this science to advocate for domestic bans on the commercial ivory trade in all countries at the CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) Conference of the Parties in 2022.



Rescuing Elephants in Cambodia

In 2020, WCS conservationists rallied together with rangers and community members to [free a 20-year-old Asian elephant from a bomb crater in Cambodia's Keo Seima Wildlife Sanctuary—a critical stronghold for this species](#).



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.

✓ **Increasing elephant populations:** WCS's quarter century of conservation action in the Republic of Congo's Nouabalé-Ndoki National Park has made it one of the rare places in Africa where forest elephant populations have remained stable over the last 20 years. In summer 2020, the region's most notorious elephant poacher and ivory trafficker was the first to be convicted in Congo's criminal court—the result of years of collaboration between WCS and the government. Authorities then arrested the kingpin trafficker operating above him—proof that our support of the government's enforcement efforts is gaining traction in stopping Congo's most dangerous wildlife criminals.

Two Years, Zero Poaching

We are taking our successful co-management approach and applying it to other key elephant landscapes, most notably in Mozambique's Niassa National Reserve, which contains the country's largest population of elephants. WCS has successfully stemmed the 10-year crisis in Niassa, when elephant poaching was rampant; we have now seen more than two years with zero poaching incidents in the Reserve. We have accomplished this by helping Niassa's law enforcement officials [stay a step ahead of poachers and traffickers](#), and through community-led conservation—working with the more than 30,000 people living in the Reserve to strengthen livelihoods and develop improved solutions to human-wildlife conflict.

WCS signed a new 20-year co-management agreement with the Government of

Mozambique in 2020 and is now drafting a 10-year conservation management plan for Niassa. Currently, Niassa's elephant population is estimated at about 4,000 individuals, but our science indicates that this landscape could support as many as 20,000 elephants with WCS's continued enforcement and community engagement programs.

Looking Ahead → → →

Across critical elephant strongholds in Africa and Asia, WCS is working with governments and communities to develop improved solutions to poaching and human-wildlife conflict. We seek to scale up law enforcement activities—including by hiring and training additional rapid response teams, and increasing helicopter and airplane patrols. And we seek for all governments to close all markets and trade in ivory, strengthening our push for the EU, Japan, and other nations to shutter their legal domestic ivory markets and end their commercial ivory trade—as the US, China and the UK already have. Ultimately, our goal is to expand and strengthen management of protected areas where elephants occur now, as well as in some regions where they used to occur, so their populations can fully recover, rewild, and thrive.

Leading Global Recovery of Big Cats

Tigers roaming through the snowy Russian Far East and the lush forests of Asia. Lions stalking prey across the vast savannas of Africa. These are vivid images in our mind’s eye—stories handed down through generations, a part of our natural heritage.

But the presence of big cats in the wild is also an important sign of a healthy ecosystem. As top predators, big cats regulate prey animals, and their absence can bring negative consequences. In eastern North America for example, numbers of white-tailed deer, which carry Lyme disease, have exploded because there are no longer populations of pumas to keep them in check.

WCS has been at the forefront of big cat conservation for more than 50 years. Today, with our government partners, WCS protects more big cat habitat and has more specialists on the ground than any other organization; we lead long-term programs at 47 sites in 33 countries across Africa, Asia, and the Americas.

WCS’s strategy focuses on protecting big cat strongholds—large areas of intact wilderness where robust populations can thrive. And we are getting results. Our longstanding presence in these strongholds is translating to recovery of big cats, with science-driven solutions reining in such threats as poaching, retaliatory killings, habitat loss, and disease outbreaks.

Our Vision: WCS aims to reverse the decline of all big cat species and restore populations to numbers their habitats can naturally sustain.



LEFT Female Bengal tiger in India. WCS conducted the first scientific study of wild tigers in India in the 1960s. Since then, we have seen tiger populations in India’s Western Ghats increase by 400 percent. Thanks to efforts by WCS and partners, global tiger populations are growing to more than 4,000 from a low of 3,200.

Tigers

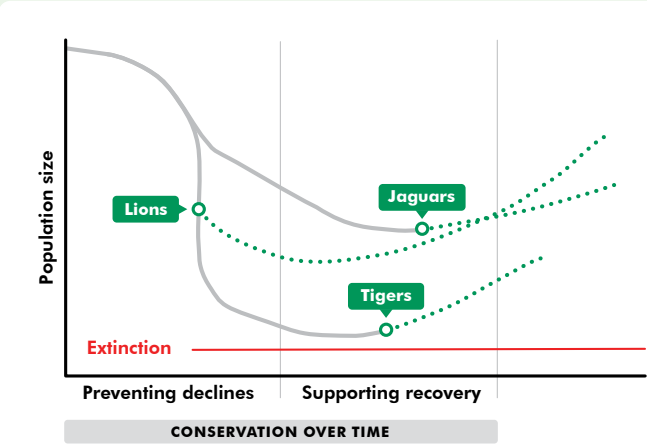
WCS sites are home to around half the world’s wild tigers, and as a result of our strategy, they are bouncing back. Where we have worked the longest, tiger populations are strongly recovering, and in some cases have reached their natural carrying capacities.

- ✓ **Safeguarding tiger strongholds:** To date, WCS has supported governments to create 24 protected areas of critical tiger habitat, including massive strongholds in the Russian Far East, in the mountains of India’s Western Ghats, and in Thailand’s tropical forests. We protect these gains through rigorous patrolling, bolstering law enforcement, and partnering with communities to foster conservation.
- ✓ **Restoring tigers by increasing their food sources:** WCS recently led research on how to fully restore a key tiger landscape by rewilding it with large prey animals. Scientists looked at three large prey species in Thailand’s Western Forest Complex, a stronghold where tigers have made a comeback but have not fully recovered because of insufficient prey in some areas. This first-of-its-kind study shows that if people living near tiger habitats modify activities even to a small degree, tiger prey can bounce back. It provides a roadmap to tigers reaching carrying capacity in this vital landscape, and a model for other tiger strongholds.

- ✓ **Studying tigresses to guide protection:** [WCS scientists and partners published](#) research providing insight into the complicated lives of tiger mothers. They reduce their range by 60 percent while raising cubs, and stay in a smaller area for up to 18 months—far longer than previously thought. Understanding this behavior allows us to tailor patrols and intensify monitoring in real time to support tigresses and their cubs when they are at their most vulnerable.
- ✓ **Preventing deadly disease:** Canine distemper virus is a lethal threat for the endangered Amur, or Siberian, tiger. WCS and partners published research showing that by vaccinating even a small number of tigers—as they are tagged for monitoring, or for relocation—we can protect them and even prevent the extinction of the most endangered, isolated populations.

Looking Ahead →→→

Our global big cat conservation efforts are focused on stopping top threats and stabilizing or growing big cat populations at all WCS sites. Where cats have been lost, we will look to “rewild” them. For example, [WCS scientists have discovered enough potential habitat in Arizona and New Mexico to reintroduce a population of 150 jaguars—a species which last bred in the US in the 1960s.](#) We will also develop and launch an integrated mapping and reporting system for tigers, jaguars, and lions, enabling us to analyze changes in habitat and populations in near-real time to guide global recovery efforts. In Africa, we are building a monitoring network for lions across the Sudano-Sahel region. It will enable us to track trends in some of the most imperiled lion populations on the continent and is a key component of our long-term plan to recover lions.



Recovering Big Cats

With a strong focus on conserving our priority species across WCS strongholds, we will help move big cats along a recovery curve. Our field experts will go from preventing further declines—as with lions—toward supporting their recovery—as with tigers. Here, the dotted green lines show the potential trajectory of lions, tigers, and jaguars with WCS’s immediate and long-term conservation action.

MEET A WCS EXPERT

“With a WCS scholarship, I am writing my PhD at the University of Florida on human-snow leopard coexistence.”

Xiaoxing Bian

ROBERTSON BIG CAT CONSERVATION FELLOW

Q: How did you come to work with WCS?

XIAOXING: I grew up in Beijing, a completely urban girl. But from the age of four, I loved observing any animal I could find, which usually meant beetles. As I made my way through forestry school and then a master's degree in wildlife ecology, I kept hearing about WCS, which has an iconic reputation in China. People talked about WCS scientists like George Schaller, who since 1980 had been working in the harshest, most remote parts of Tibet, doing fundamental science on species like chiru and wild ass. They said if you want to work with the toughest, most hardcore field biologists, you need to join WCS. So in 2013, I did.

For six years, I looked for snow leopards in the Chang Tang region of the Tibetan Plateau, where the average elevation is 5,000 meters. Because snow leopards are so elusive, we set up 360 camera traps across 5,000+ square kilometers—creating the highest altitude camera trap network in the world. We ran into lots of fierce Tibetan brown bears and rutting wild male yaks—and fixed many flat tires. It was the most fun I've ever had.

Q: Why is this work important to conservation?

XIAOXING: China has 60 percent of the world's snow leopard habitat, and half of that is on the Tibetan Plateau. But just 2 percent of their range has been sampled. And these animals are under intense pressure. Though WCS helped protect the Chang Tang through the creation of one of the world's largest reserves, the snow leopard's habitat extends into heavily populated areas. As humans move in, we see fewer animals and more conflicts. We interviewed 200 households; many had lost livestock or even family members to brown bears or wild yaks. We're

working to figure out ways for people and animals to co-exist safely. Climate change is also damaging everyone's world. The glaciers are melting so fast I could watch it happen out in the field: every six months they'd retreat another dozen meters.

Q: Your most rewarding moments?

XIAOXING: Our exchanges with local people were so moving. Even those who'd suffered great losses would often say that they understood, the animals also have children to feed. There are retaliatory killings, but many of these people are Buddhists who value all life and regard these animals as their siblings. They're inventing new protective strategies, like using a kind of scarecrow—a “scare-leopard.”

These communities hold deep knowledge. One local Tibetan ranger, Tharjie, could precisely draw the round pugmark [footprint] and heart-shaped scrape [marks] of a snow leopard, and the longer, clawed track of a wolf. He showed us where to find blue sheep, snow leopards' favorite prey, and the best locations for our cameras. When I asked him how many cats are in the area, he said 20—exactly what the cameras ended up showing. We were so grateful to have him on our team. Nothing can replace that kind of lifelong on-the-ground experience.

I also, just once, got to see a wild snow leopard. I was with Dr. Schaller in Qinghai province when a colleague spotted a tiny cat head on a distant ridgetop. For several minutes he stared at us and we stared back. George was happy—he hadn't seen one for several years—but not as happy as me. I jumped like a rocket, ran up the mountain, and found super-fresh scat and tracks in the snow. I could still feel the power and beauty of this predator, a king free in his kingdom.

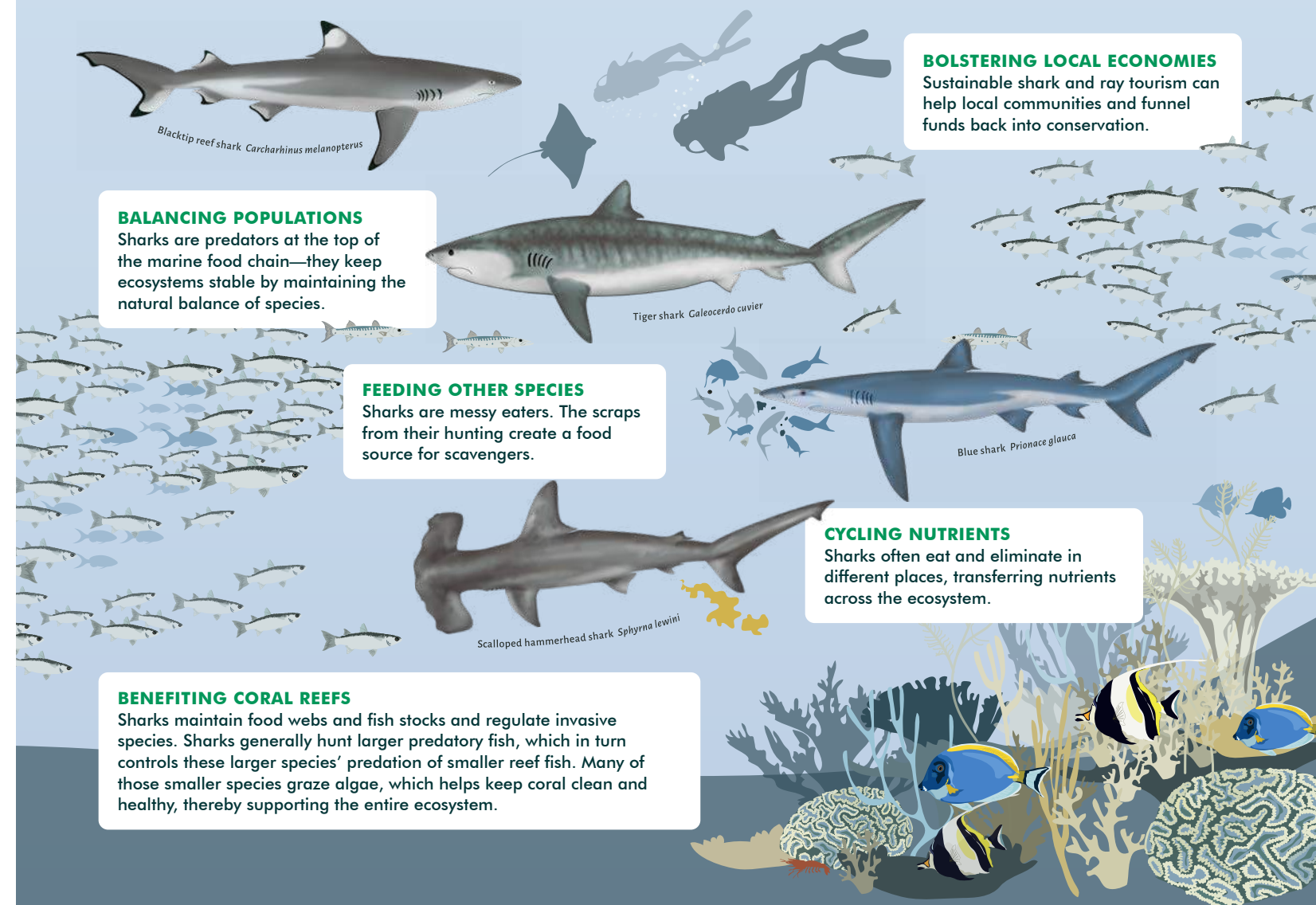
Saving Sharks in 10 Hotspots over 10 Years

Though often feared, sharks maintain healthy ecosystems and are among the world's most threatened species groups: open-ocean sharks have declined over 70 percent in the last 50 years. Building on decades of expertise, WCS's new [10x10 shark strategy](#) will focus the next 10 years of conservation on 10 countries that are strongholds for sharks and rays.

Overfishing is the main threat, and WCS is working with communities to craft locally relevant approaches to sustainable fisheries that foster the recovery of sharks and rays. This strategy dovetails with our longstanding efforts to support national governments in safeguarding their most biodiverse waters through marine protected areas.

HEALTHY SHARKS = HEALTHY OCEAN

SHARKS STRENGTHEN THE HEALTH AND PRODUCTIVITY OF MARINE ECOSYSTEMS



Saving Whales with Smart Science

To see a whale for the first time is astonishing: an impossibly large, air-breathing mammal is visible for a moment, then disappears into the ocean depths. Thanks to major conservation efforts by WCS and others, such encounters are becoming more accessible in many places—including [right off New York City's shores](#).

But the history of whales and humans is marked by exploitation as well as reverence. For centuries, whales were hunted relentlessly. With a moratorium on commercial whaling and increased conservation efforts, some whale populations are slowly recovering. As forage fish and other prey species are becoming more abundant in certain areas—including in waters off New York—some whales are increasingly using these habitats to feed. However, a range of new threats including ocean noise, ship strikes, and entanglement in fishing gear mean that we must remain vigilant.

Since the early 20th century, WCS has led pioneering whale research and monitoring around the world, leading to greater protection of important whale habitats. Today, WCS scientists are gathering and analyzing essential scientific data to assess the impact of increased noise and shipping on whales and other marine mammals. This work is especially urgent in the busy New York seascape and in the Arctic, where melting sea ice is clearing pathways for potential increases in shipping.

WCS's leading marine mammal research has won comprehensive protections and lasting results. For example, following our decades of research and conservation action, two humpback whale populations off Gabon and Madagascar have recovered to 70–90% of pre-whaling levels.

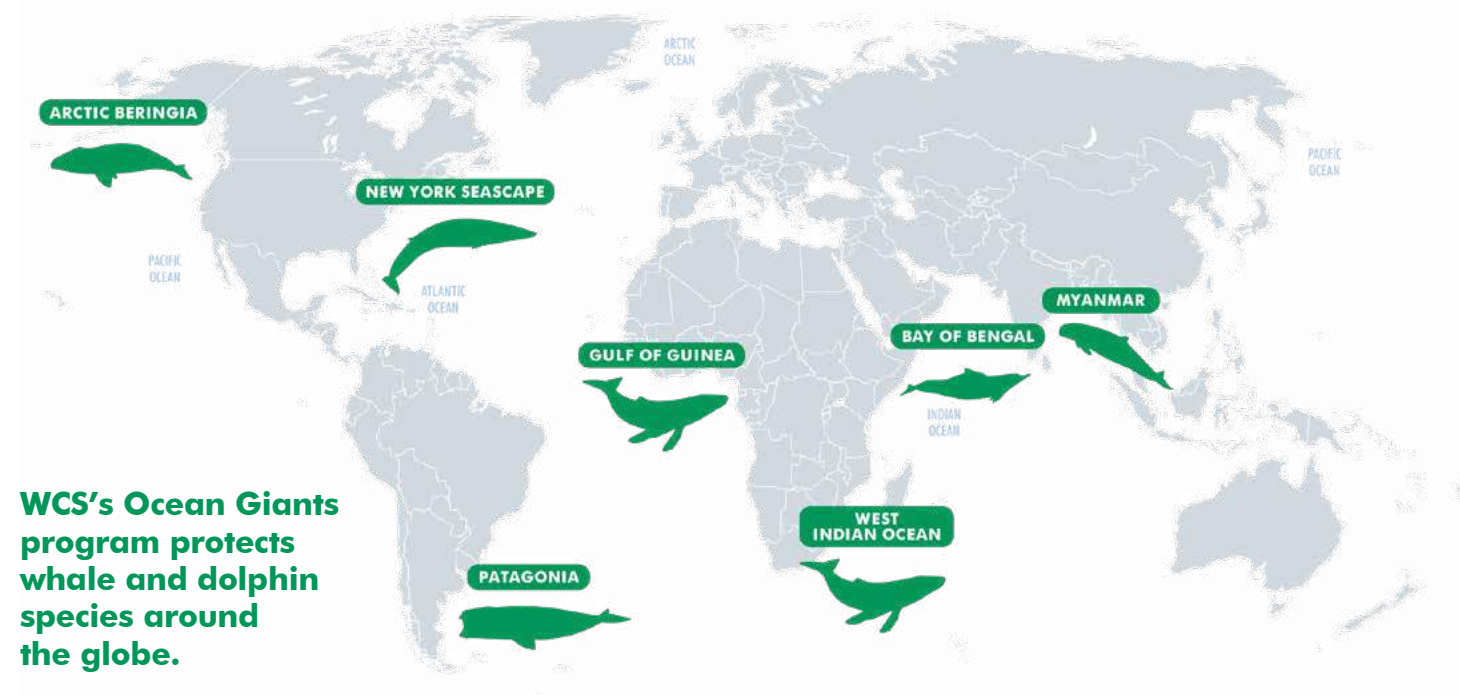
Safeguarding Whales in the New York Seascape

Diverse marine life—including humpback whales, harbor porpoises, bottlenose and common dolphins, fin whales, minke whales, and even the critically endangered North Atlantic right whale—can be seen in the New York Bight. And while these are encouraging signs, NY/NJ is also home to the largest port on the eastern seaboard.

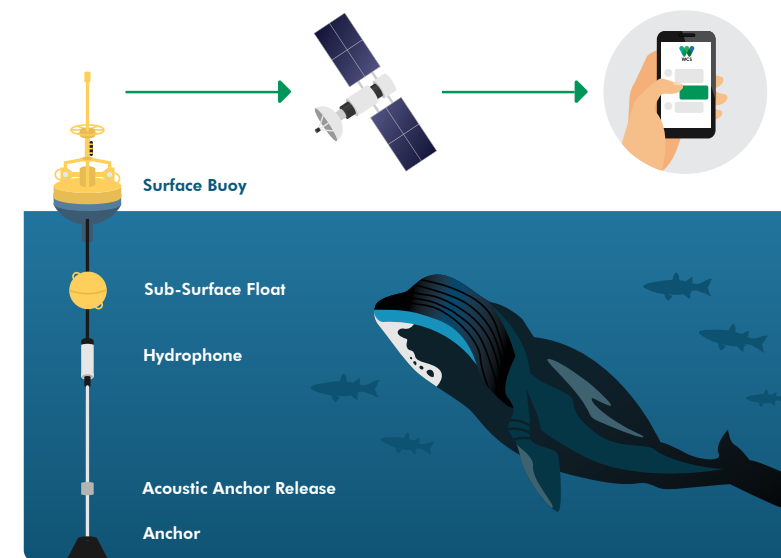
Ship-strike risk and unusual mortalities for some species are major concerns. These are some of the reasons why WCS's effort to better understand whales' habitat use and migration patterns through the waters off New York is so important and why we use our science to strongly advocate for their protection.

Protecting the North Atlantic Right Whale

WCS's acoustic work with Woods Hole Oceanographic Institution (WHOI) [in the New York seascape detects four species in near-real time](#), and some of this



WCS's Ocean Giants program protects whale and dolphin species around the globe.



ABOVE When buoys detect critically endangered right whales in the New York Bight, just outside the harbor area, NOAA issues a “slow down” request for ships. A new kiosk at the New York Aquarium displays recent detections—[allowing visitors to know which whales are just off our shores in near-real time](#).

to navigation—creating new risks for marine life. By identifying where important marine mammal habitats are, WCS's scientific insights are helping to make informed decisions that minimize risks to marine mammals from shipping and providing proof of ocean noise levels to international decision-making bodies charged with defining marine mammal protections, including the Arctic Council, UN agencies, and the Convention on Biological Diversity.

Whales and other marine mammals depend on sound to live; they can hear over great distances, using sound to locate prey in some instances, and communicate with each other. In the Arctic—home to bowhead and beluga whales, walrus, seals, and many more—WCS has generated a first-ever baseline of acoustical data in a key habitat, the Bering Strait. This science empowers us and our Alaska Native partners to promote more targeted protections for iconic Arctic marine mammals and provides a way to monitor changes in the ocean's soundscape.

technology is helping WCS and others roll out additional protections. For example, the National Oceanic and Atmospheric Administration (NOAA) issues requests for ship “slow downs” when the two WCS-WHOI monitoring buoys relay data on the presence of North Atlantic right whales, in order to safeguard the approximated 368 individuals that remain. Additional studies by WCS and colleagues found that humpback whales in this area produce intricate songs and social sounds, and may be present nearly year round.

Advancing Noise Protections in the Rapidly Changing Arctic

With climate change and melting sea ice, the Arctic is changing rapidly and new areas are opening up

Looking Ahead → → →

Building on work in the New York seascape and the Arctic, WCS is launching a new effort to quiet ocean noise in the Western Indian Ocean. In New York, WCS science is informing best practices for marine wildlife in the context of planned offshore wind projects; we are committed to minimizing potential impacts on marine mammals—from siting, to construction, to operation. All of these actions will advance our long-term vision for whales, dolphins, and other marine mammals to thrive throughout the world's oceans.

ONE WORLD, ONE HEALTH

Pangolins are among the most highly trafficked animals in the world. When animals are taken from the wild and sold in urban centers, they can be conduits for viruses that jump from animals to humans. WCS is using strong science, policy, and action on the ground to protect trafficked species while safeguarding human health.

Emerging and re-emerging viral disease outbreaks impacting people and animals have risen sharply in recent years. Many of these viruses, including influenza, West Nile, HIV, and now SARS-CoV2, originate in wildlife. The global public health and economic crises unleashed by this zoonotic-origin pandemic have shone a harsh spotlight on the far-reaching dangers of the increasing contact between people and wildlife through deforestation, and the harmful commercial trade in wildlife for human consumption.

The [One Health approach](#) that WCS has pioneered recognizes the strong links between human, animal, and environmental health. Building on decades of scientific leadership on this issue, WCS is partnering with governments to secure crucial, permanent changes that will protect human health and well-being, economies, and security on a global scale, while also preventing the devastation of the world's wildlife and wild places.

This section highlights WCS's progress in banning the commercial trade in wildlife for human consumption, our efforts to help local communities detect and reduce transmission of deadly diseases such as Ebola, and our long track record of leadership in wildlife health.

“The health of our planet hinges on the symbiotic relationship between humans, animals, and the environment.”

— CHRIS WALZER

EXECUTIVE DIRECTOR, WILDLIFE HEALTH PROGRAM

Our Best Bet to Prevent the Next Pandemic

ENDING THE COMMERCIAL TRADE IN WILDLIFE FOR HUMAN CONSUMPTION

Along wildlife trade supply chains, wild and domestic animals that would never normally come into close contact are packed together. Stressful and unsanitary conditions increase the chances of “spillover events” where pathogens move between animal hosts, then jump to humans. [The end result can be zoonotic-origin diseases like COVID-19](#), and other potential pandemics or epidemics.

Now is the time to secure permanent changes that will protect human health, economies, and security on a global scale, while also preventing the devastation of the world’s wildlife. Evidence shows that species threatened by habitat loss or exploitation can transmit more zoonotic-origin diseases. In response, WCS is advancing a science-based strategy to end commercial trade in live, wild birds and mammals for human consumption.

Advancing Reform at the National Level

Drawing on our scientific, policy, and field-based expertise, WCS is working with governments around the world to decrease the risk of spillover events by supporting wildlife trade policy reform and strengthening counter-wildlife trafficking efforts. The following are just a few examples of our many efforts in countries where spillover risk is high:

✓ **In China:** In January 2020, in response to the rapid spread of COVID-19, [WCS issued a statement pushing for urgent action from governments and societies to end the wildlife trade](#). The following month, the Chinese government announced a national ban on the trade of land-based animals for human consumption, which protects over 2,000 wild species.

BELOW WCS trains rangers and other law enforcement officials across the globe in how to use technology such as the SMART patrol system to target poaching hotspots, dismantle illegal trade networks, and monitor wildlife health.



RIGHT/BELOW To prevent future outbreaks, WCS is working to stop the commercial trade in wildlife for human consumption, particularly of birds and mammals. Our longstanding counter-wildlife trafficking efforts also protect at-risk animals such as the slow loris and African grey parrot, which are highly trafficked for the illegal pet trade. Health and animal care experts from WCS’s zoos and from our field sites have worked closely with law enforcement agencies to rehabilitate and release many confiscated animals back into the wild.



It also finalized a new biosecurity law with key provisions on zoonotic-origin disease prevention and control aligned with WCS’s prior recommendations.

With this new legislation in place, China has significantly stepped up law enforcement, regulation, and inspections in conjunction with strong recommendations from WCS. For example, in Guangdong province alone, authorities conducted 20 times more total inspections than the previous year: more than 660,000 of markets, 8.2 million of businesses, and 1.2 million of farms. Authorities also carried out more than 4.6 million e-commerce inspections. The government shut down 12,000 markets, farms, and restaurants nationwide found to be illegally trading wildlife in the first few months after the national ban. And cases heard by the judiciary involving illegal purchase, transport, sale, hunting, or killing of rare or endangered wildlife has increased by 22 percent compared to the previous year.

✓ **In Vietnam:** In 2020, the Vietnamese government prohibited the import of live wildlife, called for stronger enforcement of wildlife trafficking, and directed its ministries to review wildlife farming operations and penalties for wildlife consumption. WCS is currently working with partners in Vietnam on national policy reform to end the commercial trade of live wild birds and mammals.

✓ **In the US:** We are urging the Administration and Congress to strengthen global health security by preventing the root causes of zoonotic-origin pandemics. WCS is lobbying and mobilizing the public to enact the [Preventing Future Pandemics Act](#) and the [Global Pandemic Prevention & Biosecurity Act](#), and we are pushing for a catalytic global fund to prevent and prepare for the next pandemic. Through these efforts, we aim to end the commercial trade in live wildlife for human consumption, stop deforestation, and strengthen pre-spillover zoonotic-origin disease surveillance, while protecting the access and rights of Indigenous Peoples and local communities that depend on wildlife consumption for their food security or cultural expression.

Supporting Law Enforcement Agencies

WCS has the largest global anti-wildlife trafficking presence of any conservation organization, with teams on the ground in nearly 30 countries. While the danger of pathogen spillover is not limited to trafficked wildlife, it poses a sizeable risk, and increased enforcement efforts are needed as countries adopt stricter legislation.

In India, for example, WCS provided support to law enforcement agencies in a number of wildlife trafficking cases throughout the last year, resulting in arrests as well as seizures by the authorities of high-value wildlife and/or products including pangolins, leopard fur, ivory, and Indian star tortoises.



A Decade of Discovery at the Bronx Zoo's Molecular Diagnostics Lab

WCS has long recognized how helpful molecular technologies could be in detecting disease risks and better understanding infectious diseases in wildlife. To this end, over a decade ago we created a zoo-based molecular diagnostics laboratory at the Bronx Zoo's Wildlife Health Center, led by Dr. Tracie Seimon—one of only a few such zoo-based labs in the world.

The molecular program's fascinating discoveries include: using environmental DNA (eDNA) to find endangered species; uncovering illegal wildlife trade activity; detecting wildlife disease risks; and conducting biodiversity surveys on Mount Everest.

We have developed mobile capacity to deploy our diagnostic tools around the globe, enabling scientists to detect wildlife disease outbreaks and inform conservation measures—including for chytrid fungus that threatens amphibians, and canine distemper virus, which is impacting Amur tigers.

Looking Ahead → → →

WCS seeks to prevent future pandemics and protect wildlife through four complementary strategies:

- **End commercial trade through policy and legislative reform:** We will design and launch national advocacy campaigns aimed at ending the commercial trade and associated markets of live wild birds and mammals for human consumption in Asia, Africa, and Latin America.
- **Strengthen and expand surveillance at key points along wildlife supply chains:** We will strengthen pathogen surveillance within and beyond key countries by improving field-based capabilities, and through timely analysis and reporting.
- **Support law enforcement agencies to disrupt wildlife trafficking networks:** We will provide actionable intelligence and other targeted support to law enforcement and judicial agencies to disrupt and deter criminal networks that traffic wild animals within countries and across borders.
- **Advance global commitments:** We will advance a strategy to win global commitments to measures designed to prevent the emergence and spread of new zoonotic-origin diseases, as well as a potential new pandemic prevention treaty or protocol, focusing on the United Nations, the Convention on Biological Diversity, and intergovernmental organizations such as the World Health Organization and the World Organization for Animal Health.

MEET WCS'S GOVERNMENT PARTNER

“ I manage anti-poaching patrols and monitor wildlife populations in Thailand's Huai Kha Khaeng Sanctuary and promote conservation in local schools and communities. ”

Permsak Kanishthajata

HUAI KHA KHAENG WILDLIFE SANCTUARY SUPERINTENDENT



Q: What is a typical day for you?

PERMSAK: I assign daily activities to my assistant officers and staff. I also support the wildlife research station, located inside the protected area, guiding the systems for our tiger population monitoring. Strengthening the day-to-day team and training them to make sound decisions is very satisfying and has had a positive impact on our conservation objectives.

Q: What makes Huai Kha Khaeng Wildlife Sanctuary an extraordinary stronghold?

PERMSAK: For the Thai people, the sanctuary is at the heart of the conservation movement. It has become a model for protected areas in Thailand and other countries in Southeast Asia because of its protections for tigers and other endangered species. Most importantly, the populations of tigers and other endangered wildlife have been increasing.

Fifteen years ago, the SMART patrol system was rolled out within the sanctuary. This reporting tool equips rangers with technology and information and has effectively suppressed all illegal activities that are harmful to wildlife and their habitats. WCS provides important support to the government by using science-led actions such as these to strengthen interventions and monitoring in the [Huai Kha Khaeng and Thung Yai wildlife sanctuaries](#). This has improved the management of the protected area, which now supports a range of biodiversity and ecosystem services. Under the Thai Office of Wildlife Conservation and the Department of National Parks, Wildlife, and Plant Conservation,

it is one of the best wildlife sanctuaries in Thailand and has become globally recognized amongst wildlife conservation communities as a standard for protected areas.

Q: What accomplishments are you most proud of?

PERMSAK: After I finished my bachelor's degree in wildlife from Kasetsart University, I was a contract officer at a wildlife sanctuary near Huai Kha Khaeng. For four years, I managed a small ranger station in a very remote area and it was a really tough place to live and work. I've now been doing conservation work for about 24 years, and those early years helped me improve my skills in real-world situations. Another accomplishment I feel proud of is pushing for science-based management, strong law enforcement, and collaboration with people who rely on the sanctuary. These approaches have significantly reduced poaching incidents in the area, indicated by the reduction of poaching camps over the years.

Q: What are your hopes for the future?

PERMSAK: As tigers, elephants, and other wildlife gradually recover and disperse into the surrounding protected area, we want to make the buffer zone around the protected area safer to reduce human-wildlife conflict. I also hope that Huai Kha Khaeng will continue to be a model for younger generations of wildlife researchers and managers, to learn how to conserve protected areas based on science.

Advancing Health with Science and Partnerships

WCS’s veterinarians and other health experts partner across borders and disciplines to solve the world’s most pressing wildlife health challenges. At the heart of our One Health approach is community: we collaborate with diverse partners ranging from government and international health agencies, to villagers in remote forests, to restaurants in big cities.

Ebola Detection and Prevention

In Central Africa, Ebola remains a threat to human communities and a serious concern in the decline of gorilla and chimpanzee populations. Together with governments and local villages, we set up an early warning system for Ebola outbreaks focusing on remote areas with high biodiversity, which also have some of the poorest access to health resources.

Our accomplishments include:

- ✓ Conducting Ebola education campaigns across more than 30,000 square kilometers of forest in northern Congo—home to about 60 percent of the world’s gorillas—that reached 6,600+ traditional hunters and thousands more women and children.
- ✓ Building a surveillance network of traditional hunters from 260 villages, who have reported 58 animal carcasses to date—which WCS diagnostic analysis confirmed posed no risk of Ebola spread.

Reducing the Urban Wild Meat Trade

The illegal wild meat trade is widespread in cities in Central Africa. Though this trade can and does exist legally, many restaurants also source protected wildlife caught by poachers. In 2021, WCS and partners released a study finding that restaurants play a key role in whether protected wildlife winds up on the menu, and that monkeys are most at risk of poaching and trade in the Central African cities of Kinshasa and Brazzaville. Our focus groups confirmed the widespread view that wild meat is a luxury item and sign of wealth—which is also the case in China and other countries.

In response, WCS, together with Kinshasa-based organizations and YoYo Communications, supported the government to launch a unique behavior change campaign in Kinshasa. Avoiding negative messaging, we instead showcase the city’s vibrant social life. Partnering with a Congolese celebrity chef, our campaign invites people to preserve wildlife through a new food trend: celebrating Congolese cuisine without wild meat. With Oxford University, we are tracking our progress on changing perceptions and reducing wild meat demand.

SMART for Health: Piloting New Approaches to Preventing Emerging Diseases

Ten years ago, WCS and partners created SMART (Spatial Monitoring and Reporting Tool) to monitor, analyze, and respond to threats to wildlife and



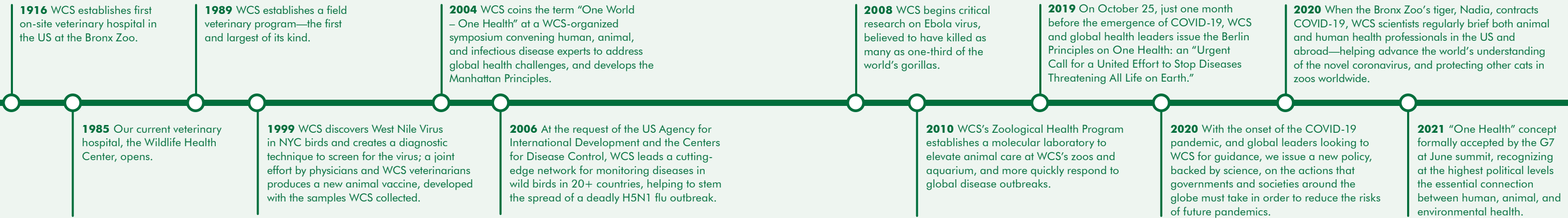
ABOVE Celebrity chef Madame Godelive Muvaro prepares a wildlife-friendly Congolese recipe.

protected areas in real time—and shut down poaching and other illegal practices in partnership with law enforcement. SMART is now used by WCS and other organizations at 1,000 sites globally, with approximately 50,000 protected area staff trained in its use.

WCS has now built upon this approach to collect real-time wildlife health updates—SMART for health—to detect and stop emerging disease threats such as Ebola, avian influenza, and coronaviruses wherever they might emerge. SMART for health is accessible via smartphones in even extremely remote areas, and supports tracking of animal behaviors, mortality events, and photo uploads. WCS is piloting the tool in Cambodia, Lao PDR, Vietnam, and Mongolia, in support of wildlife health surveillance system development by our government partners.

Looking Ahead → → →
We will expand rollout of SMART for health, creating a robust worldwide network of wildlife disease sentinels collecting and sharing information to stop the consumption of illegally caught wild meat—and prevent future pandemics. In wildlife trafficking hotspots, we will work with consumers and restaurants to reduce demand for wild meat, conduct surveillance, and support law enforcement efforts across the globe to protect wildlife and prevent disease outbreaks.

A Century of Pioneering Zoo- and Field-Based Wildlife Health Solutions



CONNECTING PEOPLE TO NATURE AT WCS'S ZOOS AND AQUARIUM

In our increasingly urban and technological world, people have become more disconnected from nature. But just one visit to a zoo or aquarium has the power to rekindle that vital connection. WCS's zoos and aquarium serve as vast oases at the heart of a metropolis where nature can be hard to come by. These beloved New York City cultural institutions attract people from every borough and beyond—most of whom will never be able to travel to Tanzania or Patagonia to see the planet's most iconic animals.

WCS sets the standard worldwide for best-in-class animal care, innovative exhibits, and zoo-based conservation through our powerful combination of [five urban parks](#)—the Bronx Zoo, New York Aquarium, Central Park Zoo, Queens Zoo, and Prospect Park Zoo—and conservation work in 60 countries across the globe. While our parks were closed for several months during the pandemic, hundreds of our dedicated staff continued caring for our more than 17,000 animals every day—and we found [new ways](#) to help people connect with nature virtually.

In just the first year since our parks have reopened, we have safely hosted nearly 3 million visitors eager to return to in-person experiences—and many of our parks' animals, such as our gorillas, are enjoying having visitors once again. In partnership with the Association of Zoos and Aquariums, we are forging ahead with our critical mission to spark a powerful movement to protect wildlife and wild places, while advancing the conservation of species in the wild.

Read on for more about how our parks are making an enormous difference for wildlife, for wild places, and for people of all ages and walks of life in New York and around the world.

“It’s not enough to keep animals in exhibits just for people to look at; there has to be a higher purpose, and for us, it’s conservation of species in the wild.”

— JIM BREHENY

EXECUTIVE VICE PRESIDENT AND GENERAL DIRECTOR OF
ZOOS AND AQUARIUM & DIRECTOR OF THE BRONX ZOO

Caring for Rescued Animals at WCS Parks

WCS's Bronx Zoo and our other wildlife parks are recognized as global leaders in breeding endangered species and educating millions of visitors each year about wildlife and conservation. A lesser-known—but extremely important—role our parks play is taking in animals that cannot return to the wild. WCS receives a multitude of calls from government agencies and other organizations seeking guidance on injured, orphaned, and confiscated animals—and in recent years, we have cared for tens of thousands of rescued animals across our sites. By providing these animals with the long-term care they need, we are also inspiring zoo and aquarium visitors to learn more about the risks these species face in the wild and to support urgently needed conservation action.

Ruth the Golden Eagle

Ruth's rescue story began in 2020 when she was injured in a collision with a vehicle in Utah. Accidents like these pose a serious threat to the golden eagle population in the western United States. Ruth's injury could not heal properly, and she lost the range of motion and strength needed to fly, hunt, and care for herself in the wild. But Ruth is a fighter, and the rehabilitator who was caring for her called the Bronx Zoo to ensure that she could receive the expert care she needs for the rest of her life. Ruth's beauty and strength, and her new lease on life, are sure to inspire countless zoo visitors for decades.



Sidney the Harbor Seal

WCS stepped in to [welcome a harbor seal pup at the New York Aquarium](#) after a team at the Pacific Marine Mammal Center discovered her alone on a rocky beach in California with her umbilical cord still attached. The veterinarians who examined her suspected she was born prematurely, so rehabilitating her for release back into the wild was not possible. Harbor seal pups can become orphaned for a multitude of reasons, including their mothers being startled or disturbed by human activity. Our animal care staff worked to acclimate Sidney to her new home at the Sea Cliffs exhibit, where she has developed a close bond with Murphy, another female harbor seal born at the aquarium last summer.

Amos the White Pelican

A few years ago, Amos was found in the Port of Corpus Christi, Texas with drooping wings. Rescuers determined that he had been shot in both wings and would not be able to survive in the wild. Our veterinarians have ensured that he receives the best possible healthcare, and though he will never be able to fly, [Amos now lives at the Bronx Zoo](#), where his larger-than-life personality is helping to educate visitors about human-wildlife conflict.



Looking Ahead → → →

WCS will remain steadfast in our work with government agencies and partners across the country to urgently respond to animals in need of expert care. Our veterinarians and curators will also collaborate with our field staff to help breed and rewild species at risk around the world—ones that could otherwise disappear forever.

Providing Jobs, Internships, and More throughout COVID

Our flagship Bronx Zoo is an anchor in the community: we employ more youth than any other organization in the borough. In the past year, WCS intensified support to our city's young people, providing a range of online and in-person job, internship, and volunteer opportunities. We also increased our reach. For example, attendance at our Career Skills workshop expanded by more than 330 percent.

WCS jobs and internships give young New Yorkers pathways to transform their experiences with WCS into future careers. Olivia Ramos, pictured here, began her journey with WCS in 2014, working summers as an Education Fellow at the Bronx Zoo. Now a full-time WCS Youth Development Coordinator, Olivia inspires her fellow Bronx youth to become involved in conservation, and helps shape WCS's educational programming.

MEET A WCS EXPERT

“ I work to ensure that all of our Bronx Zoo visitors receive a warm welcome. ”

Michelle Silva

ASSISTANT MANAGER,
BRONX ZOO ADMISSIONS

Q: What is your typical day?

MICHELLE: When we reopened the Bronx Zoo last July, we had to get a new reservation system up and running for up to 14,000 visitors a day, and figure out how to speak with guests about masks. But it was worth it: our visitors were so happy to be back at the zoo! I manage more than 40 people; it's exhausting and challenging sometimes, but we're like a family so we make it work. And if I'm stressed, I can go see lions or pet the goats in the Children's Zoo. How many people have that?

Q: What are your most memorable moments?

MICHELLE: Over the years, I've probably helped thousands of visitors so it's hard to choose one. One day I saw a little girl crying and decided I had to help by giving her something extra special. I had turned to something else when I felt a tap on my shoulder. There she was with a sweet smile saying, 'thank you!'

I've always been a person who wants to go above and beyond. And I get a lot in return. There's a longtime WCS Member, Donna, who always remembers me. She'll come over and show me amazing photos that she takes of wildlife at each of our parks.

I also once got a chance to get kisses from a sea lion. It was such a weird feeling on my cheek. We had to stay very still; all you smelled was fish and I was super nervous, but I've never forgotten it. Feeding a giraffe was also memorable. They're beautiful but so big and so picky. They decide whether to take the food from your hand.



I also love working with young staff. When I started in 2005, this was my first real job and for many, it's their first job, too. They often come to me for guidance and advice. That's super special for me.

Q: What is your hope for the future?

MICHELLE: My daughters are now 19 and 15; I've been at WCS nearly their whole lives. All those years, it has been an extremely supportive place to work. That's what I want for my daughters: the chance to be themselves—authentic, caring human beings—and be happy in whatever they do. I also know that if we keep visitors satisfied and coming back to the zoo, the proceeds from their tickets will help prevent the extinction of wildlife all over the world.

Reimagining Zoo-Based Learning

Everyone has a role to play in saving wildlife and wild places, and forging a connection to nature is the first step. But today, people are becoming more disconnected from the natural world, and children risk being cut off from nature during a formative time in their development.

WCS helps bridge that divide in a unique way. Our four zoos and aquarium in New York City make science and conservation accessible to people of all ages and backgrounds, reaching some 4 million people each year through our immersive exhibits and rich interpretive materials that draw content from our field-based work in 60 countries. Our urban wildlife parks and staff are also critical resources for schools: we help educators teach young people why it's important to protect wildlife and wild places—and how WCS does it.

Throughout the COVID-19 pandemic—even during the five-month closure of our parks—WCS stayed on mission and continued to provide

children, families, and schools with a unique gateway to nature, pivoting to provide rich science and conservation content virtually. Once we re-opened in July 2020, our parks were one of the few places where people could get out and experience nature and wildlife—sorely needed in a difficult time.

We learned a lot from reimagining how to connect people to nature during the pandemic—and in doing so, expanded and strengthened our reach. Below are just a few examples.

Educating through Multiple Channels

Whether visiting with animals at our parks or logging on to WCS's social media channels, WCS inspires people to learn. Visitors at our parks saw a range of behaviors from iconic species like apes and big cats, and learned how scientists protect these animals in the wild. Online, people engaged with our keepers and learned some unique animal facts, like why flamingos are pink and how tortoises can snooze underwater.

Bringing Nature to You: WCS Virtual Zoo

The [live cams at our parks](#) brought an array of wildlife right into people's homes, offices, and schools. People delighted in watching ring-tailed lemurs scampering at the Bronx Zoo's *Madagascar!* exhibit, and sharks gliding in the Canyon's Edge exhibit at the New York Aquarium. Bringing wildlife and people still closer together were our Wild Encounters, through which people visited with cheetahs, giraffes, penguins, and more—all either online or in person.

Helping Our Communities Get Vaccinated

During summer 2021, WCS's New York Aquarium and Bronx Zoo partnered with the City of New York to provide safe and accessible COVID-19 vaccines for our local communities. Through these sites, we helped to administer over 3,000 COVID-19 vaccine doses to families.



At the New York Aquarium, WCS connects visitors with the diverse ocean ecosystem in their own backyard, highlighting the types of field research our scientists are doing right offshore in the waters of New York.

"I learned so much and can't wait to come back again. I truly appreciated all the people who took the time to answer all our questions and share their love of these animals and the conservation of these amazing creatures."

—BRONX ZOO VISITOR



Launching Wildlife School Online

With many students struggling to adapt to online learning, WCS provided much-needed [virtual education resources](#) for use in the classroom or at home. Children from around the world "met" animals and virtually explored our parks and global field programs. Virtual science fairs showcased student research projects, and immersive visits to our exhibits and activities kept children pre-K through 12th grade engaged in science. We worked with schools and after-schools in underserved communities to tailor programs at no cost, and provided open-source modules for families.

Imagining Yourself as a Conservation Hero

Our [Conservation Heroes website](#) showcased the diverse role models at WCS—from New York City-based Zoo Veterinarian Susie Bartlett to Marysa Sibarani, a Forest Animal Researcher in Indonesia—with the goal of inspiring more young people to envision themselves as future leaders. Through our Conservation Careers curriculum, young people explored various jobs in conservation through role play and quizzes.

Wildlife Camp Online—A National Model for Digital Learning

Our 2020 online summer camp included registrants from 30 states and 6 countries, and became a national model for innovative digital learning. From visits with animal keepers in our city parks to conversations with staff experts as far away as Mongolia, the team created a one-of-a-kind summer enrichment experience. To sustain our wider reach, in 2021 we developed a hybrid model combining in-person and virtual experiences at our parks.

Looking Ahead → → →

As our natural world faces increasing threats such as climate change and habitat loss, it is more urgent than ever before to inspire people to protect wildlife. To reach more people and engage them in conservation, we will innovate, expand, and strengthen our conservation science programming, building forward-looking, hybrid models that incorporate both in-person and digital experiences.

Telling Stories of Recovery on *The Zoo*

Our flagship Bronx Zoo and four other parks welcome 4 million guests each year. But millions more across the US and around the world—who might not otherwise get a chance to visit our parks—gain a window into WCS's work through Animal Planet's award-winning docuseries [THE ZOO](#).

With the fifth season premiering in October 2021, viewers will get a behind-the-scenes look at how our expert staff provide care for the 17,000 animals at our parks, while helping advance the conservation of species in the wild. Below are just a few examples of the inspiring stories that will be featured in this new season.

Ensuring Top-Tier Vet Care

In its newest season, **THE ZOO** follows several stories of animals receiving innovative and life-changing veterinary care they could not have received in the wild.

How do gorillas deal with a toothache?

Wild animals do their best to hide injuries to avoid showing vulnerabilities that predators or competitors might key in on. Yet our watchful Bronx Zoo keepers noticed a subtle change in male gorilla Babatunde's behavior when he was eating, and found the problem to be a cracked tooth. Our zoological health experts determined he needed a root canal to alleviate his discomfort. Babatunde is now back with his troop, eating and behaving normally.



Baby bison, big surgery

A bison calf at the Bronx Zoo was born with a bowed leg—which would have been problematic when the calf grew into a 1,000+ pound adult. Following a complex surgery to straighten out her leg, she was immediately able to rejoin her mother. Soon after, they were reunited with their close-knit herd.



Breeding Vulnerable Species

THE ZOO educates people about zoo-based breeding programs and how they are critical to maintaining diverse and self-sustaining populations in parks accredited by the Association of Zoos and Aquariums.

Helping Aurora the tiger find a mate

Amur tigers are classified as Endangered. Only about 500 individuals remain in their native habitat in the Russian Far East and northern China. In 2021, the Bronx Zoo received a female Amur tiger named Aurora from the Minnesota Zoo as part of the Association of Zoos and Aquarium's Species Survival Plan program. This season shows how Aurora and her new companions at the zoo all have different personalities and paces at which they acclimate to change. We are hopeful that Aurora and her potential mate Aldan will breed and produce a litter of healthy cubs.



A "pig happy family"

The Bronx Zoo has a long history of breeding babirusas, a charismatic and somewhat unusual-looking species of wild pig native to Indonesia. Five-year-old Ivy recently joined the zoo's babirusa group, and she and eight-year-old Ken have bred and produced a healthy piglet named Sprout. Including Ivy's baby, 32 babirusa piglets have been born at the Bronx Zoo since 1986.



MEET A WCS EXPERT

I care for sea lions, otters, harbor seals, and penguins at the New York Aquarium.

John Scott

NEW YORK AQUARIUM MARINE MAMMAL AND BIRD KEEPER



Q: What is your typical day?

JOHN: We begin at 7:00 am with frozen fish: sorting and weighing the restaurant quality fish we feed our animals. We then do three or four rounds of training, with cleaning and project work in between. I care for the California sea lions and otters, harbor seals, and African penguins. The training mostly replicates their behaviors in the wild, but we also include a few human behaviors, like waving, and show our close bonds with the animals to maximize the connection our visitors feel.

More people visit zoos and aquariums in the US than all professional sports combined, so the potential to help wildlife is endless. I want to give visitors the kind of clarifying moment I had as a kid, when I first held a big green iguana named Marv. I felt such a gut connection that I knew protecting animals would be my life.



Q: What are some of your most memorable moments?

JOHN: Well, I love every moment with our 800-pound sea lion Clyde. He's so chill. No one would ever describe me as chill, so it's a nice yin and yang. And he's such a gentle giant. We worried about how he'd do with our little six-month pup Marco, who was a tenth his size, but they played together all the time. And he's always engaged; it's cool to see the gears turning in that big head of his. I'll also never forget this Memorial Day, when with about 200 visitors I got to watch our sea lion Arianna give birth. It was incredibly moving and I thought, 'Wow, this is my JOB!'

Q: What are your hopes for the future?

JOHN: I hope to be the role model I never had, growing up as a gay kid interested in wildlife. I want to open doors for others left outside. The usual career path—beginning as I did with unpaid internships—closes out anyone that can't afford that. Paid entry-level jobs like those at our Children's Zoo at the Bronx Zoo help grow the diverse groups of leaders the world needs.

Environmental issues impact all of us. Burning fossil fuels harms our animals through climate change but also causes high rates of asthma in my Queens neighborhood. Our work at WCS is all about legacy, what we leave for the future. I want ours to be the generation that stopped species extinctions and climate change.

PROTECTING NATURE'S STRONGHOLDS

Albatrosses on the vast, remote, and rugged Patagonian Steppe. In WCS's four decades of leadership across coastal Patagonia, we have helped the governments of Argentina and Chile create numerous protected areas to conserve this stronghold for seabirds, elephant seals, whales, dolphins, and sharks.

Vast wilderness areas may seem far removed from our daily lives, yet the survival of life on Earth depends on preserving the Congo basin's tropical forests, the Arctic and boreal forests, the coral-studded reefs of Melanesia, and many other intact places around the world on land and sea. But today, less than a quarter of our planet remains wild.

That is why WCS has made a commitment to conserve 60 make-or-break strongholds across the globe.

[Nature's Strongholds](#) are the planet's remaining areas of protected wilderness, and WCS's core mission is to fully conserve, restore, and rewild these places and the countless species that depend on them, including our own. Our goal is to safeguard half of life on Earth by winning strong national and international commitments to secure these strongholds, which span over 9.6 million square kilometers—more than 2.5 times the size of the United States.

In this section, we spotlight three strongholds where we have achieved progress, thanks to our science-led approach and longstanding trusted relationships with Indigenous Peoples, local communities, and government partners. We now aim to scale up our successes for still greater impact. WCS is helping to rally the global community around the ambitious goal of protecting 30 percent of our planet by 2030—prioritizing intact places with the greatest biodiversity and climate change resilience, and turning commitments into action.

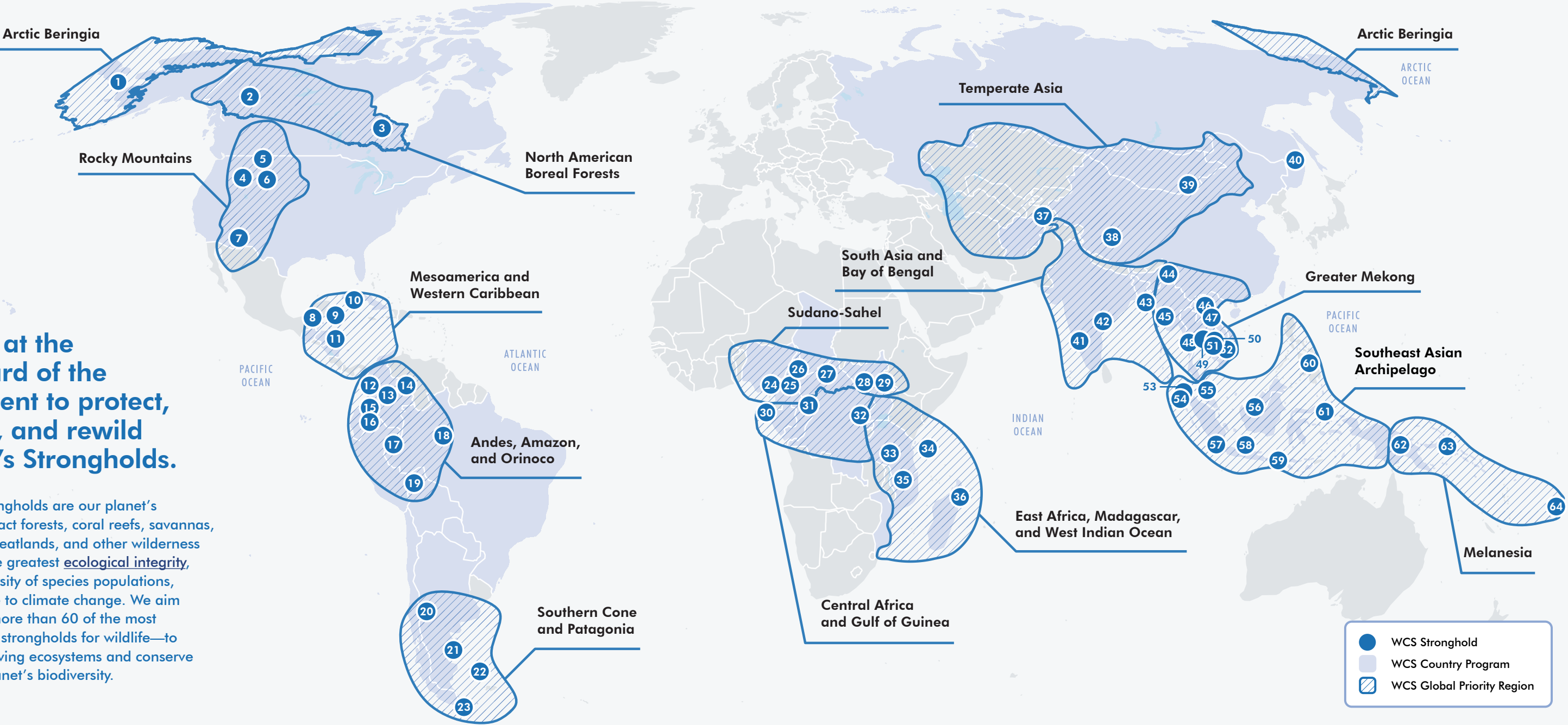
“Nature's Strongholds contain disproportionate amounts of the planet's wildlife and intact ecosystems—and are also our greatest asset in tackling climate change, the collapse of biodiversity, and zoonotic pandemics.”

— JOE WALSTON

EXECUTIVE VICE PRESIDENT,
GLOBAL CONSERVATION PROGRAM

WCS is at the vanguard of the movement to protect, restore, and rewild Nature's Strongholds.

Nature's Strongholds are our planet's remaining intact forests, coral reefs, savannas, mangroves, peatlands, and other wilderness areas with the greatest ecological integrity, size and diversity of species populations, and resilience to climate change. We aim to conserve more than 60 of the most extraordinary strongholds for wildlife—to sustain life-giving ecosystems and conserve half of the planet's biodiversity.



- Arctic Beringia**

 - 1 Arctic Beringia

North American Boreal Forests

 - 2 Northern Boreal Mountains
 - 3 Ontario's Northern Boreal

Rocky Mountains

 - 4 Salmon-Selway Wilderness
 - 5 Crown of the Continent
 - 6 Greater Yellowstone
 - 7 Greater Gila
- Mesoamerica and Western Caribbean**

 - 8 Maya Forests
 - 9 Mesoamerican Reef
 - 10 Ciénaga de Zapata
 - 11 Moskitia

Andes, Amazon, and Orinoco

 - 12 Andes-Chocó
 - 13 Central Andes
 - 14 Savannas of Orinoco
 - 15 Upper Putumayo
 - 16 Yasuní
 - 17 Maraón-Ucayali
- 18 Amazonas

19 Madidi-Tambopata

Southern Cone and Patagonia

 - 20 Payunia - Laguna Blanca
 - 21 Valdes
 - 22 Blue Patagonia
 - 23 Tierra del Fuego
- Sudano-Sahel**

 - 24 Cross River Complex
 - 25 Mbam Djerem-Deng Deng
 - 26 Boubia Ndjida-Sena Oura
 - 27 Manovo Complex
 - 28 Lakes-Western Equatoria
 - 29 Badingilo-Boma-Gambela

Central Africa and Gulf of Guinea

 - 30 Gulf of Guinea
 - 31 Ndoki-Likouala
 - 32 Okapi Kahuji-Biega Kabobo
- East Africa, Madagascar, and West Indian Ocean**

 - 33 Ruaha-Katavi
 - 34 Kenya-Tanzania Coast
 - 35 Niassa
 - 36 MaMaBay

Temperate Asia

 - 37 Greater Pamirs
 - 38 Changtang/Qinghai
 - 39 Gobi Steppe
 - 40 Northeast Asia Tiger Stronghold
- South Asia and Bay of Bengal**

 - 41 Western Ghats
 - 42 Central India
 - 43 Bangladesh Coast

Greater Mekong

 - 44 Northern Myanmar Forest Complex
 - 45 Rakhine
 - 46 Nam Et-Phou Louey
 - 47 Northern Annamites
 - 48 Tenasserims
 - 49 Eastern Thailand Forests
 - 50 Northern Plains
- 51 Tonle Sap Floodplain

52 Eastern Mondulkiri Forests

Southeast Asian Archipelago

 - 53 Gunung Leuser-Singkil
 - 54 Aceh-Weh
 - 55 Endau-Rompin Complex
 - 56 Batang Ai-Lanjak Entimau
 - 57 Bukit Barisan Selatan
 - 58 Karimunjawa
 - 59 Nusa Tenggara Barat
 - 60 Bohol Sea
 - 61 North Sulawesi Bogani-Nani Wartabone
- Melanesia**

 - 62 Papua New Guinea Highlands
 - 63 Bismarck-Solomon
 - 64 Fiji

Ndoki-Likouala: A North Star for Stronghold Conservation

In the late 1980s, WCS conservationists walked and canoed hundreds of miles through the [Republic of Congo's Ndoki-Likouala Stronghold](#) to survey its wildlife and forest habitat. In 1993, WCS helped the Congolese government establish Nouabalé-Ndoki National Park to protect one of the most biologically intact forest ecosystems on the African continent: more than 4,000 square kilometers of contiguous lowland rainforest, a vital stronghold for forest elephants, gorillas, and chimpanzees. Since then, we have collaborated with the Congolese government to conserve this land, and in 2014 entered into a public-private partnership that delegated WCS full management authority.

Today, Ndoki is one of the rare places in Africa where elephant and ape populations have stabilized or increased over the past 15 years, a stark contrast to population crashes seen across much of the two species' African range. How we have achieved our results illuminate WCS's pioneering approach, and has made Ndoki a paragon of the stronghold model.

Below are just a few highlights from the last year.

Stepping Up Patrols and Convictions

- ✓ As of March 2021, no elephants had been poached in the park for the past six months.
- ✓ WCS's Wildlife Crimes Unit played a critical role in identifying and dismantling criminal trafficking networks. From a conviction rate of zero for regional wildlife crime in 2015, we are now supporting prosecutors to achieve a 75 percent conviction rate. In the last two years, the rate of maximum-penalty convictions has doubled. Last summer, the most prolific elephant poacher and ivory trafficker in the area was the first to be [convicted in Congo's criminal court and sentenced to 30 years](#)—proof that we are gaining traction in stopping Congo's dangerous wildlife criminals.
- ✓ WCS grew Ndoki's trained ranger force and helped increase patrol coverage to more than 84,000 kilometers of crucial forest and

river habitat. In more than 150 patrols, rangers eradicated 116 illegal hunting camps, and seized 1,492 snares within the park and its periphery.

- ✓ WCS established aerial surveillance operations and introduced real-time communications technology.

116


Illegal Hunting
Camps Dismantled

1,492

Snares Seized

75%

Conviction Rate



Supporting and Empowering Local Communities During the Pandemic

The rise of COVID-19 magnified the struggles of the people and wildlife living at the periphery of the park. When the government declared a full lockdown at the start of the pandemic, the Nouabale-Ndoki National Park was declared an "essential service" to enable operations to continue. Because of this, [WCS Nouabalé-Ndoki community teams were able to conduct an ongoing COVID awareness campaign](#) and provide hand-washing stations to the villages of Bomassa, Kabo, and Makao. WCS also supported the provision of food and transport of community members to local markets in the absence of any other transportation, providing an alternative to bushmeat consumption, which saw a fourfold increase during lockdown. And we donated 4,000 pairs of gloves, 1,500 facemasks, and infrared thermometers to two health centers in the region.



ABOVE Elephants approaching a forest clearing, known as a "bai." Ndoki is one of the rare places on the continent where elephant and other wildlife populations have stabilized or increased over the past 15 years.

Activating Responsible Ecotourism Opportunities

WCS has launched a four-year program with the Congolese Government, in partnership with the Congo Conservation Company and the US Agency for International Development (USAID), to create the first professionally managed ecotourism operation, which could contribute an estimated 25 percent of the park's operating budget over the next 10 years. The partnership will enable us to:

- ✓ Build two eco-lodges in the park's periphery
- ✓ Train local communities in hospitality and management skills
- ✓ Diversify local livelihood opportunities away from a dependence on forest resources, and stimulate local economic development through job creation
- ✓ Fund new educational and health facilities in local communities through revenue sharing of tourism fees

Advancing Science-led Conservation

Using conservation criminology, [WCS and partners released a study](#) in the journal *Conservation Science and Practice* about the wild meat trade, finding that restaurants in urban areas in Central Africa play a key role in whether protected wildlife winds up on the menu. Working with restaurants can help build a community of informal wildlife guardians, complementing law enforcement and legislative action.

Looking Ahead → → →

We aim to further strengthen Ndoki's management and infrastructure, to keep wildlife populations stable and recovering over time. WCS will also apply the lessons learned in Ndoki and scale up our impact in other strongholds, such as DRC's Okapi Wildlife Reserve and Mozambique's Niassa Special Reserve. Our overarching strategy is to continue protecting intact ecosystems within, and beyond, protected areas.

Partnering to Secure the Gunung Leuser National Park and Its Surrounding Forests in Sumatra

Indonesia is home to an astounding 17 percent of the world's species, including the longest list of endangered species: 126 birds, 63 mammals, and 21 reptiles. In Sumatra, the [Gunung Leuser National Park](#) and its surrounding forests represent one of the last great intact wilderness areas on Earth, so the significance of this 26,000-square-kilometer haven is difficult to overstate.

Leuser's old-growth, biodiversity-rich forests and peatlands remain remarkably healthy and intact, acting as nature's lungs and helping to provide oxygen to the world. We need to act quickly to protect this biodiversity powerhouse and its essential ecosystem services that locally benefit more than 5 million people, particularly 862 villages around the national park.



For 15 years, WCS has been collaborating with [Indonesia's Ministry of Environment and Forestry \(MoEF\)](#) to protect the Gunung Leuser National Park and its buffer forest in the south and southeast part of this second largest protected area in Sumatra. Through our science-based approach, we have built a strong partnership with the national park management authority, collectively designing and rolling out effective interventions on the ground.

Drawing on best-in-class science, WCS partners with the Indonesian government to bolster formal habitat protections and support law enforcement operations.

To take just one example, within just the last five years, we worked with the Gunung Leuser National Park authority to stabilize the Sumatran tiger population in eastern Leuser by supporting 17 national park-led anti-poaching ranger teams. This has greatly increased the law enforcement effort, leading to a 37 percent reduction in tiger poaching. We have supported the MoEF in establishing five [Wildlife Response Units](#) that partner with local communities to create realistic solutions to prevent tiger attacks on livestock. Although we have seen 281 incidents of human-tiger conflict since 2012, there has been just one retaliatory killing of a tiger.

Looking Ahead → → →

This is a pivotal moment for the Gunung Leuser National Park and its surrounding forest area. With MoEF, several of our collective goals are to:

- Increase the Sumatran tiger population by 10 percent and grow populations of other threatened species.
- Define new and enhanced strategies to conserve biodiversity and support communities around the national park by rolling out an "Integrated Prevention Model."
- Reduce poaching and forest habitat loss across this vast landscape by a further 20 percent over the next five years.
- Continue to rapidly respond to community reports of human-wildlife conflict as a way to prevent retaliatory killings of threatened species, such as tigers and elephants.
- Install camera traps across a 1,000-square-kilometer core tiger area to monitor tigers and their prey in order to measure population trends and determine if adjustments are needed to the collaborative conservation strategy.

WCS Marine Protected Area Fund

Ocean ecosystems support a vast range of marine species as well as the livelihoods, nutrition, and well-being of hundreds of millions of people. But coral reefs, mangroves, seagrasses, and other marine habitats face unprecedented threats from overfishing, pollution, unsustainable resource extraction, and warming waters.

That is why WCS is working to secure stronger protections for the world's oceans. One of our key strategies is to support nations in creating Marine Protected Areas (MPAs), which have proven successful in conserving ocean strongholds. The [WCS Marine Protected Area Fund](#) has helped bolster protection of biodiversity-rich waters across the globe.

Established

2016

WCS Country Programs

26

New MPAs

53

Scope of
New Protections

437,875 km²



Empowering Women Fishers in Melanesia

WCS leads conservation programs in Fiji, Papua New Guinea, and Solomon Islands—countries which are part of the Melanesia region in the southwest Pacific. A unique and essential biodiversity stronghold, it provides nearly 11 million people with clean water, food security, livelihoods, and health benefits. The region's waters make up a cornerstone of the Coral Triangle—a critically important marine area containing 75 percent of the world's coral species and over 3,000 species of reef fish.

A new WCS-led study has shown that the Coral Triangle is surprisingly resistant to climate change-related heat spikes, making it a sanctuary for coral reefs that play a central role in marine ecosystems and human livelihoods. But the Coral Triangle can only survive over the long term if we can reduce other human pressures, such as overfishing and pollution.

How can we better manage small-scale fisheries in the Coral Triangle and beyond? A key part of the answer lies in [improving gender equality and inclusion within fisheries management](#).

Two recent studies that WCS conducted throughout Fiji, Solomon Islands, and Vanuatu highlighted that:

- ✓ Women fishers account for an annual catch of nearly 3 million tons of seafood a year, providing critical contributions to their household food and economic security. Yet their substantial contributions are not included in most official statistics, and therefore are unrecognized in fisheries management and policy development.
- ✓ When women are included in the planning, development, processes, and outcomes of small-scale fisheries management, these fisheries are more likely to be sustainable, and the benefits more fairly distributed.

- ✓ More quantitative information about the volume and size of fish and invertebrates harvested by women would greatly improve the sustainable management of key species within coral reef ecosystems.

Following these recent studies, WCS is collecting more data to help ensure women's catches are counted and included in all statistics, analyzing the outcomes of local management through a gender lens, and we are advocating for greater participation of women in fisheries management decisions and policies.

Looking Ahead → → →

Across our ocean strongholds, WCS is working to help secure new government commitments to protect 30 percent of our world's oceans by 2030; our work in Melanesia is a core part of this effort. In Fiji, WCS is supporting the creation of a network of 117 new near-shore *tabu* (no-take) areas within Locally Managed Marine Areas; we are also ensuring that women fishers from local communities are able to take leading roles in the management of these areas. In Papua New Guinea, WCS is working directly with women and other community members in the eastern part of the country to establish a new coastal MPA (2,500 square kilometers) and a new offshore MPA (5,000 square kilometers), both of which will be critical for community livelihoods as well as conservation of key fish and ray species.

MEET WCS'S INDIGENOUS ALLY

“As a member of the Indigenous Tacana People, I work with WCS to protect our lands and raise public awareness of their rich biodiversity.”

Trinidad Yacira Cartagena Terrazas

GUIDE FOR THE SAN MIGUEL DEL BALA
ECOTOURISM LODGE IN
MADIDI NATIONAL PARK, BOLIVIA



Q: Why is preserving the forest important for the Tacana?

YACIRA: Since the time of our ancestors, we have lived within nature. Without it, we cannot exist. Our “big house,” as we call it, is the source of our ancestral knowledge, of our medicines and food. We live by hunting, fishing, harvesting wild fruits from healthy forests; we settle alongside lakes and streams because they provide for our daily lives.

Q: How has WCS helped with that effort?

YACIRA: Ever since WCS's Rob Wallace and Lilian Painter first came to us more than 25 years ago, WCS has been an important ally to our 20 communities, and our main partner in collecting vital information about our territory. With their scientific support in counting and mapping our many plants and animals, butterflies, fishes, and reptiles, we were able to develop the ecotourism project I work on at the San Miguel del Bala Lodge. WCS also helped us develop materials about jaguars, giant otters, caiman, and other local species in Tacana, Spanish, and English.

Knowing where our animals live and move enabled my community to designate areas for specific activities: this zone for community tourism, that one for hunting or harvesting. This research also allowed us to determine how many fruits we could harvest, how often we could hunt agoutis or other animals and still see them in our tourism areas and sustain them for the long-term. Knowing how much territory each of our communities needs for subsistence also helped

us reclaim title to our land. WCS has even supported recovery of our Tacana native language.

To work together like this, we had to overcome great mistrust. At first, our people kept asking: ‘Why are they here? What do they want? Why should we limit our traditional hunting and fishing?’ WCS organized workshops to listen, and to answer these questions. After many workshops, we learned to say ‘We want this’ and ‘We do not want that’ in a beautiful and collaborative way.

Q: What are your hopes for the future?

YACIRA: As the only woman guide in Bolivia's Amazonian region, I hope WCS will continue to support the development of our women into leaders defending the forests and heritage we've fought for, particularly in the face of new threats like gold mining that can damage our rivers and fisheries. Building respect for our Indigenous territory, culture, and voice is critical to preserving Madidi and our communities.

Our people have adapted and continue adapting to change, from participating in scientific monitoring to welcoming tourism. By combining our traditions and knowledge with the skills and reach of WCS, we have been able to improve our well-being and create work opportunities for our young people within the forest community, so they don't have to leave. Yet, we still have much to do to protect Madidi. As a person, a woman, a mother, a wife, and a spokeswoman of the Tacana nation, I ask: Let's continue to walk forward together, hand in hand.

Madidi-Tambopata is one of the last intact landscapes on Earth. This unrivaled biodiversity haven is an important carbon sink that fortifies our natural defenses against climate change. WCS's scientific expertise and the ancestral knowledge of the Tacana People have come together to strengthen protections for Madidi, reduce deforestation, and protect vital species.



NATURE-BASED SOLUTIONS TO THE CLIMATE CRISIS

We are seeing intensifying signs of climate change all around us, with profound impacts on human well-being and the wildlife and wild places that WCS protects. The climate crisis is the consequence of our broken relationship with nature—but [nature could also be a powerful ally in the fight against climate change](#), if we choose to tap its immense potential. Indeed, nature-based solutions can provide nearly one-third of the action we need by 2030—quickly and cost-effectively—complementing other necessary climate solutions and buying time for them to be effective at scale.

Intact forests are particularly critical because they are massive carbon sinks for the planet. WCS research has revealed that the benefits of saving intact tropical forests are six times higher than current methods assume. But such ecosystems are disappearing fast. In this section, we share highlights from WCS's drive to stop the loss of highly intact forests by 2030, securing a major essential sink and ensuring that the 510 gigatonnes of CO₂ these forests store stay out of the atmosphere. We also share stories about WCS using cutting-edge science to help wildlife, coral reefs, and communities adapt to our changing world.

“WCS is leading the way on protecting our planet’s intact forests—and helping others understand why this is essential to meeting global climate goals.”

—CHRISTIANA FIGUERES

EXECUTIVE SECRETARY OF THE UN FRAMEWORK
CONVENTION ON CLIMATE CHANGE (2010-16)

WCS Climate Action

WCS uses cutting-edge science to understand the impacts of climate change, plan conservation for a rapidly changing world, and devise nature-based solutions to protect people and the environment.

This map highlights how we are leading the charge to curb climate change, help wildlife adapt, and mobilize strong climate policies at national and international levels.

Advancing Climate Science to Protect Coral Reefs

WCS is using robust science to evaluate the impacts of climate change on coastal ecosystems and forests. One example is MERMAID, the world’s first open-source coral reef data platform. This technology, developed by WCS and partners, enables conservationists to assess climate impacts on coral reefs and transform data into action. In countries like Fiji, information from MERMAID flows from scientists to local communities so they can track their progress toward protecting their vital marine resources.

1 FIJI

Protecting Intact Forests as Carbon Sinks

To assess the health of forests, WCS developed a first-ever global metric to better understand such values as how much carbon a forest stores and its importance to local communities. WCS has used this Forest Integrity Index to ascertain which forests are essential to conserve—such as those within the ultradiverse Amazon and Congo basins.

We are protecting intact forests and other high-integrity ecosystems to cost effectively and swiftly address the climate crisis. WCS has a strong track record in 25 countries that are home to highly intact tropical forests which serve as extraordinary “carbon sinks.”

2 AMAZON BASIN 3 CONGO BASIN

Spotlighting REDD+

Through a project to Reduce Emissions from Deforestation and Forest Degradation (REDD+) within [Cambodia’s Keo Seima Wildlife Sanctuary](#), WCS and partners have reduced over 16 million tonnes of CO₂ emissions since 2010 by avoiding the loss of approximately 22,000 ha of forest, an area four times the size of Manhattan. Over the project’s lifetime, WCS has supported the sale of over \$31 million of carbon credits for conservation and community development, including helping local people to secure title to their lands and practice sustainable agriculture.

4 KEO SEIMA, CAMBODIA

Helping Wildlife and Communities Adapt

Around the world, WCS is helping people, ecosystems, and species adapt to the impacts of climate change. For example, we have identified the coral reefs that are most likely to survive the increased heat stress of our planet in the coming years, and are working with partners worldwide to win protections for these vibrant, resilient reefs.

In North America, we have supported more than 100 projects through the [WCS Climate Adaptation Fund](#), helping species such as seabirds and walrus adapt to climate impacts as sea levels rise.

And in places like Rwanda, WCS is leveraging support from the Green Climate Fund to reduce or limit greenhouse gas emissions while improving community resilience to climate impacts.

5 NORTH AMERICA 6 RWANDA

Strengthening Global Policy

WCS is working to ensure that nature-based climate solutions are at the forefront of global decision-making. In fall 2021 we are playing a key role in important opportunities to elevate and advance nature-based solutions, such as at the UN Climate Change Conference in Glasgow and the UN Convention of Biological Diversity in Kunming, China. These meetings will set the agenda for curbing climate change as well as restoring nature—and with input of WCS’s cutting-edge science, countries have now agreed to prioritize ecosystem integrity in setting goals and targets.

7 KUNMING, CHINA 8 GLASGOW, UK

Engaging People on Climate at WCS Parks

WCS is strengthening content on climate impacts and solutions for visitors to our New York zoos and aquarium, including through in-park signage and interpretation, and in our education programs. At the New York Aquarium’s new [Spineless](#) exhibit, for example, we call out easy ways that our guests can help reduce pollution, destructive fishing, and climate change impacts—such as eating a more plant-based diet, choosing sustainable seafood options, and keeping trash out of storm drains.

9 NEW YORK, US



Unlocking the Power of Intact Forests

The planet's intact forests pump out oxygen and hold vast stores of carbon in their biomass. But WCS science shows that only 40 percent of the world's remaining forests are intact—that is, not significantly disturbed by human activity. We lost nearly 10 percent of the planet's last blocks of these forests between 2000 and 2016 alone to road building, mining, logging, settlement, fire, agricultural expansion, and infrastructure development. Overhunting of ecologically critical wildlife species further erodes the health of these unique places. If destruction continues at the current pace, at least half of what we have now will be gone by 2100—dramatically accelerating the rate of climate change.

WCS has an unparalleled long-term field presence in 25 tropical forest countries supporting 459 million hectares of highly intact forest, and trusted working relationships with government, Indigenous, and community partners in these countries.

In the past year alone, WCS has helped secure, expand, or improve protection for more than 2.5 million hectares of intact forests in 7 countries.

Securing the Critical Connection in the Maya Forest Corridor

Mesoamerica's five great forests are home to nearly 8 percent of the planet's biodiversity. They provide clean water, clean air, and food to 5 million people—and hold nearly half the region's forest carbon.

The Maya Forest, extending through Belize, northern Guatemala, and southeastern Mexico, is the largest of the five: a biodiverse ecosystem that is critically important to the local Maya peoples. Within Belize, the Maya Forest Corridor is the last forested connection between the magnificent Maya Mountains of Southern Belize and the rest of the 4 million-hectare Selva Maya Forest.

With WCS input, the government of Belize announced new plans to protect the corridor in 2020—but expanding sugar cane development threatened key areas. To forestall those threats, WCS worked with a strong coalition of partners to lay the political, social, and financial groundwork to purchase and conserve the most critical parcel of land at risk: a 30,000-acre property that is core habitat for jaguars and other species. This area also holds globally important carbon stores and

protects the water quality of the Belize River and Mesoamerican Barrier Reef.

We will work to secure the remaining properties to finalize the corridor, which will connect 93 percent of Belize's terrestrial protected areas, holding together Mesoamerica's largest remaining forest.

Advancing Science to Catalyze Action

All forests are not equal. In order to protect those forests with the greatest biodiversity, climate, and social values, we must first be able to identify them. That is why WCS and partners created the first-ever [global metric of forest integrity](#). Now the data is available to all—and will help inform targeted action to conserve, manage, and restore intact forests.



ABOVE Intact forests provide vital climate benefits as well as critical habitat for wildlife, such as this jaguar in the Maya Forest. WCS is leading the way toward ending all intact forest loss by 2030.



Canada's boreal forests (left) and northern peatlands (below) are some of the richest carbon sinks and strongholds for wildlife on the planet. WCS is protecting them in partnership with Canada's government and Indigenous Peoples, for whom these ecosystems hold great cultural and spiritual significance.



Safeguarding Canada's Boreal Forests

One of the largest remaining intact forests in the world, the far northern Canadian boreal region has healthy ecosystems with a full suite of top predators including wolves and grizzly bears.

These forests have an astounding ability to store carbon—nearly twice as much as all of the world's tropical forests combined—and are also essential to the culture and livelihoods of Indigenous Peoples who have lived in them for millennia.

But pressure is growing to push new mines, roads, and forestry operations into intact areas. To counter those pressures, WCS is providing technical support to the land use planning efforts led by the Indigenous Peoples who co-govern and steward the land and resources. This partnership has already protected 80 percent of the Peel Watershed in Yukon, 67,000 square kilometers of wilderness that are the spiritual heartland for the four First Nations whose traditional territories overlap the area.

Promoting Peatlands as Climate-Fighting Powerhouses

[The peatlands of Canada's Northern Boreal](#) region hold major stores of carbon in their soils, formed by accumulation and decay of waterlogged plants and mosses over thousands of years. Since 2004, WCS has been working in the Hudson Bay Lowlands, the

second largest peatland in the world—equivalent to the size of Spain. We are urging the Canadian government to invest in Indigenous Guardians to help monitor and protect the Lowlands; and to ensure that peatlands are no longer overlooked in climate policy decisions.

Looking Ahead →→→

WCS seeks to halt intact forest loss by 2030. Our strategy is to:

- Advance rigorous science for measuring and valuing intact forests so their value can be recognized and incorporated into national and global commitments.
- Catalyze global action by securing new policy commitments, funding, and financial mechanisms that incentivize and reward intact forest conservation, working with forest champion countries.
- Accelerate and scale up protections in the world's most important intact forest countries—where the carbon value and projected losses are greatest—together with community, Indigenous, and government partners.

HELPING SPECIES AND COMMUNITIES ADAPT TO CLIMATE CHANGE

As the impacts of climate change degrade ecosystems, disturb economies, and threaten human life at a greater rate than ever before, there is heightened urgency to help animals, habitats, and people adapt and build resilience to these impacts over the long term.

WCS is advancing on-the-ground adaptation projects globally in close partnership with Indigenous Peoples and governments—from ensuring that species have the space and ecosystem integrity they need to thrive, to making forests more resistant to wildfires by helping communities adapt how they earn their livelihoods.



Strengthening Climate Resilience through Community-Led Forest Restoration



The three national parks within Rwanda's Congo Nile Divide region—Volcanoes, Gishwati Mukura, and Nyungwe—are home to dozens of threatened species, including chimpanzees, golden monkeys, owl-faced monkeys, and mountain gorillas.

But the Congo Nile Divide as a whole is extremely vulnerable to climate change, and climate change impacts—amplified by land conversion for agriculture and over-harvesting of fuelwood—have severely degraded its forests. Outside of the national parks, the region's remaining forest fragments are too disconnected for species to migrate in response to changing climatic conditions, and too small to sustain essential ecosystem services for people.

By building capacity among local communities to improve forest management and restoration within the Congo Nile Divide, WCS aims to create forest corridors that will strengthen climate resilience for Rwanda's wildlife, people, and national economy. We are helping more than 300,000 local people transition to more climate-resilient and productive livelihood models, which will reduce their exposure to flash floods, landslides, and soil erosion, while increasing crop productivity.

To take just one example: [WCS is promoting sustainable beekeeping in this region](#) by working directly with 350 beekeepers to modernize beekeeping practices. This is crucial because during prolonged droughts caused

by climate change, traditional methods of wild honey collection have sometimes caused catastrophic forest fires, further degrading the integrity of remaining forests. By scaling this work up to include more than 4,000 beekeepers, we can reduce fire risk while significantly increasing farmers' incomes from honey production.

Looking Ahead → → →

Over the next five years, we seek to further improve forest management in the Congo Nile Divide and deliver additional nature-based benefits to nearly 1.4 million people. For example, we will work to lower sedimentation levels and improve water quality by helping Rwanda produce cleaner, cheaper hydropower energy. We estimate that we can help sequester more than 5 million tonnes of CO₂ equivalents by 2050—keeping Rwanda's national CO₂ emissions negative throughout this time period. Through forest restoration, continued biodiversity monitoring, and ecotourism initiatives, we can secure a resilient future for the Congo Nile Divide's mountain gorillas and other iconic species.

LEFT Despite threats from climate change, habitat loss, poaching, and disease, the world's mountain gorilla populations have doubled over the last several decades. WCS's history of work with mountain gorillas is long and distinguished, and includes helping to establish mountain gorilla ecotourism in close partnership with Rwandan communities.

Guiding Climate Adaptation Efforts in the Changing Arctic

North America's boreal and Arctic regions contain some of the world's greatest wildlife aggregations and remaining expanses of intact ecosystems. But the climate crisis is hitting these strongholds harder and faster than anywhere else. The Arctic has warmed about twice as fast as the rest of the planet.

In the far North, many species such as polar bears, caribou, wolverines, walruses, seals, and migratory birds are being forced to adapt to profoundly different conditions. Humans are also adapting to this warming world, and some of those adaptations—including creating new shipping lanes where sea ice has melted—are increasing impacts on species already having difficulty surviving.

WCS is working to help Arctic species adapt in sustainable ways, and partnering with the region's Indigenous Peoples who rely on the Arctic's incredible wildlife and resources. For example, WCS is mapping the location of walruses in the Arctic as they adapt to climate change. Female walruses and their calves have had to move to land due to the loss of summer sea ice, and by doing so are closer to coastal villages and shipping lanes. With this WCS-supported monitoring data, real-time advisories can go out to mariners and airplane pilots to avoid areas where these iconic, at-risk animals are present across the Alaskan coastline.

Looking Ahead →→→

Across North America, we seek to leverage our cutting-edge science, longstanding commitments to the places we work, and enduring partnerships with governments as well as First Nations and Indigenous communities to strengthen local stewardship and policy, and ensure these extraordinary ecosystems adapt and survive. To protect Arctic wildlife, we will advance [monitoring techniques](#) and lay the groundwork for new protected areas and other conserved areas that benefit both wildlife and people. We will also work with partners across the globe to monitor and protect the millions of birds that come to the Arctic to breed each summer, whose migratory habitats are under threat due to development and climate change.



WCS research on corals in the Western Indian Ocean has helped prove the existence of climate refuges that are poised to survive even as water temperatures rise. Recent insights on climate resilience have enabled our scientists to identify the coral reefs around the globe where we can be successful and have a sustained conservation impact.

Identifying and Protecting Climate-Resilient Corals

Half a billion people rely on coral reefs for food security and cultural traditions. Yet as climate change causes ocean waters globally to heat up and become more acidic, and sea levels to rise, the vast majority of coral reef ecosystems are at risk.

WCS is leading efforts to scale up global monitoring for sensitive corals—and targeting conservation efforts to those reefs with the best chance of surviving climate change. There is reason to be hopeful: in late 2020, WCS scientists discovered an incredible climate refuge within a rare ocean cool spot along East Africa's Kenya-Tanzania coast after analyzing data we and our partners collected over three decades. Despite its modest size, we found that this cool spot is protecting large populations of corals from thermal stress, bleaching, and mortality, and therefore is providing a safe haven for vulnerable marine species. [If well-managed, this region can serve as a sanctuary for threatened biodiversity](#) while providing high yields of foods central to the region's unique cultural heritage.

Looking Ahead →→→

Building on East African research and a similar study in Asia's Coral Triangle, WCS scientists are making the case for coral reef protection globally, and showing that vulnerable species can survive climate change. We will work to identify similarly resilient environments and reefs across the world's oceans, and encourage our government and community partners to focus conservation efforts on these safe havens.

ADVANCING CONSERVATION WITH PUBLIC-PRIVATE INVESTMENT

We are deeply grateful to our generous private and public funders for their strong support and partnership, which enables us to deliver on WCS's vital mission. This was especially true during the pandemic, when WCS, along with so many organizations and individuals, faced unprecedented hardships.

WCS's parks were closed for months during the pandemic, shrinking a critical part of our attendance-based revenue. Despite this, we ensured the health and well-being of the animals in our care, as well as the safety of our staff. We also helped people connect to nature virtually when it was not possible to attend our parks in person—all while protecting hard-won conservation gains in the 60 countries where we work.

Our longstanding public-private partnership with New York City and New York State spans 125 years. This partnership enables WCS to advance science learning across the urban landscape and is a driving force behind our capital upgrades, animal care, and operations.

WCS's track record of sustained conservation results also makes us a trusted partner of governments around the world. In FY 2020 (July 1, 2019–June 30, 2020), our global conservation programs received substantial support from more than 15 government funders, including the US, Germany, France, the UK, and Norway, as well as from 13 multilateral agencies such as the European Union, Global Environment Facility, Blue Action Fund, United Nations Development Program, World Bank, and Food and Agriculture Organization.

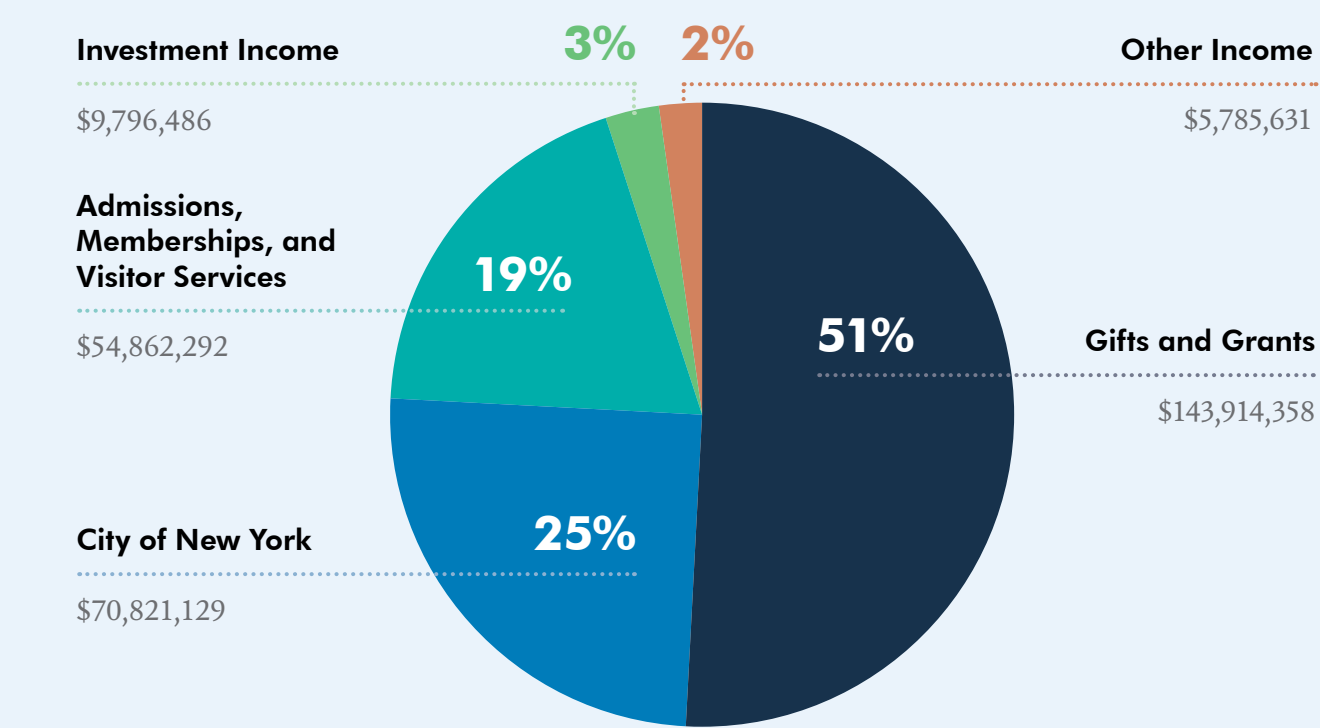
Without private philanthropy, WCS would not be able to accept these funds. Each dollar we receive from private donors allows us to leverage and put to work at least five dollars of additional funding toward the programs and operations described in this report.

We hope you feel proud of what we have accomplished together. Thank you.

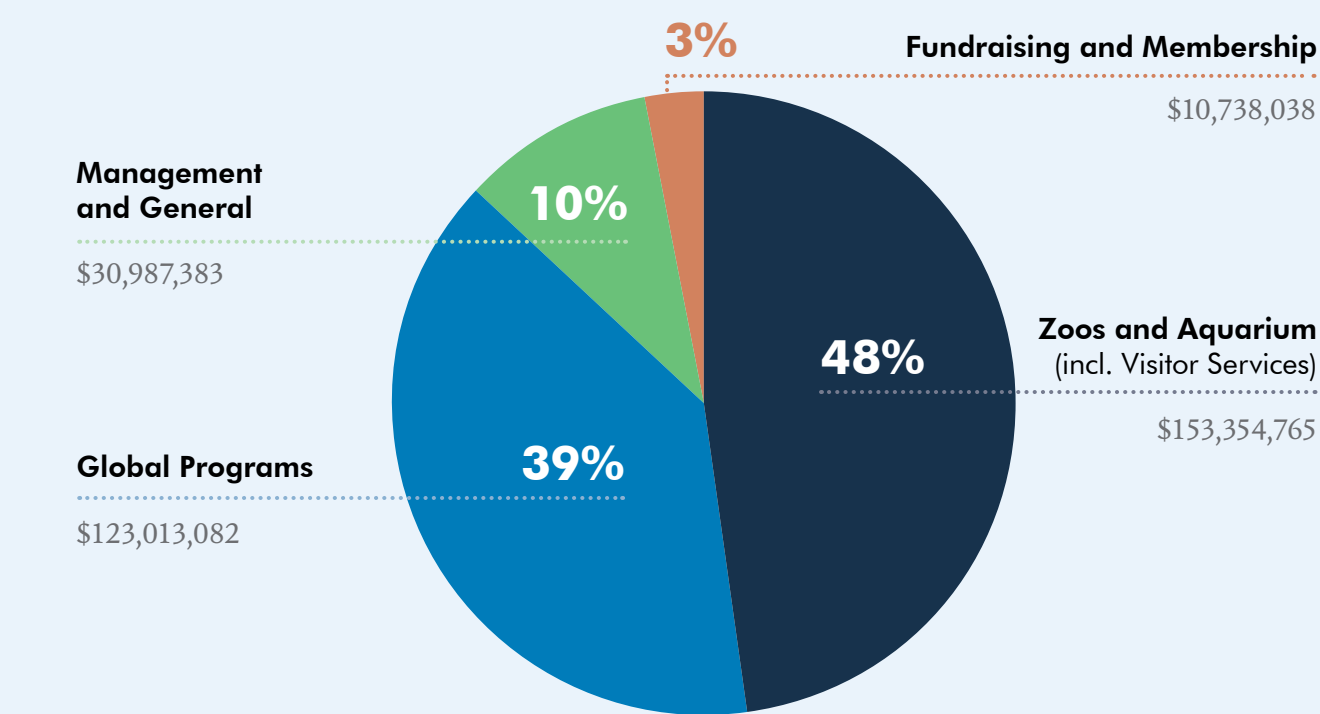


Financial Report

2020 TOTAL REVENUE (\$285.1 MILLION)



2020 TOTAL EXPENSES (\$318 MILLION)



STATEMENT OF ACTIVITIES (JUNE 30, 2020 AND 2019, IN THOUSANDS)

2020 TOTAL REVENUE (\$285.1 MILLION)	2020	2019
Bequests	6,585	1,112
Gifts and Grants	106,332	75,397
City of New York	70,821	101,823
Federal agencies	30,997	14,936
Gate and Exhibit Admissions	25,950	41,403
Visitor Services	19,192	29,884
Memberships	9,720	15,894
Investment Income	9,796	19,863
Other Income	5,786	7,870
Total Revenues	\$ 285,180	\$ 308,181
2020 TOTAL EXPENSES (\$318 MILLION)		
Program Services		
Zoos and Aquarium	153,355	136,410
Global Programs	123,013	120,480
Management & General	30,987	29,118
Fundraising and Membership	10,738	11,601
Total General Operating Expenses	\$ 318,093	\$ 297,609

CONSOLIDATED BALANCE SHEETS (JUNE 30, 2020 AND 2019, IN THOUSANDS)

ASSETS	2020	2019
Cash and cash equivalents	\$ 52,700	\$ 40,658
Miscellaneous receivable	3,596	5,044
Receivable from the City of New York	88,310	77,334
Receivable from the State of New York	2,233	2,298
Receivable from Federal sources	10,380	12,376
Contributions receivable	9,137	7,490
Non-US governmental and bilateral grants and contracts receivables	11,784	17,932
Private organization grants and contracts receivables	20,016	25,294
Inventories	2,898	2,658
Prepaid expenses	4,466	4,035
Advances to sub awardees	2,968	—
Investments	451,590	466,794
Amounts held in trust by others	1,780	1,858
Funds held by Bond Trustee	283	3,122
Property and equipment	453,305	440,746
Total Assets	\$ 1,115,446	\$ 1,107,639
LIABILITIES AND NET ASSETS		
Accounts payable and accrued expenses	\$ 45,976	\$ 49,374
Grants and contracts liabilities	35,601	22,884
Annuity liability	3,133	2,859
Line of credit	30,000	—
Loans payable	6,650	6,953
Bonds payable	133,338	134,011
Post-retirement benefit obligation	56,968	48,779
Total Liabilities	311,666	264,860
Net Assets (Without donor restriction)		
General Operating	(7,158)	(3,019)
Board Designated	71,724	101,083
Net investment in property and equipment	311,952	301,145
Total without donor restrictions	376,518	399,209
Net Assets (With donor restriction)		
Purpose restricted	154,565	172,058
Endowment Corpus	272,697	271,512
Total with donor restrictions	427,262	443,570
Total net assets	803,780	842,779
Total Liabilities and Net Assets	\$ 1,115,446	\$ 1,107,639

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



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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. 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 Sarah E. Walker 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 Leah Wu Fell at 718 741 1651 or LFell@wcs.org.

PLANNED GIVING

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.

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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