



SavingSpecies™

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SAN DIEGO ZOO GLOBAL

INSTITUTE FOR CONSERVATION RESEARCH

From Amazon To Andes
Protecting Unparalleled Biodiversity

Pristine habitats, their wildlife, and local communities face urgent pressures that threaten coexistence and need solutions.

FROM AMAZON TO ANDES

\\ By **Allison Alberts**, Ph.D., Chief Conservation and Research Officer

I invite you to experience an amazing journey—from the Amazonian rain forest teeming with plant and animal life to the windswept cloud forests of the Andes mountain range. Throughout this region, San Diego Zoo Global works with partners to use conservation technology, scientific capacity building, and community engagement to save iconic South American species.

We begin our travels in Peru at Cocha Cashu Biological Station, located in Manu National Park, a protected area of unparalleled biological diversity. Here, we'll learn about involving indigenous Matsigenka schoolchildren in aquatic health, training Peruvian college students in tropical biology, and conducting research to benefit giant otters, whose oxbow lake habitats are threatened by gold mining.

From there we'll explore further into the Peruvian Amazon, where motion-activated trail cameras document the elusive lives of jaguars, tapirs, uakari monkeys, and other rain forest dwellers. We'll gain insight into efforts to conserve the aguaje palms that serve as an important food source for people and wildlife, and we'll hear about a large-scale effort to digitize botanical data. Moving into Bolivia, we'll uncover promising new approaches to solving the challenges of human-wildlife conflicts.

Traveling up in elevation into the stunning Andes mountain range, we'll get a glimpse into the secret habits of Andean bears and discover how a partnership to release zoo-bred Andean condors is revitalizing the wild population. It's my hope that you'll come away with an expanded understanding of the critical role that science plays in helping save the spectacular species inhabiting this unique region. There's no place like it on Earth.

HOW YOU CAN HELP

Our field research teams all over the world rely on the generosity of donors like you to help achieve San Diego Zoo Global's vision to lead the fight against extinction. To learn ways you can help, please call Maggie Aleksic at 760-747-8702, ext. 5762, or email malesic@sandiegozoo.org.

ON THE COVER:

The jaguar, *Panthera onca*, is the largest cat found in the Americas. We work with local communities to find solutions for reducing human-wildlife conflicts with those who share the rain forest with jaguars.

With the help of generous donors and grants, we improved Cocha Cashu's infrastructure. It still retains its rustic charm—including sleeping in tents—but the station provides all the creature comforts a visiting scientist could want: showers, composting toilets, Internet, power, reliable transportation, and good food.



“Our mission is to help sustain Cocha Cashu's astonishing biodiversity by attracting the best scientists and students from around the globe to help us understand it and preserve it.” RON SWAISGOOD, Ph.D.

COCHA CASHU: OUR BIOLOGICAL FIELD STATION IS GOING PLACES

\\ By **Ron Swaisgood**, Ph.D., Brown Endowed Director of Recovery Ecology

The year is 2011 and we have just signed a 10-year agreement with the Peruvian park service to run a legacy research program: Cocha Cashu Biological Station. With hope and anticipation we entered a new phase of conservation for San Diego Zoo Global.

Cocha Cashu is a jewel in the Peruvian Amazon, a field station of international renown since 1969 that is embedded deep in Manu National Park: 4 million pristine acres contain the greatest variety of plants and animals on Earth. Our mission is to help sustain Cocha Cashu's astonishing biodiversity by attracting the best scientists and students from around the globe to help us understand it and preserve it. Standing on the shoulders of giants like Dr. John Terborgh, who founded the station, we are excited to be celebrating Cocha Cashu's 50th anniversary next year.

Our signature achievement in education is the establishment of an annual field course, which gives Peruvian college students direct experience in conducting tropical ecological research. We are currently working with a group of 10 dedicated, starry-eyed students recruited from universities across Peru. The goals of this three-month course are to provide these future leaders with the scientific skills needed to conduct science-based field research—to arm them with a deep knowledge of Amazonian ecological communities and provide a transformational personal experience that inspires them to

pursue careers in tropical conservation. At the end of the course, they present their findings to staff at Manu National Park headquarters in Cusco, so that lessons learned can be incorporated into improved park management. Then these students go on to do wonderful things, moving into careers that protect Amazonian wildlife.

Although wildlife is protected at Manu, there is much we can learn at Cocha Cashu to help better manage species in unprotected areas. Our flagship program involves the endangered giant otter, a top predator in oxbow lakes throughout the Amazon. Although giant otter populations have begun to recover following a ban of the fur trade, emerging threats from gold mining are a serious concern.

Equally important are interviews with nearby communities that tell us how people perceive problems and what might motivate them to take action. We are in the early stages, but ultimately we plan to share our results with Manu National Park, Peruvian government agencies, and local communities so we can work together to reduce threats to otters and other wildlife, their habitats, and people in this rich biodiverse region. Understanding this complex area and engaging indigenous people to become passionate stewards of the rain forest will lead the way to enduring solutions.



GIANT OTTERS: CHARISMATIC YET THREATENED

Giant otters are threatened by habitat degradation, gold mining, and conflicts with people. With a local team comprised of “Cashu nuts” and Matsigenkas, our postdoctoral fellow, Dr. Adi Barocas, has tackled this issue head on, combining ecological research with capacity building. Adi’s team is studying otter family groups living in more than 20 oxbow lakes, some inside the protection of Manu National Park, some in the buffer area just outside the park, and some right in the middle of the gold mining zone. The team focuses on human impacts on otters and their oxbow lake habitats, including mining, which has devastating impacts: gold is extracted using mercury, a dangerous toxin that affects overall aquatic health by accumulating in fish and exposing otters, caimans, and people to its toxic effects.

The giant otter team braves caimans and piranhas to collect valuable data on otters, the fish on which they depend, and lake health. Samples collected from fish and sediments help us assess the degree of contamination.



CREATING CAREER TRAJECTORIES

Alumni from our field course, endearingly called “Cashu nuts,” tell us their three months at Cashu were the start of something big for their lives. All indicated they were motivated to continue with a career in tropical ecology and conservation, attesting to the life-changing experience, and more than 90 percent are currently active in conservation research at universities and NGOs in Peru and elsewhere. We have recruited passionate students, strengthened their academic background and critical thinking skills, impressed upon them the beauty and challenge of doing research in a tropical rain forest, and launched them on a path where they are better prepared to help create a more sustainable world.

This year Cocha Cashu became carbon neutral. By teaming up with Regenera—a Peruvian NGO whose mission is to empower local communities to develop more sustainable economies—we provide carbon offset payments to help indigenous Matsigenka communities become better stewards of their natural resources.

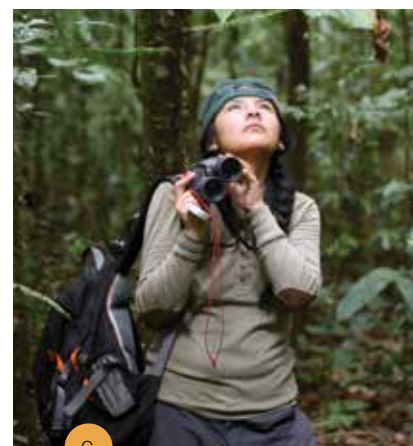


LOCAL COMMUNITIES: ESSENTIAL PARTNERS

We have not limited our education and outreach activities to university students: there is also a vibrant program for local, primarily indigenous, communities in and around the park. Our educators from the San Diego Zoo Institute for Conservation Research and San Diego Zoo Safari Park have become increasingly involved in this program, focusing on school and community visits and partnerships.



- Working with the Matsigenkas, we published a children’s book about giant otters and aquatic ecosystem conservation, now available in the local dialect.
- By capturing fascinating stories from oral tradition and working with communities, we implemented several citizen science programs, such as Leaf Packet. Local people place leaf packets in streams, rivers, and lakes, then collect them to identify aquatic insects they find. This measures the health of the aquatic ecosystem, which is at risk from gold mining runoff.
- Students visit Cocha Cashu to experience firsthand what it is like to be a researcher, and they see their home environment from a new perspective.
- A program was created to monitor turtle nesting as well as egg harvesting by local people. Here communities live off the land, so the goal is to work with them to ensure that livelihoods are sustainable.



THE AMAZON BASIN:

Surprising Solutions for Rain Forests

By **Mathias Tobler**, Ph.D., Associate Director, Population Sustainability

The Amazon rain forest is one of the last large wilderness areas, containing half of the planet's remaining tropical forests. In Peru, vast extents of lowland rain forest cover the eastern part of the country, connecting to the cloud forest on the slopes of the Andes. This is one of the most biodiverse regions on Earth and also home to a large population of jaguars. The landscape is a mosaic of protected areas, indigenous community land, and concessions (government leased land) for logging, Brazil nuts, agriculture, and mining. For the last 15 years we have been studying how large mammals such as jaguars, pumas, tapirs, and peccaries are affected by these different land-use types. We have worked in national parks, private protected areas, and logging and Brazil nut concessions.

Technology, and trail cameras in particular, play a central role in our work. Unlike observing wildlife on Africa's open savannas, observing animals in the dense tropical rain forest is nearly impossible. Trail cameras provide us with data on species that we as field researchers rarely see. Over the last 10 years,

trail camera technology has evolved rapidly, from film cameras limited to 36 exposures to modern digital cameras that can take tens of thousands of images and videos and operate independently for up to six months. This allows us to survey larger and larger areas. While in the early days of our work we could barely cover 25 square miles, this year we set out 180 trail cameras over 1,000 square miles.

Our work in Forest Stewardship Council-certified logging concessions showed that responsible forest management protects a large number of species. In an area of 250 square miles, we identified 43 individual jaguars—based on their unique spot patterns—one of the highest jaguar densities reported to date. The images also revealed an abundance of tapirs, ocelots, peccaries, anteaters, and other species that are more commonly associated with well-protected areas.

Our next goal is to take a closer look at Brazil nut concessions that cover several million hectares in our study region. Brazil nut harvesting is an important eco-

nomie activity that provides livelihoods for local families and depends on intact forests. It will never be possible to protect all the tropical forests in national parks, so promoting land use plans that provide an economic benefit to local communities, while at the same time protecting the forest, is an important conservation strategy.

Our research project brought us to an unexpected conclusion: well-managed logging and, potentially, Brazil nut concessions have far fewer negative effects on forest ecosystems than alternatives such as agriculture, cattle ranging, or palm oil plantations. Economic development and conservation don't have to be exclusive. Certified logging and Brazil nut concessions provide protection for jaguars and other species, and they are an important complement to protected areas. Additionally, they show that coexistence between wildlife and people is possible, which is the result we always hope to see.



Trail cameras capture photos of jaguars as well as birds like the crested oropendola (below) and a juvenile emerald tree boa.



“Economic development and conservation don’t have to be exclusive...coexistence between wildlife and people is possible, which is the result we always hope to see.” – MATHIAS TOBLER, Ph.D.



SAVING PALMS SAVES LOCAL LIVELIHOODS

By **Christa Horn**, Conservation Program Specialist, Plant Conservation

Our Plant Conservation team's work with the aguaje palm in the Peruvian Amazon began as an effort to help the Maijuna, an indigenous people, sustainably manage their natural resources. The swamps where people harvested the palms for their fruit were changing, with different trees growing there and fewer visits from the wildlife dependent on aguaje fruit.

The problem developed when the female palms were cut down, because they bear the fruit but can grow to 100 feet tall—and as a result the potential for the trees to reproduce drastically diminished.

Working with the community and social scientists, we helped come up with some solutions: each home

acquired a climbing harness, workshops provided climbing training, and we helped people begin to grow aguaje palms in their abandoned fields.

The success of the work done on Maijuna lands can be replicated, but prioritizing where to conduct outreach is important. Plant Conservation's recent work has focused on determining where and when harvesting occurs. Examining palm logs from riverboats, we monitored the aguaje fruit source coming to market for over a year—all 8,206 metric tons of it! Our results can help other conservation organizations target communities that harvest the most fruit and help them do so more sustainably into the future.

LOOKING UP FOR UAKARIS

\\ By **Mark Bowler**, Ph.D., SDZG Research Associate

Populations of red uakari monkeys are becoming increasingly isolated and observing them comes with a series of challenges. We are collaborating with people living in remote communities on the Yavari, a stronghold for the red uakari, in an attempt to automate wildlife surveys for this and other primates. A team recently deployed an array of audio recorders in the area that we hope to use to detect monkeys. We will see how well we can detect uakaris and spider monkeys as well as a mix of 12 other primate species.



MAKING PERUVIAN PLANT SPECIMENS AVAILABLE TO THE WORLD

\\ By **Mathias Tobler**, Ph.D., Associate Director

Plant specimens stored in herbaria around the world are an important record of past species distributions and support ecological, archeological, and anthropological studies. With over 19,000 vascular plant species, including 5,000 endemics, Peru is a hotspot of floristic diversity and endemism. Over the last six years we have taken high-resolution images of their plant specimen collections covering 80 years of botanical explorations. Over 100,000 images can be accessed through the Andes to Amazon Atrium Biodiversity System hosted at San Diego Zoo Global.



WORKING TOWARD SUSTAINABILITY

\\ By **Mark Bowler**, Ph.D., SDZG Research Associate

People throughout the Amazon hunt wildlife for subsistence, where vast size and difficulty of access in Amazonia have ensured species survival. New roads and developments have opened enormous forest tracts, now susceptible to overhunting. We monitor wildlife populations in communities in Peru, using GPS tracking, trail cameras, and remote audio recorders that can detect gunshots over a mile away. Our goal is to support local people plan for sustainability and advise on proposals for roads and plantations with the potential to impact biodiversity and livelihoods.



LISTENING TO COMMUNITY VOICES

\\ By **Jenny Glikman**, Ph.D., Associate Director, Community Engagement

Humans both drive and help solve conservation challenges. However, too often, the communities living with and depending on threatened species are not afforded opportunities to participate in conservation, voice concerns, or engage in conversations about their local ecosystems. Excluding them from conservation initiatives can stand in the way of successful, long-term solutions.

Human Dimensions of Wildlife is a growing field of study that draws on social psychology, anthropology, and sociology. This field of study attempts to describe, predict, understand, and influence human thought and action toward the natural environment. Our Community Engagement Team is working collaboratively with local people in Bolivia and Peru to understand their perspectives and find workable solutions for improving their coexistence

with jaguars, Andean bears, and giant otters. In Bolivia, we have interviewed community members to identify potential solutions for reducing illegal killing of jaguars. We are also engaging with local teachers to increase awareness and reduce misbeliefs and fear of jaguars.

Currently, our team is interviewing local residents in the area of Puerto Maldonado, Peru, to better understand their feelings about sharing the landscape with jaguars and other wildlife species. We also work with teachers in Peru to promote stewardship of Andean bears, as well as with the community to create and improve sustainable livelihoods to reduce potential conflicts with bears. Listening to local perspectives is essential to finding conservation solutions for wildlife that share their habitats.

“Currently, our team is interviewing local residents in the area of Puerto Maldonado, Peru, to better understand their feelings about sharing the landscape with jaguars and other wildlife species.” JENNY GLIKMAN, Ph.D.





The world's largest raptor—with a 10-foot wingspan—is Colombia's national symbol, and its citizens have rallied around conservation efforts for its recovery.



Young Andean condors are one year old when released near an established site with several adult condors. They soon learn how to ride the thermals and where they fit in their group's social order. In Colombia, we have released 74 condors.

For centuries, South American Indian groups revered the Andean condor for its nobility and strength, naming it "El Mensajero del Sol," the Messenger of the Sun. The Incas believed the condor brought the sun into the sky every morning and was a messenger to the gods. Today, the condor is a national symbol in several other countries and plays a prominent role in folklore and cultural mythology.



A SUCCESS STORY IN THE MAKING: RESTORING THE ANDEAN CONDOR

\\ By **Michael Mace**, Director of Animal Collections and Strategy, San Diego Zoo Global

The story of breeding and releasing the Andean condor back into the Andes Mountains in Colombia will forever be linked with the early days of saving the California condor in the 1980s and 1990s. Both species play a critical ecological role as scavengers in the environments they inhabit.

Few remember that San Diego Zoo Global worked with Andean condors as far back as 1928. Based on our experience with this species, we were invited by the U.S. Fish and Wildlife Service to help save the critically endangered California condor in the 1980s, with the goal of breeding and reintroducing them to the wild to recover the population. Acting as surrogates for their California cousins, five young female Andean condors were temporarily released in California in 1989, in order to evaluate the habitat. Fortunately they thrived, and following this the first two juvenile California condors were successfully released north of Los Angeles in 1992. Today, more than 270 California condors are flying free and the species is well on the road to recovery with a world population of more than 460 condors.

The recovery of the endangered Andean condor in its historical habitat is in its own right a compelling story of cultural and international partnerships. Since 1989, dozens have been hatched in the United States and released into Colombia's Andes range. To carry out the complicated process of coordinating releases, we recruited 20 AZA institutions to breed condors for release in Colombia and Venezuela. Our biologists joined Colombia's team and participated in the early releases, which involved a grueling uphill trek to the release site at 11,000 feet in Chingaza National Park. Originally fitted with radio transmitters, today the birds wear GPS wing tags—satellite technology provided by our Ellen Browning Scripps Foundation Spatial Ecology Lab—and are monitored by Colombian biologists.

We have come full circle from raising Andean condors in zoos, releasing them into the wild, and celebrating when condors themselves began raising offspring in their natural habitat in Colombia. This is one of the true milestones of success for any reintroduction program.



"We have come full circle from raising Andean condors in zoos, releasing them into the wild, and celebrating when condors themselves began raising offspring in their natural habitat in Colombia. This is one of the true milestones of success for any reintroduction program." MICHAEL MACE

LEARNING TO CONSERVE THE VULNERABLE ANDEAN BEAR

\\ **Russell Van Horn**, Ph.D., Scientist, Population Sustainability

It's rare to see a wild Andean bear in its native South America—even local people rarely see them—but one technology has changed that. By reviewing photographs from trail cameras we can identify individual bears and study their behaviors: where they roam, how mothers raise their cubs, their ecology, diet, and other aspects of their population dynamics. This all helps as we work to learn more about the least-studied of the bear species.

At times we've been able to deploy GPS collars on wild Andean bears, and this satellite technology allows us to follow them so we can identify and study the dens where cubs are born. This is critical knowledge needed to conserve bears, but these omnivores cannot survive without healthy populations of the plants they depend upon to eat, like bromeliads and sapote fruits. To understand the fundamental processes driving bear survival, we also study those plants. It appears that in some areas the variation in space and time of certain plant resources greatly

affects bear physiology, behavior, and demography. Many bear foods are also eaten by other forest mammals, such as monkeys, but although the Amazon rain forest supports many primates, no Andean bears have ever been seen down at lowland levels, at Cocha Cashu. Why not? To answer this, we're evaluating the bear's elevational range from the Andean grasslands down to the Amazon. We believe this will allow us to predict these bears' responses to climate change.

Andean bears are also threatened by habitat fragmentation and loss, as well as death resulting from conflicts with local communities if they damage crops or hunt cattle. Because those communities interact with the bears and their habitats, and because people drive local resource use, we engage local residents in our research and partner with them in future plans for Andean bear conservation. Understanding and participation from the communities that share bear habitats will lead to better protections for South America's only bear species.



Helping Bears with Candid Cameras

No one knows how many of these bears remain in the wild, but habitat loss to mining, farming, and lumber industries isn't slowing down. Because Andean bears live in dense forests, it's hard to find and study them. Trail cameras are invaluable tools, helping the team identify, count, and estimate a bear's age by markings—since noses change color with age—as well as compare survival rates between populations.



SPATIAL TECHNOLOGIES: THE FUTURE IS NOW

\\ **James Sheppard**, Ph.D., Senior Scientist,
Recovery Ecology, Ellen Browning Scripps Foundation
Spatial Ecology Lab

We monitor the spatial behaviors and landscape use of Andean bears to learn how the animals move between habitats and key habitat resources, such as den sites and water holes. Andean bears can occupy steep mountainous habitat that is remote, inaccessible, and extremely difficult to traverse—at least for our field crew! Yet our observations indicate that the bears have no trouble crossing over sheer cliffs and boulder fields as they make regular trips between high-elevation den sites and lower-elevation foraging areas.

This leads us to ask whether the bears are selecting the easiest routes as they travel between their habitat sites? Using high-resolution satellite imagery of Andean bear habitat, we digitized the network of trails that the bears have carved into the landscape during their movements and matched these paths with digital terrain models of elevation and slope.

We then generated models of the relative energy costs of traversing these paths to quantify the degree to which the bears are moving across the landscape in an energy-efficient manner. This information is helping us develop management strategies for protecting Andean bear habitat.



“Because those communities interact with the bears and their habitats, and because local people drive local resource use, we engage local residents in our research and partner with them in future plans for Andean bear conservation.” —**RUSSELL VAN HORN**, Ph.D.

CONSERVATION ACHIEVEMENTS

HONORS AND AWARDS

Ekwoge Abwe, Central Africa Program Manager, was selected as a finalist for the 2018 Drexel Common Good Award. This highly competitive award is presented to a graduate student who demonstrates academic excellence and is committed to improving the world by making contributions to local, national, or global communities through scholarship or civic engagement.

Dr. Megan Owen, Director of Population Sustainability, was invited to serve on the Advisory Board of the Leatherdale International Polar Bear Conservation Centre in Manitoba, Canada, to provide expert advice on polar bear management and policy related to orphaned and at-risk polar bears.

The Institute's **Plant Conservation** team and the **Center for Plant Conservation** were featured on Public Television, as part of the program titled "A Growing Passion."

HIGHLIGHTED PUBLICATIONS

The fight to end extinction happens on a variety of fronts. Our San Diego Zoo Global conservation scientists and researchers work to lead this fight in every capacity, whether studying the smallest cells or working with the biggest animals. From studying how disease is transmitted from mothers to newborns, to monitoring tropical fruit harvests to understand economic and ecological impacts, to restoring habitat by translocating ground squirrels to dig and improve vegetation and burrows for diminutive owls, here's what we've published lately:

Burgess, T. L., **C. L. Witte**, and **B. A. Rideout**. 2017. Early-life exposures and Johne's disease risk in zoo ruminants. *Journal of Veterinary Diagnostic Investigation* 30: 78-85.

In this study, we use historical disease outbreak data to develop statistical models that predict which ruminants are most likely to develop Johne's disease. The models reveal the importance of transmission from mothers to offspring and show that infection may be transmitted between same-species herd mates, especially during the first week of life, allowing us to improve our disease surveillance efforts.

Horn, C. M., V. H. Vargas Paredes, M. P. Gilmore, and B. A. Endress. 2018. Spatio-temporal patterns of *Mauritia flexuosa* fruit extraction in the Peruvian Amazon: Implications for conservation and sustainability. *Applied Geography* 97: 98-108.

In this study, we sought to better understand the scale and scope of aguaje fruit extraction in the northeastern Peruvian Amazon. By examining shipping logs and

monitoring key transport lines, we documented the amount and rough origin of fruit entering Iquitos for one year. Understanding how much and where aguaje comes from is the first step in understanding the socioeconomic and ecological impacts of harvest and informing future management.

McCullough Hennessy, S., D. H. Deutschman, **D. M. Shier**, **L. A. Nordstrom**, C. Lenihan, **J. P. Montagne**, **C. L. Wisinski**, and **R. R. Swaisgood**. 2016. Experimental habitat restoration for conserved species using ecosystem engineers and vegetation management. *Animal Conservation* 19: 506-514.

The goal here was to provide conservation managers with a cost-effective tool for restoring degraded habitat for the western burrowing owl, a species of conservation concern. By translocating California ground squirrels onto reserve lands, we reestablished widespread burrowing activity. Evaluating vegetation management, we found the squirrels play a key role as ecosystem engineers by increasing suitable habitat for burrowing owl populations.

Note: San Diego Zoo Global staff names are bolded above.

COCHA CASHU & BEYOND PARTNERSHIPS

From the Amazon to the Andes, we believe it takes a village to protect nature, and we have developed an extensive network of collaborators. Among others, our key partners include:

- Center for Amazonian Scientific Innovation, Wake Forest University
- Frankfurt Zoological Society-Peru
- Manu National Park
- Wildlife Conservation Research Unit (WildCRU), University of Oxford
- Nature Services Peru
- Peruvian National Park Service (SERNANP)
- WWF Peru
- Rainforest Expeditions
- Asociación para la Conservación de la Cuenca Amazónica (ACCA)
- Universidad Nacional Agraria La Molina
- Instituto de Investigaciones de la Amazonía Peruana (IIAP)
- Universidad Nacional de San Antonio Abad del Cusco
- Association for Research and Conservation of Amazonian Andean Ecosystems (ACEAA)
- Amazon Conservation Association
- Andes Biodiversity and Ecosystem Research Group, Wake Forest University
- Peru Verde
- Spectacled Bear Conservation Society
- SERFOR (Peruvian version of USFWS and U.S. Forest Service)
- Colombian Association of Zoos and Aquariums (ACOPAZOA)
- AZA Andean Condor SSP
- FECONOMAI (Federación de Comunidades Nativas Majrunas)

COCHA CASHU ENDOWMENT

Cathy Stiefel and Keith Behner, longtime friends of San Diego Zoo Global, gave a transformational gift to the Cocha Cashu Biological Station in the Peruvian Amazon. Their generous endowment through The Stiefel Behner Charitable Fund will benefit the rare species and people of the region well into the future.

As Cathy said, "Our hope is that the Institute's goals of collaboration, education, research, and longevity for the station will contribute significantly to the preservation of the Peruvian Amazon and the species that reside there."

The Stiefel Behner endowment will advance environmental science and capacity building in one of the last pristine habitats on Earth. At the Cocha Cashu Biological Station within Manu National Park, unrivaled opportunities exist to study the processes of nature largely undisturbed by people. This will provide the ideal for which to strive when attempting to recover other areas impacted by human activity.



WHAT'S News



RECOVERY ECOLOGY

Five wild breeding pairs of burrowing owls were translocated to the Rancho Jamul Ecological Reserve in southern San Diego in order to boost the local population.



PLANT CONSERVATION

We welcomed the first five interns in the Rookies for Recovery Program, which prepares recruits for work conserving plants with the Bureau of Land Management.



POPULATION SUSTAINABILITY

Our team expanded our remote camera arrays to cover over 100,000 acres of community conservancy land in northern Kenya to collect data on leopard abundance and distribution.



CONSERVATION GENETICS

We met with Barcelona Zoo officials and Spanish civic leaders to discuss the establishment of a biobank for vulnerable, threatened, and endangered fauna from Spain.



REPRODUCTIVE SCIENCES

Pregnancy was confirmed after a successful artificial insemination of a second southern white rhino using frozen semen following hormone-induced ovulation.



DISEASE INVESTIGATIONS

A review of histopathologic lesions in critically endangered Lord Howe Island stick insects determined that fungal infections and molting problems were key health issues.



COMMUNITY ENGAGEMENT

We welcomed over 50 students from Niigata Minami High School in Japan to engage in learning about our California condor recovery effort using state-of-the-art techniques.



GLOBAL PARTNERSHIPS

We co-hosted a Giraffe Conservation Science meeting at the Smithsonian Conservation Biology Institute to establish a giraffe conservation strategy through 2030.

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