Summary of Riverbanks Conservation Support Fund Activity
Fiscal Year 2016-2017

In 1996, the Riverbanks Society Board of Directors established the Riverbanks Conservation Support Fund with the objective of providing assistance to carefully selected conservation initiatives originating both from within and outside of Riverbanks Zoo and Garden. In June 2017 the fund was renamed in honor of retiring president & CEO Satch Krantz for his 44 years of service to Riverbanks and his passion for saving species.

The Satch Krantz Conservation Fund is now in its twenty-second year of existence. This year the availability of funding was announced on the Riverbanks website. Twice annual grant submission deadlines were as follows: 1 December 2016 and 1 June 2017.

Grant awards, including Field Conservation Associates grants, are summarized below:

1 December 2016 Deadline

1) $5,000 to Dr. Arnaud Desbiez of the Royal Zoological Society of Scotland for his project titled, “Why, When and How Giant Anteaters Cross Roads? Understanding Impacts and Effects of Roads on Giant Anteater Populations.”

The specific conservation/management objectives of this project are to:

- Quantify road mortalities and predict future Giant anteater vehicle collisions across the road network of the Cerrado region.
- Assess the influence of roads and traffic on Giant anteater movement and behaviour including avoidance or attraction.
- Understand perception and attitudes of motorists to Giant anteaters and its relation to Giant anteater vehicle collisions.
- Demonstrate how proximity to a road and the associated increase in mortality affects population density, population structure and habitat use.
- Assess the influence of roads on Giant anteater health and body condition.
- Conduct a participatory international PVA on the Giant anteater including other giant anteater researchers, which integrates other studies and

experiences as well as project results to define the threat of roadkill on the Giant anteater.
- Write (with other researchers) and distribute a document defining strategies to prevent Giant anteater vehicle collisions.
- Increase national capacity to conduct wildlife conservation projects.

2) $500 to the South Carolina Wildlife Federation Scholarship Program.

The specific conservation/management objective of this project is to:

- Distribute educational grants to full-time students pursuing environmental education at South Carolina schools of higher education.
- Undergraduate and graduate students are eligible, based on their performance in academia and in related community activities.
- Special attention is paid to a student's leadership and volunteer experience when determining winners of these scholarships.

3) $4,661 to Christine Light of the Turtle Conservancy and Global Wildlife Conservation and Andrea F. Currylow of the University of Southern California for their project titled, "Conservation of the Endemic Chelonians of Sulawesi: Forsten's (*Indotestudo forstenii*) and Sulawesi Forest Turtle (*Leucocephalon yuwonoi).*"

The specific conservation/management objectives of this project are to:

- Conduct status and distribution surveys
- Document ecological data
- Collect health, forage, physiologic and genetic samples throughout the range.
- Initiate long-term projects to be run by investigators, Indonesian university students and residents.
- Guide *ex situ* and *in situ* conservation efforts by contributing to long-term programs, including identification of land areas for protection, development of captive breeding programs and building of assurance colonies for reintroduction programs.
- Empower people through citizen science to achieve higher standards of living by providing access to the information and resources they will need to succeed.

4) $5,000 to Arthur Muneza, M.Sc. and Dr. Julian Fennessy of the Giraffe Conservation Foundation (GCF) for their project titled, "Examining the pathology and severity of Giraffe Skin Disease (GSD) in Uganda and Tanzania."

The specific conservation/management objectives of this project are to:

- Collect and analyze tissue samples from Nubian (Rothschild's) giraffe in Uganda and Masai giraffe in Tanzania.
- Examine and describe the relationship between GSD in Uganda and GSD in Tanzania.
- Study the risk of GSD as a zoonotic disease and determine the population structure of diseased animals.
- Assess whether the diseased individuals are debilitated via observational data.

5) $5,000 to Brandon Semel and Sarah M. Karpanty of Virginia Tech for their project titled, "Evaluating Grassroots Conservation Efforts in Northern Madagascar."

The specific conservation/management objectives of this project are to:

- Assess whether or not this Community Based Conservation (CBC) initiative is successfully conserving species and their habitat.
- Determine the long-term success of these efforts in light of ongoing climate and environmental change that already threaten to drastically alter species abundance and distribution.
- Estimate sifaka population sizes across vegetation cover types and disturbance levels within protected, multiple-use, and unprotected areas.
- Quantify sifaka dietary plasticity and population metrics across forest types and successional states to assess potential for population adaptability y to projected climate-induced and anthropogenic vegetation change (henceforth, global change).
- Investigate genetic diversity across habitats to assess temporal changes in effective population size and sifaka adaptive genetic potential.
- Conduct a habitat connectivity analysis to compare to prioritize corridors for conservation and forest regrowth action between fragments.

6) $6,000 to Dr. Tracey Tuberville and Dr. Kurt Buhlmann from the University of Georgia's Savannah River Ecology Laboratory for their project titled, "Disease implications of using waifs to create viable populations of gopher tortoises."

The specific conservation/management objectives of this project are to:

- Develop useful insight into the disease risks of translocating waif tortoises to create viable populations of gopher tortoises and the associated health implications to recipient populations.

  Waifs are animals that have been injured, collected illegally, or are of unknown origins, and they are generally not considered good candidates for translocation. Because waifs tend to come from multiple sources and

their history is often not known, they may present a disease risk in the recipient population.

7) $5,700 to Greg Tully of the Pan African Sanctuary Alliance (PASA) for his project titled, “The Cameroon Conservation Education Program.”

The specific conservation/management objectives of this project are to:

- To determine the most effective approach to inspiring Cameroonian children to protect their country’s wildlife and other natural resources, which sets the foundation to expand the program by integrating it into the national school curriculum.
- To instill empathy for non-human primates in 2000 Cameroonian youth and make them feel empowered to protect their country’s wildlife, over a five-month period.
- To collaborate with the Ministry of Education and experts on education in Cameroon to integrate wildlife conservation into the national school curriculum, so that all schoolchildren in Cameroon will learn the value of protecting animals and their habitats.

8) $4,475 to Maggie Hirschauer of VulPro NPC for their project titled, “Monitoring breeding activities of endangered and critically endangered vultures.”

The specific conservation/management objectives of this project are to:

- Understand the dispersal and ranging patterns of African White-backed vultures in 3 study sites across South Africa.
- Identify species-specific ecological requirements for breeding success.
- Quantify land management variables present in successful vs. failed nest sites.
- Quantify nest site and pair fidelity for tagged individuals.
- Collate and publish breeding ecological data on the data deficient tree nesting species (African White-backed and Hooded Vultures).
- Establish guidelines for tree nesting species reintroduction programs.
- Reduce threats and deaths at existing colonies/breeding sites.

1 June 2017 Deadline

1) $3,825 to Akwasi Anokye and Emmanuel Amoah of THRESCOAL for their project titled, “Mitigating Human—Crocodile Conflicts: A Bottom’s-Up Approach in the Obuasi Municipality, Ghana.”

The specific conservation/management objectives of this project are to:

- Determine *Mecistops cataphractus* populations in the Obuasi Municipality.

- Develop a *Mecistops cataphractus* distribution map for the Obuasi Municipality.
- Determine the frequency of *Mecistops cataphractus* invasions on fish farms.
- Raise the awareness of various stakeholders in crocodile conservation and environmental protection.
- Reduce instances of crocodiles being killed by training farmers on capturing and relocating crocodiles from their farms into their natural habitat.
- Create a species conservation action collaboratively among stakeholders.
- Publish result of this project in international peer-reviewed journals to make the findings readily accessible to the wider conservation community.
- Train local people in order to leave a long term legacy of local expertise that will provide timely intervention to rescue the species.

2) $5,000 for Ariel S. Espinosa-Blanco of the Centro de Ecología, Instituto Venezolano de Investigaciones Científicas (IVIC) for her project titled, "Using genomics to evaluate reintroduction as a conservation strategy for the Orinoco crocodile in Venezuela."

The specific conservation/management objectives of this project are to:

- Evaluate of the role that past reintroductions have played in the recovery (or lack thereof) of present-day populations.
- Develop a rich set of species-specific genomic markers that will be available for future use in phylogenetic, ecological and demographic studies.
- Produce a set of concrete recommendations about how future releases can take place to maximize their chances of contributing to population recovery.
- Update estimates of population status, age structure, habitat use and connectivity, as well as increased public awareness about this species in Venezuela and Colombia.
- Build key conservation capacity in a mega-diverse region where the present socio-political context makes building capacity a challenge.

3) $4,500 to Milou Groenenberg of the Wildlife Conservation Society (WCS) and Dr. Terry Brncic of the Nouabalé-Ndoki National Park, Republic of Congo for their project titled, "The Mbeli Bai Study (MBS); long-term research and conservation of western lowland gorillas and African elephants in the Ndoki forest."

The specific conservation/management objectives of this project are to:

- Increase our understanding of the ecology, behaviour and health status of western gorillas and other large mammals visiting Mbeli.

- Further develop and apply standardized research protocols and state-of-the art research technologies.;
- Expand and solidify collaborations in order to broaden the scope of the study and to develop a network of specialists to interpret, analyse and communicate to the wider community.
- Engage national researchers in all areas of applied research, project management, and other skills needed to participate in local, regional, and international conservation efforts.
- Assist Congolese university students in successfully designing and defending thesis projects on gorilla/elephant ecology and conservation.
- Promote knowledge exchange, strengthen collaborations and standardize health and behavior data collection protocols through exposure visits between research sites.
- Increase the level of understanding and support for conservation in the local population.
- Support the development of the park's ecotourism program.
- Inform a national and international audience about the plight of biodiversity conservation, the role of the NNNP and the activities and results of the Mbeli Bai Study.
- Serve as a direct deterrence to poachers and ensure additional support for the protection of wildlife through immediate communication with the NNNP protection team.
- Ensure the implementation of a worker health program to limit disease transmission risks.

4) $5,000 to Stacy Jae Scherman, Dr. Virginie Rolland and Dr. Thomas Risch of Arkansas State University for their project titled, "Fall and Winter Roosting Ecology of Southeastern and Rafinesque's Big-eared Bats in Cache River National Wildlife Refuge."

The specific conservation/management objectives of this project are to:

- Increase understanding of the winter requirements of these bottomland forest bats.
- Determine selection patterns of roost trees used by Rafinesque's big-eared bats (*Corynorhinus rafinesquii*; CORA) and Southeastern bats (*Myotis austroriparius*: MYAU) CORA and MYAU.
- Characterize the internal cavity microclimate within the fall and winter in confirmed roost trees in comparison to randomly selected unused roost trees.
- Determine the effects of seasonal winter flooding on CORA and MYAU.

5) $5,410 to Besa Kaoma, Ohenda Linda Kanguya and Ian Stevenson of Conservation Lower Zambezi (CLZ) for their project titled, "Raising environmental awareness in communities living on the outskirts of one of

Zambia key wilderness areas, the Lower Zambezi, through environmental education."

The specific conservation/management objectives of this project are to:

- Achieve a high level of engagement and interest within local communities in the protection of wildlife and natural resources of the Lower Zambezi National Park.
- Improve the level of interest in and knowledge of the value of the environment in the areas surrounding the Lower Zambezi National Park by engaging with scholars and teachers from 60 schools, reaching over 2,500 scholars every year.
- Increase community engagement in wildlife protection through school conservation clubs.
- Monitor and evaluate engagement levels of local school pupils in environmental education and conservation initiatives.

6) $4,908 to Amelia Meier of Duke University for her project titled, "Using African Forest Elephant Behavioral Ecology to Inform Anti-Poaching Strategies."

The specific conservation/management objectives of this project are to:

- Track both remotely and on foot 56 GPS-collared elephants to understand forest elephant movement, resource selection and the ecological drivers of social aggregations.
- Integrate this new understanding of forest elephant social ecology and resource selection with spatial data to predictively model critical elephant distributions over space and time.
- Develop a user friendly application to be used on smartphone technologies that enable park managers to predict elephant hotspots and direct anti-poaching patrols in real-time.

7) $4,368 to Kari Morfeld and Alexa Oestmann of Omaha's Henry Doorly Zoo & Aquarium for their project titled, "Assessing reproductive and metabolic health of the recently imported African elephants: understanding elephant biology to optimize welfare and support sustainability of the population of African elephants (*Loxodonta africana) in* zoos."

The specific conservation/management objectives of this project are to:

- Determine reproductive cyclicity status of females.
- Determine metabolic status of study animals on a monthly- basis and assess patterns of metabolic hormone concentrations throughout the 1-year study period.

- Determine if metabolic hormones are associated with reproductive cyclicity status.
- Determine the relationship between the endocrine factors (reproductive and metabolic hormones) and zoo management factors in the study elephants.

8) $10,000 to Rick Hudson of the Turtle Survival Alliance (TSA) for operating support of the TSA Turtle Survival center (TSC) in Cross, South Carolina.

The specific conservation/management objectives of this project are to:

- Establish captive assurance colonies for carefully selected species of critically endangered turtles.
- Provide emergency veterinary back-up for the Turtle Survival Center, as needed and as is practical.

9) $3,500 to Dr. Stephen Van der Spuy of the Southern African Foundation for the Conservation of Coastal Birds (SANCCOB) for his project titled, "The African Chick Bolstering Project."

The specific conservation/management objectives of this project are to:

- Address the loss of African penguins by supplementing existing wild colonies, and new colonies, should they be established, withhand-reared chicks.
- Monitor the movements of fledglings until returning to colonies to breed as well as monitoring their foraging behavior.
- Assess the viability of reintroduction of chicks reared from eggs from captive-bred African penguins and evaluate the genetic suitability of African penguins in captivity.

10) $4,963 to Alexandra Vlk and Dr. Elizabeth Bastiaans of the State University of New York – College at Oneonta for their project titled, "Wood Turtle (*Glyptemys insculpta)* Nesting Ecology, Mating Behavior, and Genetic Diversity in Disturbed and Undisturbed Nesting Sites."

The specific conservation/management objectives of this project are to:

- Locate and characterize wood turtle nesting habitat in two sites, one disturbed and one protected.
- Connect female mating behavior to population genetic diversity.
- Determine whether differences in female mating behavior may contribute to the observed difference in genetic diversity between these two populations.

11) $3,871.64 for the Riverbanks Field Conservation Associates (FCA) Program.

- Kathy Vause participated in work designed to re-introduce the Bolson tortoise to its prehistoric habitat in New Mexico from 3-11 April 2017.
- Andrea Mueller's participate in the International Elephant Foundation's Sumatran Elephant Conservation Response Units (CRUs) program from 15-25 November 2016.

A total of $91,682 in grants was distributed during fiscal year 2016-2017 (i.e., a combination of the 1 December 2016 and 1 June 2017 funding cycles). Note that grants awarded during the 1 June deadline were distributed during the first part of fiscal year 2017-2018, but have been included in this summary for the sake of consistency with previous year's summaries.

This brings the total support granted by Riverbanks' conservation fund to $858,784 since its inception, providing financial support to 230 projects in 36 countries around the globe.

Select projects supported by the Satch Krantz Conservation Fund are featured in the "Conservation Corner" column of *Riverbanks* magazine.