

SAINT LOUIS ZOO
WILDCARE INSTITUTE

2021

ANNUAL REPORT



Saint Louis Zoo
Animals Always®

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The Saint Louis Zoo cares for animals — both at the Zoo and in the wild, where habitat loss, disease and poaching threaten many species. Since 2004, the Saint Louis Zoo WildCare Institute and its conservation partners have worked to create a sustainable future for wildlife and for people around the world.

The WildCare Institute’s ongoing efforts include wildlife management and recovery, conservation science, and support of the human populations that coexist with wildlife.



A LETTER FROM THE DIRECTORS

Dear Friends,

In last year’s letter, we began with the statement that 2020 was a year like no other. This year, we will lead with saying 2021 was a year like 2020. Pandemic-related budget reductions continued, international travel was extremely limited, and perhaps most sadly, all of our conservation partners felt the impact of the pandemic profoundly and globally. However, at the height of the pandemic, the Saint Louis Zoo WildCare Institute held strong. We have much to be proud of regarding this year’s accomplishments.

Despite limited travel, many of our reintroduction efforts continued. In Missouri, with our partners U.S. Fish and Wildlife Service (USFWS) and Missouri Department of Conservation (MDC), we released 182 American burying beetles at Taberville Prairie. Also encouraging is that the team found evidence of the beetles’ persistence at both Taberville and the former release site, Wah’ Kon-Tah Prairie. Additionally, again collaborating with USFWS and MDC, we released 800 Ozark and eastern hellbenders back into Missouri streams.

Much further afield, 1,000 radiated tortoises, rescued from the illegal pet trade, were examined before their eventual release into their native habitats in Madagascar. Also in Madagascar, we received confirmation from our colleagues

at Saint Louis University that decades of Saint Louis Zoo-sponsored conservation work at Betampona Natural Reserve have resulted in a substantial increase in forest cover – up to 59% in the evergreen forest category.

In Armenia, nine Caucasus blotched rat snakes were reintroduced back into their native habitat. In Chad, we closed the year with 37 addax and 350 scimitar-horned oryx roaming a wildlife reserve as part of a reintroduction program that we help support, closing in on the project goal to establish a self-sustainable wild population of 500 oryx.

In addition, we were able to hire a post-doc for our Conservation Canid Initiative, an important project to better understand Missouri’s three wild canid species. The Botswana Center for African Painted Dogs, the Ron and Karen Goellner Center for Hellbender Conservation, and the Center for Conservation in the Horn of Africa all received prestigious grants.

Our final major highlight for the year, while a tremendous accolade, is also bittersweet. The visionary of the WildCare Institute, Dr. Jeffrey P. Bonner, retired in 2021. He received the Saint Louis Zoo Conservation Award for his

“forward-thinking and innovative approach to wildlife conservation efforts and for his boundless curiosity of the natural world.” Also, the *Jeffrey P. Bonner, Ph.D., Conservation Fund* received nearly \$255,000 from an impressive 119 donors.

In closing, despite all of last year’s challenges, the conservation work of the WildCare Institute persevered. This is in large part due to the deep roots anchoring WildCare: partnership, a devotion to wildlife and commitment. Our successes are grounded in your support — whether it is through a donation, a partnership, a collaboration or simply through the sharing of our stories. Thank you for your interest in the Saint Louis Zoo WildCare Institute and for supporting our dedication to creating a sustainable future for wildlife and for people around the world.



Elizabeth Kelley, Ph.D.

*Executive Director
Saint Louis Zoo
WildCare Institute*



Bob Merz

*Assistant Director
Saint Louis Zoo
WildCare Institute*

The WildCare Institute released **182 American burying beetles** at Taberville Prairie, reintroduced **800 Ozark and eastern hellbenders** back into Missouri streams, and celebrated **350 scimitar-horned oryx** roaming a wildlife reserve as part of a reintroduction program.

800

**OZARK AND
EASTERN HELLBENDERS**
reintroduced back into Missouri streams



WILDCARE INSTITUTE

CENTERS & PROGRAMS

What is a Center? What is a Program?

A Center is an initiative that has focused conservation efforts with long-term partnerships.

A Program is an initiative that is either new or smaller in scope than a Center.

- Animals supported by WildCare Institute Centers
- Animals supported by Conservation Programs funded by the WildCare Institute

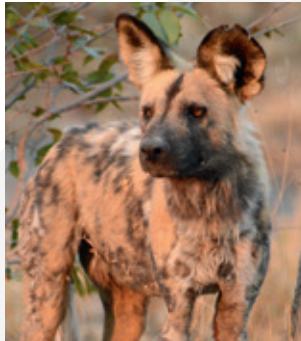




OUR CONSERVATION WORK AT A GLANCE

CENTERS

The WildCare Institute is comprised of Centers and Programs, each of which is dedicated to particular animals and habitats that need our help. Here is an overview of our focused efforts covering conservation hotspots all around the globe.



The Botswana Center for African Painted Dogs

This Center's primary partner, Botswana Predator Conservation, supports work to minimize human/painted dog conflict using innovative research that includes both fieldwork and chemical analyses in the laboratory. Learning more about scent marking in this species is the key to using artificial chemical signals to keep them safely inside protected wildlife areas.



Center for American Burying Beetle Conservation

In decline due to habitat loss and fragmentation, American burying beetles are "nature's recyclers" — they eat dead animals and release decomposing components back into the environment. Through this Center, animal care experts raise the threatened species at the Saint Louis Zoo. Then, with help from Zoo volunteers and partners, the beetles are released into the wild.



Center for Asian Elephant Conservation

This Center and its partners focus on Asian elephant management, recovery and conservation science. Rewilding retired logging elephants in Myanmar and establishing corridor habitat in India are among ways this Center helps save endangered Asian elephants from extinction.



Center for Avian Conservation in the Pacific Islands

The inspiration behind this Center was the accidental introduction of the brown tree snake on the island of Guam, which devastated the island's forest bird species. Now, this Center helps save native birds by moving them to safe islands, among other conservation efforts.



Center for Avian Health in the Galapagos Islands

The Galapagos Islands are home to unique species (including many species of birds) that can be found nowhere else. The growing effect of the human population and the introduction of diseases pose a threat to the wildlife on the islands. This Center helped develop the first-ever avian health program in the Galapagos.



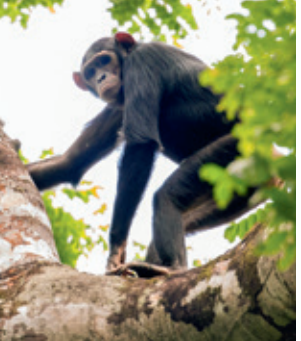
Center for Chelonian Conservation

Headed by the Saint Louis Zoo Institute for Conservation Medicine, the Center team works to conserve turtles and tortoises by studying their health and movements. This research increases our understanding of environmental factors that affect the health of turtle populations and that may have implications for humans.



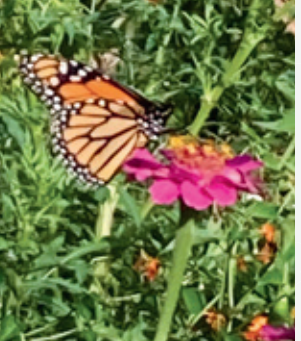
Center for Conservation of Carnivores in Africa

Africa is home to several endangered carnivores, including cheetahs, lions and hyenas. Part of conserving carnivores in Africa is helping to mitigate conflicts that arise between communities and animals. This Center works with several partners to find solutions so people can better coexist with wildlife.



Center for Conservation of Congo Apes

This Center is an evolution of the WildCare Institute's multi-year program support for the Goulougo Triangle Ape Project in the Republic of Congo. The ultimate goal is to develop conservation policies and local leadership to ensure the long-term survival of chimpanzees and gorillas in the Congo Basin.



Center for Conservation in Forest Park

This Center utilizes Forest Park in St. Louis for conservation education. The Center works to get more children outdoors, especially children in urban areas who have limited access to parks. The Center's goal is to develop empathy in participating students toward animals and nature through activities in the park as well as classroom visits.

The WildCare Institute, with the support of its **conservation partners**, is dedicated to creating a sustainable future for wildlife and for people locally and around the world.





The need for conservation is greater than ever, with many vertebrate species on the brink of extinction.



Center for Conservation in the Horn of Africa

This Center plays a key role in sustaining critically endangered species in Africa, particularly Grevy’s zebra. By supporting community-based coalitions and establishing conservation, research and education programs, this Center strikes a balance between the needs of community members and the imperiled existence of rare species.



Center for Conservation in Madagascar

Through its core partner, the Madagascar Fauna and Flora Group, this Center spearheads research on population size, demographics, health and habitat use of two critically endangered lemur species at Betampona Natural Reserve in eastern Madagascar. The results will guide a management plan that aims to prevent their local extinction through translocations of unrelated groups into the reserve.



Center for Conservation in Punta San Juan, Peru

Punta San Juan is home to the largest breeding colony of Humboldt penguins in Peru. The guano of sea birds is often harvested and sold as fertilizer, but this can negatively affect penguins. This Center conducts an annual census of penguins and participates in sustainable guano harvests.



Center for Conservation in Western Asia

For nearly 20 years, Saint Louis Zoo experts have studied Armenian vipers, which have experienced population declines due to habitat loss, livestock grazing and persecution. The Center’s research team continues to analyze the Armenian viper’s habitat use, genetic diversity and population structure both in the field and at the Armenian Conservation Breeding Center.



Center for Ecuadorian Amphibian Conservation

Amphibians are disappearing at an exponential rate, and Ecuador ranks third in the world for amphibian diversity. This Center and its partners are working to conserve amphibians in Ecuador from extinction through field surveys, habitat protection, research and conservation-breeding programs.



Center for Native Pollinator Conservation

Pollinators are critical for our lives. Many people mistakenly think that pollinators will always be around. However, human actions of altering pollinators’ habitats and the misuse of pesticides have impacted many species. This Center works to save pollinators by planting habitat and developing conservation and education programs.



Ron and Karen Goellner Center for Hellbender Conservation

A Missouri native, the hellbender is the largest species of salamander in North America. Over the past 40-plus years, hellbender populations have experienced a 70% decline. The Ron and Karen Goellner Center for Hellbender Conservation established a conservation breeding program to help save these unique amphibians.



Saharan Wildlife Recovery Center

This Center focuses on addressing the Sahara’s silent crisis of extinction by linking Zoo expertise and resources with conservation action. Work includes using animals raised in human care to restore critically endangered species to the wild, like addax, Saharan red-necked ostrich and scimitar-horned oryx.

We follow three key pillars to guide our conservation efforts:
wildlife management and recovery, conservation science and support of the human populations that coexist with wildlife.



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PROGRAMS
CONTINUING OUR
CONSERVATION
ADVANCEMENT

Action Indonesia

Indonesia is one of the world's biodiversity hotspots and three of its iconic species — anoa, babirusa and banteng — are threatened with extinction. The WildCare Institute supports Action Indonesia, which was created to ensure the long-term survival of these imperiled species in the wild and in human care.

Andean Bear Conservation Alliance

Andean bears face a number of threats, including habitat reduction and fragmentation. The WildCare Institute supports the Andean Bear Conservation Alliance, which works to tackle conservation threats using a multifaceted approach, including field research to better understand bear ecology and distribution.

Arctic Program

The Saint Louis Zoo partners with Alaska Native villages to work toward a common goal of climate change mitigation and polar bear conservation. Key priorities also include educational outreach and youth support, subsistence awareness and Traditional Ecological Knowledge awareness. Zoo employees regularly provide STEM (Science, Technology, Engineering and Math) and conservation-based educational programming to children in the villages.

Asian Turtle Conservation Program

Southeast Asia, a hotspot of turtle diversity, boasts over 90 species. Asian freshwater turtles are harvested unsustainably to meet demands from food, pet and medicinal trades, causing massive population declines. This Program supports efforts to develop sustainable assurance colonies. The Saint Louis Zoo Department of Herpetology manages

five species of Asian turtles for the Association of Zoos and Aquariums through Species Survival Plans (plans that help ensure sustainable animal populations).

Crocodile Conservation and Research in Cuba

Crocodiles are indicators of ecosystem health. Working with Cuban conservation experts, this Program supports the conservation of the critically endangered Cuban crocodile, a flagship species for the conservation of the Zapata Swamp ecosystem in Cuba. Experts help conserve these animals through ongoing field studies, habitat conservation and conservation breeding for population augmentation in the wild.

HUTAN – Kinabatangan Orangutan Conservation Programme

HUTAN, a French NGO, has been operating in Sabah, a Malaysian state in the northern part of Borneo, since 1998. Their primary area of operation is the lower Kinabatangan floodplain, which harbors a remarkable diversity of wildlife, including orangutans. The HUTAN team leads a variety of orangutan conservation and research projects. The WildCare Institute provides integral core program support plus funding to help with primate surveys and monitoring orangutan corridor use, including by bridges over man-made tributaries of the Kinabatangan River.

North American Songbird Program

Many North American songbird populations are in drastic decline. In fact, it is estimated that we have lost approximately 2.9 billion songbirds throughout the U.S. and Canada since 1970. This Program seeks to raise awareness of the threats to songbirds, such as building collisions, free-roaming cats

and light pollution. The Saint Louis Zoo is also a North American Songbird SAFE (Saving Animals From Extinction) program partner. The SAFE program harnesses the collective expertise of zoos and their resources to save species and promote conservation efforts.

Okapi Conservation

Okapis are an elusive relative of the giraffe, native only to the Democratic Republic of Congo. The WildCare Institute supports the Okapi Conservation Project with its work to secure a protected area for okapi in one of the most biologically diverse places on Earth, the Ituri Forest. It also supports local communities by training and equipping wildlife guards, providing community assistance (such as clean water, medical services and school supplies) to the people living next to the reserve and offering conservation education.

Partula Snail Conservation

Partula snails once populated the South Pacific Islands, from Palau to the Society Islands, including Tahiti and Moorea. These snails, however, experienced a devastating decline when the predatory rosy wolf snails (*Euglandina rosea*) were introduced to the islands in the 1970s as a form of biological control. In 1990, the Saint Louis Zoo initiated the Partula Species Survival Plan (SSP) to manage the Partula populations on a national scale, and Zoo experts continue to coordinate this plan.

Polar Bears International Program

The WildCare Institute partners with Polar Bears International, a non-profit organization dedicated to worldwide conservation of the polar bear and its habitat. The WildCare Institute supports Polar Bears International's maternal den study, conducted by scientists in

Svalbard, Norway, to document the denning behavior of polar bear mothers that are choosing to den on land, possibly sensing that the sea ice is too unstable.

Rhino Conservation Program

Black and white rhinos are critically endangered. The greatest threat to rhinos is illegal poaching for their horns, which are in demand for traditional medicine. The WildCare Institute supports conservation initiatives for rhinos in Kenya and Zimbabwe, including the International Rhino Foundation's Stop Poaching Now initiative.

Save the Tasmanian Devil Program

The Tasmanian devil was once common throughout the island state of Tasmania, but the species has experienced a rapid decline due to the rare devil facial tumor disease, which has spread throughout the population. In response, the Save the Tasmanian Devil Program was established in 2003 by the Tasmanian government. The WildCare Institute has provided financial support to the Program since 2015.

Spring Peeper Program

Based on a national study, there is an estimated 2 to 3% decline in frog and toad populations across the Midwest, which began in the 1990s. Observations from local frog and toad community science projects indicate a possible absence or decrease of three members of the hylidae family (spring peepers, chorus frogs and cricket frogs) within the St. Louis area. This Program's goal is to identify, maintain and increase current urban populations of these three local frog species via crowd-sourced monitoring and focused acoustical surveys to track frog populations.

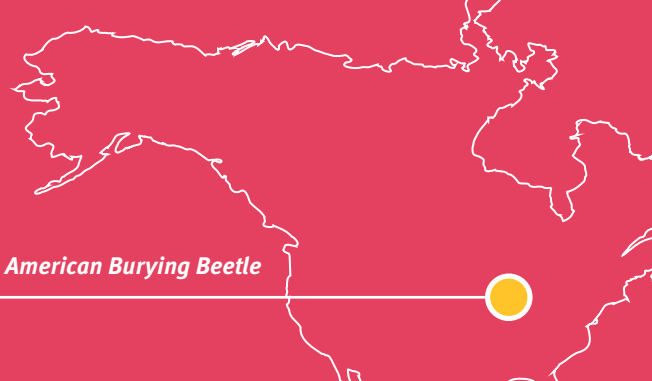
CONSERVATION IN **ACTION**

2021 was the
10th year of the
Center's reintroduction
efforts in Missouri.

The Reintroduction of the American Burying Beetle in Missouri Prairies

The American burying beetle is one of the animal kingdom's best recyclers and a necessary part of our ecosystem. Sadly, this bright red-orange insect has been in decline for many years, likely due to habitat loss and fragmentation.

The Center for American Burying Beetle Conservation has successfully developed a zoo-based breeding program for this endangered insect species and is now working to reintroduce and monitor beetles raised in human care in southwest Missouri. In 2021, the 10th year of the Center's reintroduction efforts in Missouri, 182 American burying beetles were released to Taberville Prairie in St. Clair County. Saint Louis Zoo employees as well as a team of conservation biologists at the Missouri Department of Conservation will continue to study and support this species, in hopes that it may thrive in this region once again.



American Burying Beetle

The Center for
American Burying
Beetle Conservation
is committed to
reintroducing beetles
raised in human care
to parts of the
species' former range
in southwest Missouri.

182

BETTER REINTRODUCED
IN MISSOURI





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Groups of third graders visited Forest Park in St. Louis for nature hikes and animal observation through the **Center for Conservation in Forest Park**.



Forest Park, St. Louis' Premier Outdoor Classroom

After a long hiatus, students from The School District of University City eagerly returned to Forest Park in fall 2021 for lessons in native wildlife and conservation. Led by Saint Louis Zoo Ungulate Keeper Ben Woodruff, a dozen groups of third graders had a chance to enjoy nature hikes and animal observation in the park's fascinating urban ecosystem. The **Center for Conservation in Forest Park** emphasizes education and empathy toward the many plant and animal species that rely on the health of these park habitats they call home.

Woodruff's conservation curriculum gives students a chance to explore Deer Lake and the surrounding prairie, where they study tadpoles, frogs and toads; safely collect native pollinators for an up-close look; and quietly observe the park's wide variety of birds.

"Forest Park is a great place to get outside and enjoy nature," Woodruff explains. "Today, many kids don't have enough opportunities to get outside and explore. I hope trips to this incredible park will foster an appreciation for nature and animals in the students, or at the very least, an appreciation for the world around them."

Saint Louis Zoo Celebrates Birth of Captive-Born Glass Frog

Amphibian populations in many parts of the world are in a state of rapid decline.

Since 2006, the WildCare Institute has partnered with the **Jambatu Research and Conservation Center for Anfibios** to promote amphibian conservation efforts in Ecuador — home to over 9% of the world's amphibians, many of which are found nowhere else on Earth.

Following a multi-year effort, the Zoo's care team at the Charles H. Hoessle Herpetarium successfully reproduced an Ecuadorian glass frog, or *Hyalinobatrachium aureoguttatum*, in 2021. This rare species is exclusively found in the Chocó ecoregion of Ecuador, which is constantly threatened by deforestation. Reproduction and management of this project has been underway since 2014, with caretakers at the Herpetarium keeping a close eye on the frogs in an effort to create the best possible environment for breeding.



Students take part in a turtle safari.

"Forest Park is a great place to get outside and enjoy nature. Today, many kids don't have enough opportunities to get outside and explore. I hope trips to this incredible park will foster an appreciation for nature and animals in the students, or at the very least, an appreciation for the world around them."

— **Ben Woodruff, Saint Louis Zoo Ungulate Keeper and representative of the Center for Conservation in Forest Park**

Turtle Safaris Bring Awareness, Appreciation for Conservation Efforts

To help people better understand the challenges facing the world's chelonian population, Saint Louis Zoo Conservation Education Liaison Keri Lammering led a series of virtual and in-person "turtle safaris" for several groups throughout 2021. Groups included classrooms from the Ferguson-Florissant School District, members of the public who sign up through the Saint Louis Zoo's Education Department and the Saint Louis Zoo Young Professionals group.

The safaris are just one tool the **Center for Chelonian Conservation** uses to raise awareness about the critical work it is doing to conserve wildlife. Students not only gain experience using scientific equipment alongside an expert, but they also gain a better understanding of their connection to nature. After all, there's no better way to ensure a future for turtles, as well as our planet, than by empowering the next generation of conservation leaders.

A Rewilding Blueprint for Confiscated Tortoises

Chelonians (turtles and tortoises) are the most threatened group of vertebrate species on Earth due to a variety of devastating factors including infectious diseases, habitat destruction, environmental degradation and illegal wildlife trafficking. Community engagement and partnership is critical to the survival of this highly endangered species.

In 2021, the **Center for Chelonian Conservation** team performed health assessments for 1,000 radiated tortoises before their release



9,476

Zoo-raised endangered hellbenders have been reintroduced to the wild in Missouri.

into the wild. These tortoises were previously confiscated from the illegal pet trade and placed back into a protective community within their native forest habitat in southern Madagascar.

This pilot release (performed in conjunction with the Turtle Survival Alliance) will serve as a blueprint for rewilding more than 26,000 confiscated tortoises. These tortoises are being monitored post-release with radio-transmitters and GPS trackers to study their movements, habitat use and survival in order to help guide future tortoise releases.

Here Come the Hellbenders

All grown up! Over 800 Ozark and eastern hellbenders raised from eggs at the Saint Louis Zoo were released into their native Missouri Ozark rivers during the summer

of 2021 with support from the **Ron and Karen Goellner Center for Hellbender Conservation**.

These releases are part of the Center's ongoing efforts to bolster Missouri's native hellbender populations, which have declined more than 70% over the past 40 years. The Center provides advanced artificial streams at the Saint Louis Zoo where these large aquatic salamanders can breed, and their offspring are cared for in separate habitats. Once grown, the hellbenders are eventually released into the wild.

Since 2008, 9,476 Zoo-raised endangered hellbenders (8,599 Ozark and 877 eastern) have been reintroduced to the wild in Missouri.

Saint Louis Zoo Makes a Difference for Mountain Vipers

Armenia is home to 58 species of amphibians and reptiles, many of which are in rapid population decline. The once-common mountain vipers, longtime catalysts for managing disease-spreading rodent populations as well as a source of food for other animals in the food chain, are highly vulnerable to extinction due to overgrazing, agriculture and over-collection for the exotic pet trade. They also have unnaturally high mortality due to human persecution.

The **Center for Conservation in Western Asia** has been a leader in the conservation of Armenian mountain vipers for nearly two decades. Through this work, the Armenian Conservation Breeding Center opened in the heart of Armenia in 2019. It focuses on breeding vipers and other endangered reptiles native to the region to help stabilize populations. The breeding center is a critical conservation step for Armenia’s shrinking reptile and amphibian population. In 2021, the breeding center team assisted with the release of nine Caucasus Blotched rat snakes (*Elaphe urartica*), born at the center and released back into the wild in Armenia.



Female Asian toads lay 10,000 eggs in one sitting.

Halting the Spread of Toxic Toads in Madagascar

Madagascar is home to many plant and animal species that are found nowhere else in the world. Unfortunately, a wave of invasive species is degrading the island ecosystem and threatening many of these unique native species in the process.

Asian toads, likely introduced through the ports, are a highly toxic, extremely fertile invasive species responsible for putting many of these native species — especially reptiles and amphibians — at risk of extinction. Without snakes to eat rats and other disease-carrying animals, the health of Madagascar’s human population is also in jeopardy.

The **Center for Conservation in Madagascar** is committed to working with the government of

Madagascar as well as international invasive species specialists to eliminate these threats. The Center’s biological control efforts are aimed at reducing Madagascar’s Asian toad population (which is currently estimated to be between 20 and 25 million) and halting its spread through the use of biosecurity measures, such as a toad-proof fence that extends underground at trial sites in Betampona and Parc Ivoloïna. The Center also has worked with local officials to develop waste management practices that prevent the toads, which are frequently found sheltering in trash piles, from being relocated to new areas.

Although the Center’s work has been much delayed by the pandemic and other setbacks (including fire and floods!), it was able to take several steps forward in 2021. The Center worked with regional and national government entities to identify key sites for the project and to pass legislation declaring the toad as an invasive species and will continue work on its toad fence in 2022.

In 2021, the team developed a plan to install **1,000** meters of fencing to contain the Asian toad, an invasive species.

Engaging Communities to Protect Carnivores

The **Center for Conservation of Carnivores in Africa** works with partners like the Lion Landscapes organization to help engage communities living with carnivores and provide protection incentives. Lion Landscapes developed benefit-sharing programs that address community needs — such as education, veterinary care and materials for fencing — in exchange for wildlife conservation agreements. In 2021, the organization began offering community health insurance, a program well-received by the community. Now, up to six people from the same family can enroll in Community Health Fund (CHF), a government program providing free, one-year access to any public health facility in the country. Since January 2021, more than 1,000 people have taken advantage of this benefit in exchange for their willingness to protect wildlife on their lands.



Coahoma Orchard is a new project supporting urban descendants of the Mississippi Choctaw in the City of St. Louis.

Spotted! A two-spotted bumblebee — found in the eastern half of the United States — pollinates a purple prairie clover.



Pollinators Enhancing the Native Foods Native Peoples Initiative

Through its Native Foods Native Peoples Native Pollinators initiative, the **Center for Native Pollinator Conservation** assisted two new programs in 2021: the Kansas City Indian Center and Coahoma Orchard in St Louis.

The Kansas City Indian Center, founded in 1971, serves a diverse Native American community.

In the Greater Ville area of St. Louis, the Center works to support descendants of the Mississippi Choctaw as part of the Coahoma Orchard project, founded by Dail Chambers of African/Mississippi Choctaw descent. Her goal is to unite others of similar heritage to help revive indigenous culture, traditions and foods. The project involves growing traditional wild and cultivated foods and medicinal plants. In 2021, the Center helped plant a variety of native trees and shrubs to support pollinators and wild fruits, including wild plum, serviceberry and chokeberry.

The Center will also create signs to identify the plants and the project. To honor the indigenous people of the area, and with help from the Osage Nation language program and the School of Choctaw Language, the signs will be written in English, Choctaw and Osage.

The Center has worked for a number of years on Reservation and Settlement lands with various Tribes and Nations, but 2021 marks the first year working with Urban Indian communities. Over 70% of Native Americans live in urban areas, and many of them wish to renew their culture and traditions, including food traditions.

Additionally, many Urban Indian communities are food deserts in which residents experience food insecurity. Through the Native Foods, Native Peoples, Native Pollinators initiative, the Center has supplied fruit trees and shrubs, heirloom vegetable seeds and native wildflower seeds, along with tools and equipment.

The Center also hosted a volunteer day for Coahoma Orchard on August 28. Ed Spevak, Ph.D., Center Director and Curator of Invertebrates, and Lisa Kelley, Ph.D., Executive Director of the Saint Louis Zoo WildCare Institute, along with her daughter Marissa, helped put down mulch, build paths and create a gathering prayer circle.

Center Answers Urgent Call in Sahara

The mission of the **Saharan Wildlife Recovery Center** is to link Zoo expertise and resources with meaningful conservation action in the Sahara—and with a silent crisis of extinction underway in the region, its work could not be timelier. One major project includes rewilding the addax, possibly the rarest antelope in the world. Critically endangered, this species numbers less than 300 in the wild. Recently, 15 addax raised in human care in the United Arab Emirates were released into a Wildlife Reserve in Chad. The Center helps underwrite the cost of post-release monitoring of these addax by providing satellite tracking collars. The collars provide insights into how the addax are moving, utilizing habitat and adapting to the wild. The information is also vital for future rewilding efforts.

CONSERVATION ADVOCACY

Amplifying Alaska’s Native Voices for Polar Bear Conservation

The Saint Louis Zoo’s McDonnell Polar Bear Point exhibit is not just a guest favorite — it’s also a highly regarded model for the use of video journals featuring Indigenous voices. It’s a remarkable way for our partners to share their stories and knowledge about Arctic life and polar bears.

Serving alongside representatives from each of the five Polar Bear Range States, Saint Louis Zoo Conservation Education Liaison and WildCare Institute **Arctic Program** Coordinator Lisa Lidgus spent much of 2021 focused on issues affecting polar bears as part of the Climate Change Communications Working Group.

Via virtual meetings, Lidgus used her experience working with the Zoo’s Alaska Native partners to help inform the working group’s discussions.

“Alaska Native people have the most relevant and intimate experience in the U.S. with polar bears and climate change, as it’s something they’ve been grappling with much longer than people in the lower 48 states,” Lidgus says. “It’s imperative that they have a seat at the table and decision-making power about polar bears and their status.”

The group, which also included Katya Gray, the executive director of Alaska Nannut Co-Management Council, developed a 10-year Climate Change Communication Plan. The plan was designed to reach a wide variety of audiences regarding the importance of mitigating greenhouse gas emissions when it comes to polar bear conservation in an effort to bring global action to the ongoing threats to Arctic habitats and wildlife.

The communications plan, which is part of the larger Polar Bear Range States Circumpolar Action Plan, will be rolled out to global stakeholders and interested parties in 2022.

The WildCare Institute’s Arctic Program team collaborates with six Alaska Native villages to maintain the survival of polar bears and a suitable ecosystem.



10

-YEAR ACTION PLAN

*between the Polar Bear Range States
aims to strengthen their efforts in
polar bear conservation.*



Members of the
**Polar Bear
Range States**
include Canada,
U.S., Greenland,
Norway and
Russia.



600 million birds in the U.S.
die each year after blindly
crashing into buildings.

“Lights Out Heartland” Initiative

For migratory birds, a little bit of light pollution can be a big problem! Light from big buildings, street lights and homes can disorient birds and significantly reduce the visibility of the night sky (when the majority of these birds travel), causing birds to lose track of their migration path. This disorientation can even become deadly — it’s estimated that 600 million birds in the U.S. die each year after blindly crashing into buildings.

In 2021, in conjunction with the International Darksky Association (IDA), the Saint Louis Zoo joined the “Lights Out Heartland” initiative, a regional effort to create bird-friendly communities by limiting light pollution during periods of peak bird migration. The initiative reflects the **North American Songbird Program**’s continued commitment to raising awareness about threats to native songbirds and researching ways to support native songbird conservation.

30

NUMBER OF YEARS

Partula snails have thrived under the care of Saint Louis Zoo experts.

Partula snails once inhabited the South Pacific islands, including Tahiti and Moorea, until predatory snails were introduced.

CONSERVATION RESEARCH

30 Years of Care, Conservation and Research: Partula Snails

Partula snails once populated the South Pacific Islands, from Palau to the Society Islands, including Tahiti and Moorea. These snails, however, experienced a devastating decline when the predatory rosy wolf snails (*Euglandina rosea*) were introduced to the islands in the 1970s as a form of biological control. In the 1980s, scientists began to notice the rapid decline of Partula snails, and zoos began to create assurance populations. In 1990, the Saint Louis Zoo initiated the Partula Species Survival Plan to manage the Partula populations on a national scale, and the team at the Zoo's Bayer Insectarium have cared for these unique animals ever since.

Over the last several years, Saint Louis Zoo animal care teams have helped reintroduce these snails in Tahiti through the **Partula Snail Program**. Although reintroductions are on hold in part due to the COVID-19 pandemic, the team continues to study and provide excellent care to the more than 3,000 snails that call the Zoo home.

More than **3,000 Partula snails** are currently in the Saint Louis Zoo's care.

The Saint Louis Zoo initiated the Species Survival Plan for Partula snails. This is a cooperative breeding program, with a number of zoos working together to ensure the survival of the species.



100

giant tortoises have been equipped with GPS tags to better understand the health of the population.



Galapagos Tortoises, Antimicrobial Resistance and You

Turtles are fascinating creatures that help to maintain healthy ecosystems. Unfortunately, chelonians (turtles, tortoises and terrapins) are the most endangered vertebrate group on Earth, due to infectious illnesses, habitat destruction, environmental degradation and illicit wildlife trafficking.

The Galapagos Tortoise Movement Ecology Program (GTMEP), a partner of the **Center for Chelonian Conservation**, has examined and collected biomaterials from hundreds of giant tortoises over the past eight years. By studying these tortoises (including 100 equipped with GPS tags), researchers are able to better understand the health of different populations of giant tortoises in relationship to human presence in the archipelago.

During 2021, Saint Louis Zoo Institute for Conservation Medicine Wildlife Veterinarian Dr. Ainoa Nieto Claudin, working with other

Zoo staff members and Center collaborators, published three peer-reviewed manuscripts in high-impact journals with novel findings on tortoise health. These findings explain the first discovery of antimicrobial resistance genes in Galapagos tortoises and how they change depending on human presence and virus presence.

Despite the social, economic and ecological importance of Galapagos tortoises, very little was known about tortoise health prior to this investigation. These findings represent a starting point for further studies on wildlife health and its implications for the conservation of the Galapagos unique ecosystems.

A Ph.D. Student Spreads His Wings to Help Pacific Birds

In 2021, in collaboration with the Saint Louis Zoo, the Whitney R. Harris World Ecology Center at the University of Missouri-St. Louis, John Bender, a Ph.D. student, was selected as a recipient of the Whitney R. Harris Fellowship in Animal Conservation. This fellowship provides

financial support for zoologists who will become scientific leaders in the field of animal conservation. Bender subsequently joined the WildCare Institute’s partners at **Pacific Bird Conservation (PBC)** as a conservation biologist and will help coordinate the Saint Louis Zoo’s fieldwork in the Mariana Islands. While translocation fieldwork in the Mariana Islands have been hampered by the pandemic, in spring 2022, Bender and his team resumed this important work of rescuing native island birds and translocating (or moving) them to safe islands away from devastating predators. Bender also hopes to incorporate new projects into the PBC scope, including potential for future partnerships that could broaden the work of this WildCare Conservation Center.



Husbandry Manual: The Care & Keeping of Hellbenders

The hellbender is an enigmatic and unique species, and it needs our help. **The Ron and Karen Goellner Center for Hellbender Conservation** has played a critical role over the years in protecting this endangered aquatic salamander as well as ensuring the hellbender’s survival in Missouri’s stream ecosystem.

The Center team has spent hundreds of hours caring for hellbenders at the Saint Louis Zoo and releasing more than 9,000 of them into the wild. To that end, in 2021, the Center released its husbandry manual, which will serve as a guide for conservationists at numerous zoos and universities to further their knowledge of hellbender care.



“Our institution has more experience with hellbenders than any other in the world,” Justin Elden, Zoological Manager of the Charles H. Hoessle Herpetarium says, adding that the manual is a comprehensive resource that documents the Center’s vast experience in keeping, rearing and breeding hellbenders.

“(Hellbender) husbandry and raising them in human care can be challenging, but we have mastered it,” Elden says. “By writing this manual, we are sharing our expertise to allow others to be as prepared as possible to keep hellbenders and ultimately help save them.”

The manual covers a wide variety of topics, including egg and neonatal care, water quality and filtration, reproduction and medical procedures, and much more.



Human-Canid Conflict and Co-Existence in Missouri

Thanks to a two-year appointment to a post-doctoral position with the **Canid Conservation Initiative**, Fernando Najera, DVM, M.S., Ph.D., is now leading the Saint Louis Zoo’s efforts to better understand the ecology and health of Missouri’s wild canid species.

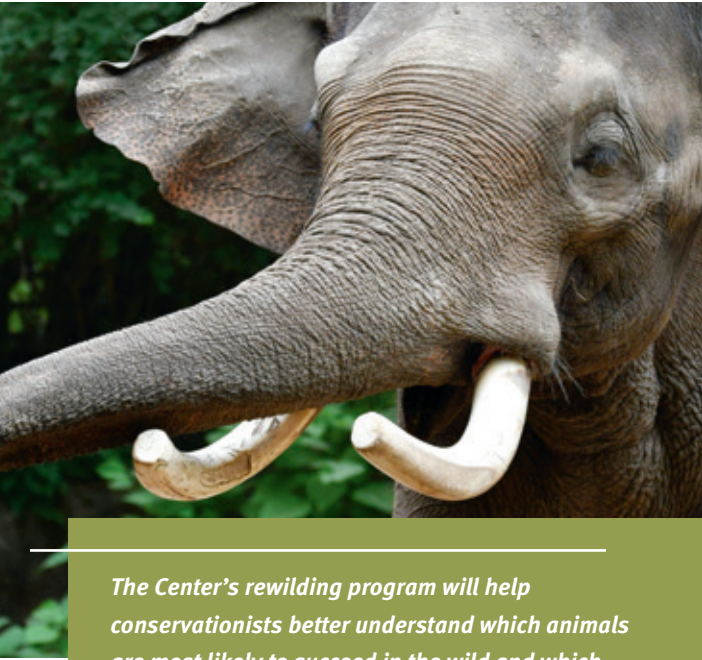
Dr. Najera and the Canid Conservation Initiative team work to capture, anesthetize, attach biologgers (data storage tags) and collect samples from native Missouri canids (e.g., coyotes and red foxes) and other carnivores (e.g., bobcats, raccoons and opossums) in both rural and suburban areas. These data provide an opportunity for the Zoo, as well as its partners at Washington University in St. Louis and the Endangered Wolf Center, to compare the land usage of Missouri’s canid species; examine whether these native carnivores act as reservoirs for diseases affecting humans, domestic animals, native canids and endangered species; and study the native canids’ exposure to rodenticides.

Overall, this research will emphasize the importance of native canids and their role as sentinels, which detect risks to humans by providing advance warning of trouble in the environment. This research also will help the Zoo to develop a model for responsible co-existence with wild canids in the region.

Conserving Wild Elephants in Myanmar

Despite continuing COVID-19 challenges and a military coup, the **Center for Asian Elephant Conservation** and its colleagues working in Myanmar with the Smithsonian Biology Conservation Institute spent 2021 pushing forward with its elephant rewilding project.

These dedicated researchers carefully analyzed elephant movement and habitat use through remote GPS tracking, while also conducting behavioral experiments on individual elephants to assess their neophobia (fear of new foods) and exploratory behavior. The Center hopes to determine whether personality type will impact the elephants’ success after being released back into the wild. Researchers believe the more curious or more aggressive elephants will be more likely to stray into fields and other human-dominated environments and will not survive those encounters.



The Center’s rewilding program will help conservationists better understand which animals are most likely to succeed in the wild and which management choices can ensure success.

Pushing the (Bio)Boundaries of Effective Human-Predator Conflict Mitigation

A partner of the **Botswana Center for African Painted Dogs** — the Botswana Predator Conservation — is working on the BioBoundary Project to help keep predatory animals safe. More specifically, the project calls for researchers to investigate novel strategies to keep predators away from cattle and safely within protected wildlife areas by mimicking airborne odors with synthetic chemicals in an effort to manipulate carnivore behavior.

While using chemical signals to influence predator behavior is no small feat, the Center’s research indicates that it is certainly possible. Their strategy focuses on streamlining the artificial chemical messages to include only the few critical compounds that capture the essence of the message and specifically targets the behavior conservationists hope to change. This strategy simplifies the chemistry and lowers the Center’s overall costs.

In 2021, researchers moved 3M3MB, a single chemical that occurs in leopard and tomcat urine and feces, up the application pipeline to an 18-month demonstration project aimed at keeping kraaled calves safe from leopard attacks. During that time, calves were only attacked when no 3M3MB was being released.

The Center’s research shows that scent-based conservation management tools for predators are within reach. Videos from camera traps, placed to record the animals’ behavior, allow researchers to monitor controlled-release scent dispensers and watch for footage of animals being repelled at close range or fewer videos of a species overall as animals avoid the camera traps’ detection zones due to the experimental odors. Videos of animals sniffing intently, licking, biting, rubbing or scent-marking on the dispensers are a bonus confirmation that predators do respond to single compounds and simple mixtures.

While these are only preliminary results from small-scale screening tests, evidence of livestock-killing predators being repelled by simple, low-cost scent-mark chemicals offers real hope for the prospects of effective human-predator conflict mitigation. To confirm the repellents’ effects, researchers plan to repeat the releases of the same compounds at different times of year and in other locations.



The scientific name for African painted dogs, “*Lycaon pictus*,” means “painted wolf” but they aren’t really wolves.

Researchers Observe Unique “Adoption” Behavior in Orangutans

Orangutans are semi-solitary creatures. Babies are typically cared for by their mother alone, and while adoption is a well-known phenomena among orangutans in human care, it has never been observed among orangutans in the wild — until now!

Visitors to the research site at HUTAN — Kinabatangan Orangutan Conservation Programme, a program supported by the **WildCare Institute**, likely remember Jenny, an adult female orangutan who lived at the location from 1998 until her death in 2020. Jenny was the world’s oldest wild orangutan — researchers estimate she was over 55 when she died — and a loving mother to at least six babies.

Her youngest, Oceane, was born in 2014, and was just five and a half years old when her mother died. HUTAN researchers were worried about the young ape, so they decided to follow her and see what happened next.

Researchers soon noticed Oceane following another female orangutan, Felicity, around in the woods. While at first Felicity, 14, seemed wary, their bond grew closer. Now, researchers say the pair is inseparable, staying audibly and visually connected throughout the day and even sharing a nest at night. Researchers have observed Felicity carrying the much smaller Oceane from tree to tree, grooming Oceane, and even allowing Oceane to nurse from her.

While this is unusual behavior for unrelated orangutans, researchers posited that Felicity, who has not yet had any offspring, may have adopted Oceane to learn about mothering techniques.



A Congolese Study in Sustainable Gorilla Tourism

Mitigating potential anthropogenic disturbances to apes and forests is critical. As foraging preferences can vary between individual gorilla groups — even at small geographic scales — it’s imperative that humans do all they can to avoid disrupting such unique behaviors and habitat use.

Through an environmental monitoring program established in 2021 at the Mondika Gorilla Project study site in the Djéké Triangle outside of the Nouabale-Ndoki National Park, Republic of Congo, the **Center for the Conservation of Congo Apes** is working alongside collaborators to provide information on the availability of great ape resource items provided by the tree community using data on tree phenology and ape behavior. These findings will allow for more informed comparisons of gorilla foraging, behavior and sociality across Central Africa and will help researchers make recommendations about where tourism lodges should or should not be considered due to the impacts on wildlife.

To that end, a multimillion-dollar investment at the Mondika Gorilla Research Station is underway and will offer international tourists an economically viable and sustainable option for gorilla viewing. Visitors are expected to arrive starting in late 2023.

Regrowth After Deforestation in Madagascar

After decades of conservation work in Madagascar’s Betampona Natural Park, the Geospatial Institute at Saint Louis University announced in 2021 a 28% increase in mixed forest coverage and a remarkable 59% increase in evergreen forest coverage within the Reserve’s Zone of Protection. These improvements are significant, given the massive deforestation occurring throughout most of Madagascar.

This reforestation work is vital for Madagascar’s many highly endangered plant and animal specials. Research supported by the **Center for Conservation in Madagascar** and its partners has played a critical role with the study of non-chemical methods of controlling guava and other invasive species that threaten the biological structure of Betampona and other Malagasy rainforests. Thanks to these research efforts, Madagascar National Parks is now taking steps to discuss and develop potential management strategies for the future.

2021 ANNUAL REPORT

Madagascar

59%

The percentage of increase in evergreen forest coverage in Madagascar’s Betampona Natural Park.

28%

The percentage of increase in mixed forest coverage in Madagascar’s Betampona Natural Park.

PHILANTHROPY & AWARDS

The Saint Louis Zoo WildCare Institute works tirelessly throughout the year to find solutions to some of the animal kingdom’s greatest challenges, impacting creatures big and small. Their important work would not be possible without the incredible generosity of philanthropic partnerships.

A Boon for Botswana’s BioBoundary Project

Thanks to a **\$100,000** grant from the Donald Slavik Family Foundation, the **Botswana Center for African Painted Dogs** is able to continue working toward realization of its BioBoundary project, with hopes to have a prototype in place by the end of 2022.



The Center’s African wild dog BioBoundary project represents a remarkable innovation in predator conservation, using species-specific chemical signals to create artificial home range boundaries that deter carnivores from risking lethal run-ins in human-dominated landscapes.

The Center has been working towards its BioBoundary since 2015, with support from the WildCare Institute since 2019, conducting intensive camera trap monitoring of wild dog behavior at multi-pack scent-marking sites (SMSs) and research into the chemistry and behavior of African wild dog scent-marking.

Thanks to this additional funding in 2021, the Center was able to increase its number of camera traps at existing SMSs, implement GPS collars for wild dogs in six packs and employ individuals who can assist with routine camera trap services, site maintenance and video collation. This created opportunities for the Center’s experienced field researcher to focus on collecting fresh scent-mark samples, run scent translocation experiments and extract wild dog behavior from camera trap videos. The increased data yield and greater flexibility in planning and execution will hasten progress toward the development of the prototype BioBoundary.

Global Generosity Funds Temporary Research Station in Peru

Thanks to the help of many individuals, the **Center for Conservation in Punta San Juan, Peru** has a new (temporary) home for its research on Peruvian seabirds and marine mammals. A move was necessary after growing safety concerns made it impossible for staff to continue using government facilities within the natural marine reserve.



Humboldt penguin, found in the coastal region of Peru.

With the support of generous donors, several grants totaling nearly **\$40,000** and a crowdfunding campaign that included matching gifts from Penguins International, the program is able to continue its important research and conservation work with a new field research center where they can monitor animals, including fur seals, sea lions, penguins, pelicans, cormorants and many other sea birds. The program’s new operations center is small and low impact, and it will offer conservationists a place to conduct their research until a newer station can be built in the near future.



Karen Goellner: A True Champion for Hellbenders

In late 2021, the Saint Louis Zoo lost an irreplaceable advocate for the Ozark hellbender with the passing of Karen Goellner. Karen was involved with the Zoo for decades alongside her husband, Ron, and she will always be remembered for being a kind and gracious individual.

In recognition of the Goellners’ incredible contributions to our work with hellbenders, the Zoo renamed the hellbender conservation center to the **Ron and Karen Goellner Center for Hellbender Conservation**. After Ron’s passing in 2006, Karen supported the Center both as a donor and advocate until her passing.

The Saint Louis Zoo is a world leader in the care and conservation of hellbenders. In fall 2021, more than 1,000 hellbenders hatched at the Zoo. Notably, many of these hatchlings are second-generation offspring of several males that 10+ years ago, in November 2011, were among the world’s first successful zoo-bred Ozark hellbenders to hatch at the Saint Louis Zoo. Also in 2021, over 800 hellbenders from the Saint Louis Zoo were released into Missouri Ozark rivers, their native home. The efforts from the Zoo and conservation partners have resulted in over 12,000 successful hatchlings since 2011 as well as nearly 10,000 reintroductions to the wild since 2008.

The Goellners’ support helped bring our hellbender conservation successes to fruition, and we’re grateful for their love for this unique salamander. We will miss Karen deeply and will forever remember her warm, caring and generous spirit.



Karen Goellner joins Zoo staff and partners at an outdoor stream where hellbender conservation work is underway. Their hand positions represent hellbender feet and toes.

Conservation Grant is Great News for Ozark Hellbender Habitat

The **Ron and Karen Goellner Center for Hellbender Conservation** has been awarded a U.S. Fish and Wildlife Service Recovery Challenge Grant, which will allow the Center to continue its important work of saving one of Missouri’s native amphibians.

The grant is awarded to organizations working on high-priority recovery actions for endangered and threatened species. The funds will support a reworking of the Center’s aging indoor hellbender stream. The Center will also be able to move some of its chillers — used to create water conditions that mimic the hellbenders’ natural environment — to a safer and more efficient place outside the facility and will create a temporary staff position to help raise hellbenders.

In Kenya, A Proactive Approach to Zebra Conservation

The **Center for Conservation in the Horn of Africa** plays a key role in sustaining critically endangered species (including Grevy’s zebra) in east Africa while also supporting local communities.

In 2021, the Center and its conservation partner, the Grevy’s Zebra Trust, secured nearly **\$31,000** from the Association of Zoos and Aquariums Conservation Grant Fund that will help Kenyan conservationists better understand the migratory patterns of Grevy’s zebra by using GPS collars to track their key movement areas across all seasons. Data will hopefully help conservationists to partner with developers to identify the least ecologically devastating routes for national infrastructure projects, including railways, oil pipelines, electrical lines and high-speed highways.



While parts of the project have been put on hold due to severe drought in Kenya, these efforts have already seen some success from this proactive approach to conservation, with one planned pipeline being rerouted based on zebra movement data.

PARTNERS

Botswana Center for African Painted Dogs

Botswana Predator Conservation Trust

Center for American Burying Beetle Conservation

Missouri Department of Conservation
The Nature Conservancy
U.S. Fish and Wildlife Service

Center for Asian Elephant Conservation

International Elephant Foundation
IUCN Asian Elephant Specialist Group
AZA Asian Elephant Saving Animals From Extinction Program
Smithsonian Conservation Biology Institute
Wildlife Trust of India

Center for Avian Conservation in the Pacific Islands

Association of Zoos and Aquariums
Commonwealth of the Northern Mariana Islands’ Division of Fish and Wildlife
Pacific Bird Conservation
U.S. Fish and Wildlife Service

Center for Avian Health in the Galapagos Islands

Agency of Biosecurity for Galapagos
Charles Darwin Foundation
Galapagos National Park

University of Missouri-St. Louis
Zoological Society of London

Center for Chelonian Conservation

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Cheetah Conservation Botswana
Cheetah Conservation Fund-Namibia Lion Landscapes-Ruaha Carnivore Project – Kenya/Tanzania

Tanzania Carnivore Center
Tanzania National Parks Association
Tanzania Wildlife Research Institute
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Zoological Society of London
Center for Conservation of Congo Apes
Goulougo Triangle Ape Project
Center for Conservation in Forest Park
Forest Park Forever

St. Louis Department of Parks
The School District of University City

Center for the Conservation of Congo Apes

Goulougo Triangle Ape Project

Center for Conservation in Forest Park

Forest Park Forever
St. Louis Department of Parks
Missouri Department of Conservation

Center for Conservation in the Horn of Africa

AZA Conservation Grant Fund
AZA Giraffe Saving Animals From Extinction Program
Grevy’s Zebra Trust
Ishaqbini Hirola Community Conservancy
IUCN Antelope Specialist Group
Kalama Community Wildlife Conservancy
Kenya Wildlife Service

Lewa Wildlife Conservancy
Northern Rangelands Trust
Ruko Community Wildlife Conservancy and Giraffe Sanctuary
San Diego Zoo Wildlife Alliance
Sera Wildlife Conservancy and Rhino Sanctuary
Toronto Zoo
Zoo Miami

Center for Conservation in Madagascar

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Atsinanana Region, Madagascar
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Centro de Investigação em Biodiversidade e Recursos Genéticos
Chester University (UK)
CIBIO/InBio
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Critical Ecosystem Partnership Fund
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IUCN Invasive Species Specialist Group
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Madagascar Institute for Conservation of Tropical Environments
Madagascar National Parks
Madagascar Voakajy
Ministry of the Environment and Sustainable Development, Madagascar
Ministry of Agriculture, Livestock and Fisheries, Madagascar
Missouri Botanical Garden
MRSN Museo Regionale di Scienze Naturali
Princeton University
Queensland Department of Agriculture (Australia)
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Stellenbosch University (SA)
Tany Meva
United Nations Environment Programme
University of Antananarivo
University of Toamasina
Washington University – Living Earth Collaborative
Whitney R. Harris World Ecology Center – UMSL
World Commission on Environmental Law

Center for Conservation in Punta San Juan, Peru

Áreas Costeras y Recursos Marinos, Pisco – Perú (ACOREMA)
The Center for Environmental Sustainability at the Cayetano Heredia University
Association of Zoos and Aquariums
Local Peruvian governmental agencies

Center for Conservation in Western Asia

Detroit Zoo
Los Angeles Zoo
Ministry of Nature Protection – The Republic of Armenia
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Republican Veterinarian-Sanitarian and Phytosanitarian Center of Laboratory Service (SNCO)
Scientific Center of Zoology and Hydroecology of the National Academy of Sciences of Armenia
Sedgwick County Zoo
The Scientific Center of Zoology and Hydroecology of the National Academy of Sciences of Armenia
Toledo Zoo
World Wildlife Fund-Armenia

Center for Ecuadorian Amphibian Conservation

Fundacion Jambatu
Missouri Botanical Garden
Universidad Tecnológica Indoamérica
Ron and Karen Goellner Center for Hellbender Conservation
Arkansas Game & Fish
Missouri Department of Conservation
Ozark Hellbender Working Group
U.S. Fish and Wildlife Service

Center for Native Pollinator Conservation

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Missouri Department of Transportation
Missouri History Museum
Missouri Humanities Council
Missouri Prairie Foundation/Grow Native
Missourians for Monarchs
Monarch Watch
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Native tribes such as the Ho-Chunk/ Winnebago Tribe and Omaha Nation, Confederated Salish and Kootenai Tribes of the Flathead Nation, and Meskwaki Department of Natural Resources
Nebraska Indian Community College
Pawnee Nation College
Southern Illinois University – Edwardsville

St. Louis Art Museum
St. Louis Audubon Society
Saint Louis University
The City of St. Louis and local communities
University of Missouri-St. Louis
Webster University
Yellowstone to Yukon Conservation Initiative

Ron and Karen Goellner Center for Hellbender Conservation

U.S. Fish and Wildlife Service
Missouri Department of Conservation
Arkansas Game and Fish Commission
Missouri University of Science and Technology
Southwest Missouri State University
University of Arkansas
Stone Hill Winery

Saharan Wildlife Recovery Center

Fossil Rim Wildlife Center
The Wilds
Smithsonian National Zoo
Smithsonian Conservation Biology Institute
The Living Desert
The Republic of Chad
The Republic of Niger
Environment Agency-Abu Dhabi, United Arab Emirates
Dickerson Park Zoo
Milwaukee County Zoo
AZA Struthioniformes Taxon Advisory Group
AZA Antelope Taxon Advisory Group

HONOR ROLL

Charitable gifts and grants received from generous donors in 2021 in support of the Saint Louis Zoo WildCare Institute will be utilized immediately or in the future.



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Pictured below are Saint Louis Zoo team members who helped raise the most donations for the Change for Conservation program.



Dorothy Smith



Judy Harper



Kathryn Albrecht



Paula Albrecht

CHANGE FOR CONSERVATION PROGRAM ACHIEVES RECORD DONATIONS

The Change for Conservation program offers Zoo guests an opportunity to donate an extra dollar to support conservation with every purchase at participating food and retail locations. **We had a monumental year in 2021. In total, staff from Lakeside Cafe, Safari Gift Shop and Treetop Shop raised nearly \$135,000 — the highest amount of donations ever for the Change for Conservation program.** Our frontline staff is instrumental in the success of this project. We offer exclusive Zoo tours to the top earners as a thank you for their commitment to promoting the program.

\$134,811
RAISED
for the Zoo's Change for Conservation program

Saint Louis Zoo WildCare Institute

CONSERVATION COUNCIL

A Gift to Save Grevy’s Zebra



The Saint Louis Zoo WildCare Institute **Center for Conservation in the Horn of Africa** plays a key role in sustaining critically endangered species, particularly Grevy’s zebra. For the first time in decades, the Grevy’s zebra populations in Kenya had been stabilizing due to good rains in 2019 and early 2020, which led to ideal breeding conditions. Unfortunately, back-to-back droughts in late 2020, 2021 and early 2022 are threatening wildlife survival across northern Kenya.

Because of this prolonged drought, in August of 2021, the Grevy’s Zebra Trust, the Center’s longtime partner, with authorization from the Kenya Wildlife Service, started watering and feeding Grevy’s zebra with

supplementary grass hay in Laisamis, one of the driest regions and home to the northernmost population of Grevy’s zebra in Kenya. At the same time, the Grevy’s Zebra Trust also expanded its efforts south to the national reserves of Samburu, Buffalo Springs and Shaba, where over 600 Grevy’s zebra have been observed converging to feed and drink from the Ewaso Ngiro River.

Steve King is a member of the Saint Louis Zoo’s Conservation Council and is committed to the preservation of nature and the conservation of wildlife. When Steve learned that northern Kenya was undergoing a drought crisis that impacted the health and welfare of the Grevy’s zebra population, he did not hesitate to provide funding to support the Center’s emergency efforts to support wild Grevy’s zebra during this dire time.

“I felt that it was important to provide emergency funding so that we could provide the nutrition required for Grevy’s zebra mothers and their foals so that they had a chance to survive this crisis,” he said.

Steve supports several of the WildCare Institute’s Conservation Centers and believes that we should all do our part to respect, value and conserve wildlife. Steve hopes that the efforts to safeguard the Grevy’s zebra population will enable the population in Kenya to continue growing through this drought.

The role of the Conservation Council is to provide the Saint Louis Zoo WildCare Institute with greater insight and understanding of the conservation issues being addressed by the Zoo and to develop stronger advocacy among the Zoo’s boards for its conservation mission. The Council also provides financial oversight to the WildCare Institute budget. We thank these members for their service.

Caryl Flannery, Chair

Matt MacEwan, Ph.D.,
Vice Chair

Michael Abbene

Erica Agnew

Debbie Caplin

Jeff Demerath

Marguerite Garrick

Christina Kimerle

Steve King

Gideon Kotkowski

Judy Kouchoukos

Leanne Latuda

Katie Lineberry

Jonathan Losos, Ph.D.

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Charlie Merz

The newly established Jeffrey P. Bonner, Ph.D., Conservation Fund will benefit the Zoo’s conservation efforts and ensure Dr. Bonner’s legacy will continue long after his retirement.

Dr. Bonner was awarded the Saint Louis Zoo Conservation Award in 2021. To his left: Cynthia J. Brinkley, Chair, St. Louis Zoological Park Subdistrict Commission. To his right: Lisa Kelley, Ph.D., Executive Director, Saint Louis Zoo WildCare Institute.



Celebrating the Founder of the WildCare Institute:

DR. JEFFREY BONNER

At the end of 2021 and after 20 years of service, Jeffrey P. Bonner, Ph.D., retired as Dana Brown President & CEO of the Saint Louis Zoo. As a founder of the Saint Louis Zoo WildCare Institute, we can say that Dr. Bonner is one of the greatest champions for conservation.

The Saint Louis Zoo has always been a leader in saving endangered species, but in 2004, Dr. Bonner had a vision of expanding our conservation efforts and focusing on specific conservation hotspots around the globe. With Dr. Bonner’s leadership and a generous \$19 million commitment from the Zoo Friends Association (now the Saint Louis Zoo Association), the Saint Louis Zoo WildCare Institute was established.

In honor of Dr. Bonner’s legacy and his dedication to the natural world, he was awarded the 2021 Saint Louis Zoo Conservation Award at our Zoo’s 30th Annual Marlin Perkins Society Celebration. At this annual event for our closest friends, we honor those who have given their time, talents and treasure on behalf of the Saint Louis Zoo, and it was only fitting that this award be bestowed to Dr. Bonner.

We also established a named endowed fund in Dr. Bonner’s honor: the *Jeffrey P. Bonner, Ph.D., Conservation Fund*. This fund benefits the Zoo’s conservation efforts and ensures Dr. Bonner’s legacy will continue long after his retirement.

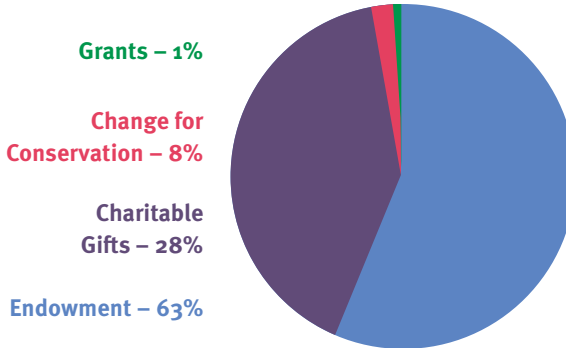
We are honored to celebrate the career of Dr. Bonner, and we’ll be forever grateful for his **tireless dedication to animals and communities around the world** that are the most vulnerable.

FINANCIAL HIGHLIGHTS

Funding Sources

\$1,637,131

The Saint Louis Zoo WildCare Institute has five primary funding sources, shown here:



As of December 31, 2021, the WildCare Institute endowment has grown to over \$30 million.

28% Charitable Gifts

\$453,904

Donations fund over one quarter of the WildCare Institute’s wildlife conservation efforts. While some of these donations are unrestricted, many support specific Centers and projects. These generous donors are listed separately in the 2021 Honor Roll section of the report. Funding comes from private individuals and organizations.



63% Endowment

\$1,039,279

This amount is the harvest from the endowment that was created in 2003 by a \$16,000,000 gift from the Saint Louis Zoo Friends Association (now the Saint Louis Zoo Association). An additional anonymous \$100,000 gift, plus unspent WildCare Institute funds from the first four years of the organization’s operations, have been added to the endowment. Additional gifts from generous individuals have allowed the endowed pool to grow, including the Guinn Cheetah Fund, Dexter Conservation Field Work Fund and Hecker Conservation Fund.

8% Change for Conservation

\$134,811

Our Change for Conservation program offers Zoo guests an opportunity to donate a dollar or more to support conservation with select purchases.



1% Grants

\$9,137

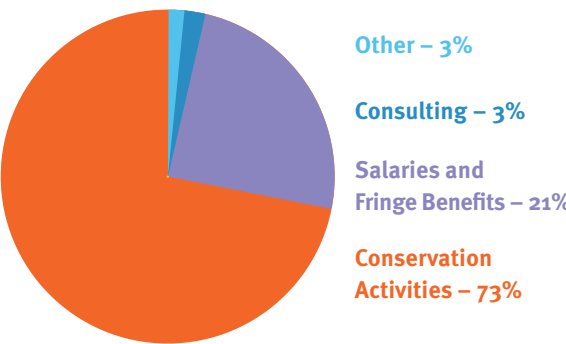
The Zoo is fortunate to partner with government and private organizations that support our conservation efforts through grant funding, including the Missouri Department of Conservation’s ongoing support for our hellbender and American burying beetle conservation efforts.

Other Funding Sources

MARY ANN LEE CONSERVATION CAROUSEL: Proceeds from this attraction help support Saint Louis Zoo WildCare Institute conservation initiatives in the U.S. and around the world. We are forever grateful for Mary Ann Lee and other generous donors.

Expenses

\$1,637,131



21% Salaries and Fringe Benefits

\$349,553

This is the cost of salaries and fringe benefits (including pension, FICA and insurance) associated with WildCare Institute employees.

73% Conservation Activities

\$1,190,687

A majority of the WildCare Institute budget goes to direct support for conservation activity in the field, or is directly related to the field. This covers not only the Centers’ individual budgets but also includes any projects approved through Field Conservation or Field Research Conservation Grants. Field Conservation and Field Research Conservation Grants are competitive grants that provide additional support for conservation projects in the field and are eligible to any partner that collaborates with a WildCare Institute Center or Program. Conservation membership and range-country community engagement programs are also included in this category.

3% Consulting

\$52,000

Several Centers, such as the Center for Conservation in Madagascar and the Saharan Wildlife Recovery Center, provide financial support to contract employees who serve leading roles in managing in-range wildlife conservation research.

3% Other

\$44,891

Includes travel, cost of postage, satellite telephones and some small field equipment.

HOW YOU CAN HELP

As you have seen through this report, the Saint Louis Zoo WildCare Institute accomplished a great deal in 2021. We were able to continue and resume several priority conservation projects while adhering to safety protocols during the COVID-19 pandemic.

This vital work has been undertaken and completed through strategic partnerships, our team’s expertise and passionate donors. We simply could not have done it without you. By using the enclosed response envelope, you become even more of a conservation champion— for an animal, an ecosystem and our world. Your gift will make a difference today and for future generations.

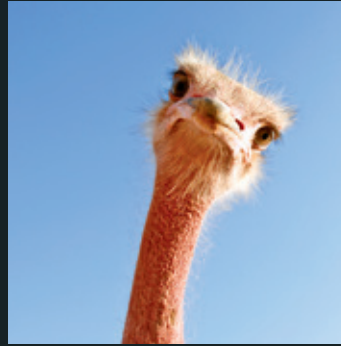


3,000

NUMBER OF GREVY’S ZEBRAS
THAT REMAIN IN THE WILD

Photography by Roger Brandt, Justin Elden, Kari Frey, Geoff Jones, Kevin Kampwerth, Paulo Leroux, Ray Meibaum, David Merritt, Ed Spevak, JoEllen Toler, and many Saint Louis Zoo staff and partners

For more information on contributing to the work of the WildCare Institute, please visit stlzoo.org/wildcare, or contact the **Saint Louis Zoo Development Office** at **(314) 646-4691**.



SAINT LOUIS ZOO WILDCARE INSTITUTE

ONE GOVERNMENT DRIVE, ST. LOUIS, MO 63110

(314) 781-0900 [STLZOO.ORG/WILDCARE](https://stlzoo.org/wildcare)

