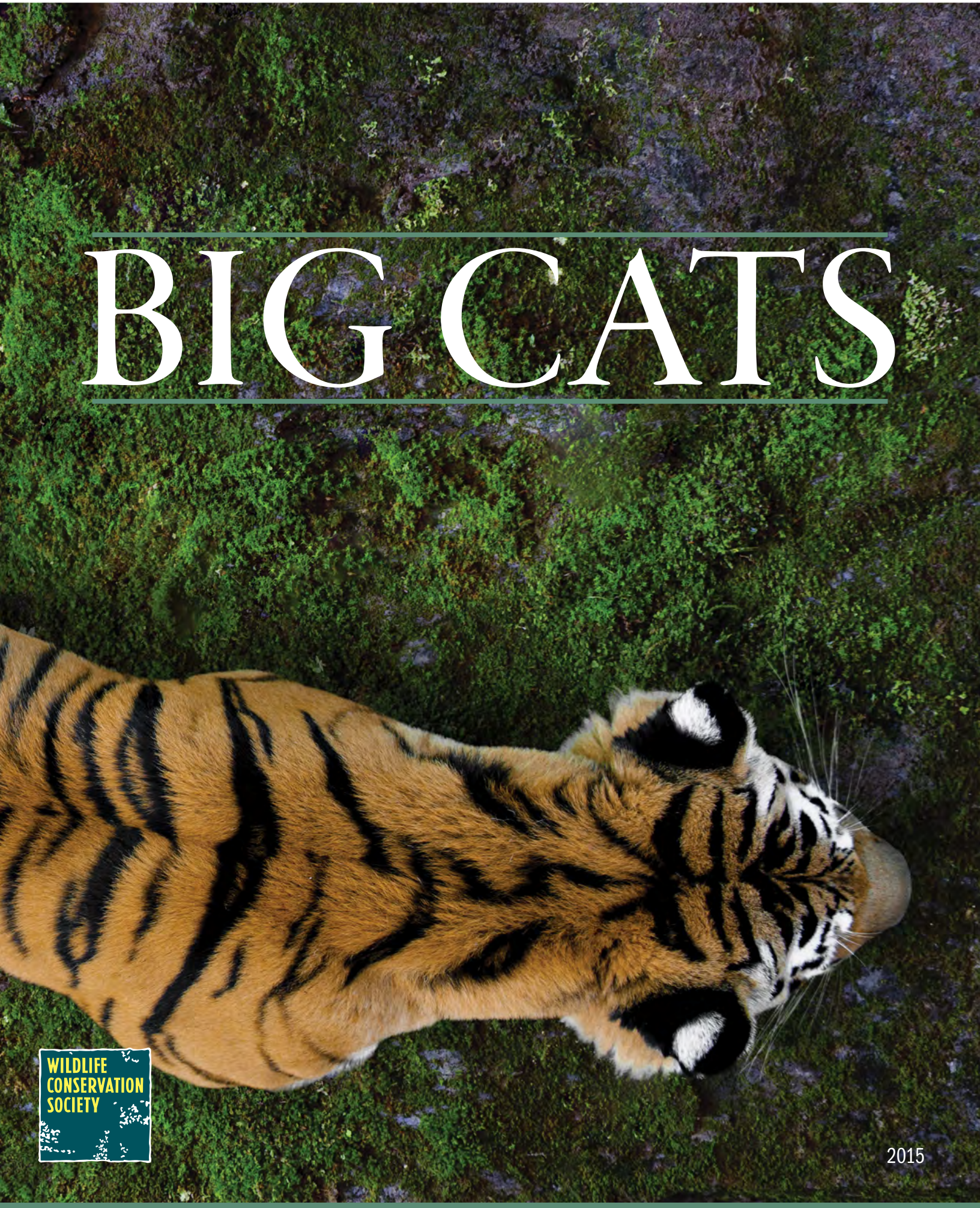
A WILDLIFE CONSERVATION SOCIETY PROGRESS REPORT

BIG CATS



WILDLIFE CONSERVATION SOCIETY

2015

Wildlife Conservation Society Progress Reports provide you, our generous supporters, with updates and insights on core conservation activities. Together, we are securing a future for wildlife and wild places.

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

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.

Scientists Deploy Camera Traps to Protect Tigers

Remote camera traps provide conservation scientists with valuable information that is difficult—and sometimes downright impossible—to gather by other methods. In Russia, India, and other tiger range countries, WCS teams are using this technology to monitor and protect wild tiger populations.

Counting tigers has proven challenging as these animals are elusive and often live in dense forest habitats, but monitoring is vital to successful conservation. We need to know how tiger numbers today compare to past tiger numbers, how many tigers are born each year, where tigers are living, and how many tigers move in and out of landscapes. We also need to investigate factors that could be driving population changes, including threats such as a lack of prey and available forest cover due to deforestation, and human disturbance such as poaching. Compared to other methods for counting tigers including analyzing found footprints, camera trapping has proven more accurate and reliable in determining whether our conservation action on the ground is working.

Every year for the past 20 years, WCS India Director Ullas Karanth, with his team of researchers, technicians, and community members, enters the forest of the Malenad Landscape in southwestern India to set up camera traps. Trekking up to 10 miles per day through the tropical landscape, they walk for months on end, setting up cameras at about 700 locations within nearly 2,300 square miles.

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Animals will trigger a camera trap's sensors when they pass within its range. Each year the traps capture over 15,000 images of tigers, leopards, dholes, elephants, deer, and other species that share this habitat. These provide a record of the tigers' stripes, which

Tiger Stamp Back on Sale

Congress has reauthorized the sale of the Save Vanishing Species postage stamp, also known as the Tiger Stamp. Once again, it is available for purchase at U.S. Post Offices.

The stamp costs 60 cents—11 cents more than a regular first-class stamp. The additional 11 cents from each stamp's sale go directly to the U.S. Fish and Wildlife Service's Multinational Species Conservation Funds, which support conservation programs to save tigers and other animals such as African and Asian elephants, great apes, rhinos, and turtles. Between September 2011 and December 2013 (when the stamp's original authorization expired), the U.S. Postal Service sold more than 25 million stamps, raising more than $2.5 million for conservation at no taxpayer expense.

Visit tigerstamp.com for more information or purchase stamps at shop.usps.com.

Above: A camera trap in the Russian Far East captured this rare photo of an Amur tiger family.

Below: A conservationist compares and counts tigers using camera trap photographs.

are unique to each individual. Scientists scan these photos using a pattern-matching software, which reads each tiger's stripes like a barcode. This technology, combined with innovative statistical modeling, allows highly-trained technicians to count the tigers photographed, so scientists can accurately estimate the total population of tigers within a given region. They have found that today, the Malenad Landscape is home to about 400 wild tigers—the world's largest living population.

Aside from facilitating tiger counts, camera traps also provide unique and fascinating insights into tiger ecology, behavior, and survival. In the Russian Far East, WCS and local partners captured photos of an entire family of Amur tigers—an adult male, adult female, and three cubs—traveling together. The 21 images depict the family passing in front of the same camera trap within a span of 2 minutes. These are the first-ever photographs of such familial, fatherly behavior in an adult male Amur tiger. As WCS Russia Director Dr. Dale Miquelle noted, "These photos provide a small vignette of social interactions of Amur tigers, and an evocative snapshot of life in the wild for these magnificent animals."

Camera traps can also help resolve human-tiger conflicts—key to successful long-term tiger conservation. Though the vast majority of tigers avoid humans and focus solely on natural prey species, conflict can occur when tigers cannot find natural prey and wander into human communities to prey on farmers' livestock. In retaliation, some tigers are shot to protect the livestock. On rare occasions, there are human fatalities. To keep both tigers and people safe, WCS teams are now using camera traps to zero

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in on individual "conflict tigers" and relocate them out of harm's way. In two recent cases involving the predation of livestock and a human fatality, both occurring near two of India's national parks, WCS scientists accurately identified the problem tigers, assisted in their capture, and helped relocate them to a nearby zoological park.

Despite the sobering threats to tigers, camera traps tell us these animals can thrive in protected areas. Our research has shown that over time, as conservationists and governments have increasingly worked side by side to reduce threats and bolster protection for tigers, populations in many protected areas have slowly but surely recovered from a handful of tigers just decades ago to hundreds today. As WCS continues to advocate for and protect tiger populations across nine countries, we hope to see this trend continue so that majestic wild tigers can thrive. WCS

1. Camera traps are readied for placement in the field.

2. WCS India Director Ullas Karanth sets up a camera trap.

3. A tiger investigates one of WCS's camera traps in India and provides a snapshot.

4. Conservationists use a pattern-matching software to analyze tiger stripes and identify individuals. Documentation of the right and left flanks of one individual tiger (**page 2**) helps scientists avoid double counting.

Saharan Cheetahs Deemed One of World's Rarest

A new WCS study has officially identified the Critically Endangered Saharan cheetah as one of the world's rarest carnivores, with less than 250 individuals remaining in the wild. This research provides the world's first quantifiable data on the cheetah subspecies and produced some of the world's only photos of the subspecies. Published in the scientific journal *PLOS ONE* in January 2015, the study is the culmination of the research of WCS conservationist Dr. Sarah Durant and scientists from the Zoological Society of London.

The Saharan cheetah is highly elusive. Until now, researchers had to rely solely on anecdotes and guesswork to understand the subspecies' behavior and needs. For this recent study, researchers set up infrared camera traps in Algeria's Ahaggar Cultural Park to closely observe the animal's ecology and behavior throughout its native habitat, which features extreme desert conditions. The report reveals that Saharan cheetah populations are more nocturnal, more wide-ranging, and less dense than populations of other cheetah subspecies living in Africa. The Saharan cheetah has adapted its behavior to cope with the harsh environment to which it is confined, avoiding humans and the heat by traveling at night across the vast ground it covers to find prey. The new data also confirm that although Ahaggar Cultural Park is still a relatively healthy habitat, the Saharan cheetah's population density remains dangerously low.

As the *PLOS ONE* study points out, the Asiatic cheetah (a different subspecies) has been a successful flagship species for Iran, where it has helped focus national pride and attract international conservation resources. In Botswana, cheetahs are a driver of ecotourism and related economic expansion. This study on Saharan cheetahs could attract similar attention to the often overlooked Ahaggar region, which would catalyze efforts to gather the resources and attention needed for improved conservation to protect these desert-dwelling big cats. WCS

WCS Saves Snow Leopards in Critical Landscapes

The International Union for Conservation of Nature classifies snow leopards as Endangered, with less than 7,000 remaining in the wild. Their current range is limited to the remote mountains of Central Asia and parts of China, Mongolia, Russia, India, and Bhutan. WCS has a long history of snow leopard conservation, beginning with former WCS Chief Scientist George Schaller's surveys on snow leopards and their prey in the Himalayas in the 1970s. We now work in a number of snow leopard range countries, focusing on populations with ample potential to bounce back, to help this endangered species thrive in the wild once more.

Afghanistan

WCS's eight years of snow leopard conservation in Afghanistan culminated in 2014 with the declaration of the remote northwestern district of Wakhan as the country's second protected area—Wakhan National Park. This vast area of 4,241 square miles—25 percent larger than Yellowstone National Park—will safeguard more than 70 percent of the snow leopard's range in Afghanistan. WCS is working with the government, local communities, and over 70 community rangers to build management capacity for the park.

In 2014, WCS also oversaw the construction of 13 communal predator-proof corrals for livestock in villages across the Wakhan landscape, bringing the total number of corrals to 35. The community has not reported any incidents of snow leopards killing livestock corralled in these structures or subsequent retaliatory killing of the snow leopards. We hope the structures will continue to reduce this primary cause of conflict between snow leopards and their human neighbors.

Over the past two years, WCS has fit four snow leopards in Afghanistan with satellite tracking collars, yielding valuable data on the species' ecology and behavior. This includes the size of its range, habitat preference, and predation habits. In 2015, we plan to collar four additional snow leopards to broaden and strengthen our data collection, which will help us create better, more effective action plans to continue saving these rare and enigmatic cats.

Uzbekistan

Uzbekistan's snow leopard population is the westernmost wild snow leopard population in the world. Historically, conservationists have had few opportunities to introduce modern technology in this region to assess snow leopard population density, structure, trends, or risk levels. Survey methods used by local practitioners here have not changed significantly since the 1970s.

Now, WCS and Panthera have partnered to set up a camera trap "presence-absence" study in Uzbekistan's Gissar Nature Reserve. We trained local rangers employed by the reserve on how to place, service, and program the camera traps. As a result, the local rangers helped obtain the first-ever camera trap images of snow leopards in Uzbekistan. Additionally, several other animal species, including potential snow leopard prey, were detected by the traps, providing for the first time a good overall picture of the faunal composition of the area. These data lay the groundwork for WCS to begin implementing protective actions for snow leopards in this region.

Kyrgyzstan

In 2015, WCS will partner with Panthera to begin a snow leopard research project in the Alai Mountains of Kyrgyzstan. WCS staff will assist with fitting satellite collars on snow leopards to help determine their behavior, habitat use, and current threats within this high-elevation mountain environment. This information will be critical in planning future conservation action for the Kyrgyzstan wild snow leopard population.

China

WCS is currently planning a five-year snow leopard research and conflict mitigation project to help protect snow leopards in Tibet's massive Changtang Nature Reserve. This project will help define the size and density of the region's snow leopard and prey populations, regional threats to these species, and prospective government and community-based solutions to protect the country's big cats. WCS

A Conversation with Dr. John Polisar

Dr. John Polisar, Coordinator of WCS's Jaguar Conservation Program, has for nearly 20 years dedicated his life to saving jaguars. Dr. Polisar received his PhD from the University of Florida. Subsequently he served in the U.S. Department of State as the Environment, Science, and Health Officer for the Western Hemisphere and managed a research program for the Saint Louis Zoo. He assumed his current position with WCS in 2007.

When did WCS begin its jaguar work?

DR. JOHN POLISAR: The program formally started in 1999 at a workshop held in Cocoyoc, Mexico, but WCS's jaguar work predates this period. In the late 1970s and early 1980s, former WCS Chief Scientist Dr. George Schaller initiated jaguar studies with colleagues in the Brazilian Pantanal. During this period, Dr. Alan Rabinowitz led our studies that helped establish the world's first jaguar preserve. My connection with jaguars started in *Los Llanos* (The Plains) of Venezuela, where we applied a team approach to study jaguars, puma, their prey base, and cattle ranching between 1996 and 1999. This study helped us better understand the ecological factors contributing to human-jaguar conflicts. The program then expanded, and since 1999, we have worked in 14 countries, and are always improving our methods.

What is the vision of WCS's Jaguar Conservation Program?

JP: WCS's long-term vision is jaguar populations thriving in vast landscapes that collectively represent all types of jaguar habitat. We aim to stabilize or increase jaguar populations in eight Jaguar Conservation Units (JCUs)—areas that have stable prey communities and adequate habitat where jaguar populations can potentially become self-sustaining. We envision the jaguar continuing to play its ecological role as the top predator across its historic range, and continuing to serve as the icon for Latin America's wildest places.

What are you and your team doing to make this vision a reality?

JP: Many of the places where we work are wild frontiers, not so different from the American frontier of 150 years ago. River ports, resource extraction, farmlands, and human populations are all expanding, and the extensive pressures of unchecked land conversion and prey depletion are wide-spread and relentless. Our JCUs, several of which are the size of Pennsylvania, are fundamental to protecting core jaguar habitat and preserving the connectivity of the jaguar's range. Through scientific monitoring, park and forest management, and local collaborations, we are working to hold this important ground for jaguars.

Our work involves minimizing human-jaguar conflict, which mainly occurs when jaguars prey on ranchers' livestock. If unregulated hunting practices deplete natural prey populations, the jaguar may seek domestic livestock as an alternative. WCS advocates for sustainable hunting practices that help keep jaguars in the wild and away from ranchers and their livestock. We also work with ranchers to implement conflict-reducing practices and technologies. In Guatemala, our alliance with the Ministry of Agriculture and Ranching has helped us engage large numbers of small ranches in win-win collaborations.

> "In addition to being well-managed, large secure areas of jaguar range need to be well-defended."

Our program includes a policy component. We advocate for increased in-country funding and

improved law enforcement in order to prevent further habitat degradation and jaguar population loss within our JCUs.

We have solid quantitative evidence that jaguar populations are stable and thriving across the majority of our areas—even increasing in some. If we can maintain these strongholds and our success continues, we can move on to recovering lost habitat where jaguars once lived.

What successes have you seen and what are you doing to further them?

JP: While unmanaged timber extraction is a threat to jaguars, they can survive in forest lands that contain well-managed, sustainable, and strictly-controlled logging concessions. Our strongest evidence comes from the Maya Biosphere Reserve in Guatemala, where 23 individual jaguars were identified in a large sample area that overlapped 5 distinct Forest Stewardship Council logging concessions. We will continue to help shape forest management strategies and ensure concessions meet specific conservation criteria, so that jaguars have a better chance of survival in these dual-purpose landscapes.

In addition to being well-managed, large secure areas of jaguar range need to be well-defended. We are working with environmental law enforcement agencies in multiple countries and promoting the technology of the Spatial Monitoring and Reporting Tool (SMART). This open source software system can track the movement of park guards and record their observations and the threats they encounter. Managers can then use this data to plan patrols and monitor their effectiveness over time. We plan to broaden the use of SMART across the entirety of the jaguar's range.

What is the toughest challenge you face day to day?

JP: Conservation is not easy. Every day is an uphill battle, but we accept the challenge. There are common threats across jaguar range—and common needs. Yet each site has unique characteristics and relationships that must be cultivated for our work to be effective. We are increasingly weaving these threads into a stronger fabric to build lasting results across the region and ultimately save the jaguar from extinction. WCS

Wildlife Crimes Unit Helps Bust Big Cat Traders

Since late 2014, WCS's Wildlife Crimes Unit (WCU) has assisted the Indonesian government in several arrests of criminals in Indonesia in possession of illegal tiger and leopard parts.

In October 2014, authorities caught two traders selling Sumatran tiger parts online, including a whole skin, a stuffed head, two stuffed paws, and a claw. The West Java Natural Resources Conservation Agency of the Ministry of Forestry and the Indonesian Police made the arrests, with help from critical intelligence and incriminating evidence gathered by WCS. One of the arrested traders had allegedly been selling tiger, lion, and bear parts for home decoration, while the other trader allegedly advertised the sale of tiger parts over social media for purported mystical purposes.

In early 2015, another major trafficker was busted for selling Sumatran tiger parts and other protected wildlife items, including a stuffed tiger, a stuffed Javan leopard, and four stuffed sambar deer. The suspect allegedly sold more than 100 stuffed tigers over a 10-year period. Again, our WCU provided the intelligence and evidence that led to this arrest, which was carried out by South Sumatra Military Police and the Provincial Natural Resource Conservation Office. The arrest concluded a long investigation that began in 2009, when the Criminal Investigation Division of the Indonesian National Police, with assistance from the WCU, apprehendeda middleman. Following that arrest, and thanks to six years of focused effort, the WCU and authorities were able to connect the middleman to this major trader.

And in April 2015, the State Prosecutor of North Sumatra and the WCU announced the arrest of a suspect for trafficking a live orangutan. This trader allegedly sold various protected live wildlife through Facebook and BlackBerry Messenger, including golden cats, hedgehogs, greater slow loris, siamang, Javan gibbons, hornbills, and juvenile crocodiles. He also allegedly sold wildlife parts such as tiger skins, tiger teeth, and hornbill casques.

These three cases still remain in the judicial process, but we have good reason to believe they will lead to full convictions. WCS provides technical assistance to the Indonesian prosecutors and judiciary on wildlife trafficking cases catalyzed by the WCU, and of the 300-plus cases with which we have assisted, 85 percent resulted in successful prosecution. All wildlife traffickers arrested in Indonesia face a fine of at least USD $10,000 and a maximum of 5 years in prison.

Sumatran tigers are a Critically Endangered subspecies that can only be found in Indonesia. The efforts of the WCU and local authorities are crucial to guarding these tigers against relentless poachers and sending the clear message that illegal wildlife trafficking will not be tolerated. WCS

Maya Biosphere Reserve Celebrates 25 Years

This year conservationists in Guatemala and around the world celebrate the 25th Anniversary of the Maya Biosphere Reserve, a successful safe haven for jaguars, as well as peccaries, macaws, and many other species that have disappeared from much of Mesoamerica. Created in 1990 by the Guatemalan government, the reserve is one of the few large forests remaining in Central America as deforestation has spread across the region. It covers 19 percent of Guatemala (more than 8,000 square miles) and forms Central America's largest protected area. WCS conservationists note that, in spite of sporadic insecurity and other challenges, approximately 70 percent of the protected area's forests and water bodies remain well-preserved—a conservation milestone.

One of the great accomplishments of the reserve is the persistence of the jaguar within its borders; it is home to at least 90 percent of Guatemala's remaining jaguar population (a number estimated to total some 345 big cats). The reserve also protects a variety of other species. Over 95 percent of both the remaining white-lipped peccaries and scarlet macaws in Guatemala exist in the Maya Biosphere Reserve. The forests of the reserve also provide wintering habitat for migratory birds, and help reduce the severity of climate change through the sequestration of carbon.

WCS and a broad array of local community associations, conservation groups, and international partners have collaborated with Guatemala's National Council of Protected Areas to ensure the preservation and sustainable management of the reserve. The approach includes biological research and monitoring, environmental governance, and the promotion of community-based management. WCS and partners have jointly established participatory natural resource management systems, including world-class sustainable timber management, improved community tourism, monitoring and management to reduce wildlife crime, and implementation of community-based fire prevention programs to mitigate the impacts of climate change—all of which are victories for people and jaguars alike. WCS

Protecting the Jaguar's Historic Range

Jaguars once roamed the American southwest, with distribution records as far north as the southern edge of the Grand Canyon and as far east as Texas. Today, the jaguar has been eradicated from 40 percent of its total historic range. Although jaguars still roam in the wild near the United States, human development and ecological factors have pushed the northern-most breeding population south of the border to Sonora, Mexico.

WCS's long-term vision is jaguar populations thriving in vast landscapes that collectively represent all types of jaguar habitat. Between 2011 and 2013, WCS's Eric Sanderson and Kim Fisher worked with the U.S. Fish and Wildlife Service's (USFWS) Jaguar Recovery Team to develop a historic database and maps for the Northwestern Recovery Unit (NRU), which spans from western-central Mexico into the southwestern United States. Subsequently, experts from WCS and other institutions generated jaguar surveying and monitoring recommendations for the NRU that have range-wide relevance. In addition, WCS worked with the USFWS to prepare jaguar road-crossing recommendations for the NRU that also have utility across all jaguar range. It is our hope that these tools will help us and our partners track the efficacy of our jaguar conservation measures, safeguard jaguar numbers, and ensure that the species can continue to play its role as the top predator across a significant part of its historic range. WCS

Saving the Last Asiatic Cheetahs

Iran is the only country where one can still find the extremely rare Asiatic cheetah—a Critically Endangered big cat with only about 100 animals remaining on earth. WCS has developed an Asiatic cheetah research and conservation program in Iran, and is playing an important role in providing the science, training, and resources local agencies and government need to save this last Asian cheetah population from extinction.

As part of this project, earlier this year WCS advised the Iranian government and civil society stakeholders on ways to improve and better implement the country's protected area laws. We have provided an evaluation of, and scientific recommendations for, the country's ongoing cheetah monitoring activities, reviews of drafted scientific reports, advice on health management for captive cheetah centers, and recommendations for community-based conservation activities. In late 2015, WCS will assist with a tracking collar initiative designed to help improve our understanding of the specific habitat use and movement patterns of these imperiled cheetahs. WCS

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