RIVERBANKS ZOO & GARDEN
columbia south carolina

DATE: 18 September 2013

TO: SAS, Directors

FROM: Ed Diebold

SUBJECT: Summary of Riverbanks Conservation Support Fund activity for Fiscal year 2012-2013

In 1996, the Riverbanks Zoological Society Board of Directors approved the establishment of the Riverbanks Conservation Support Fund with the objective of providing assistance to carefully selected conservation initiatives originating both from within and outside of Riverbanks.

This is the eighteenth year of existence for the Riverbanks Conservation Support Fund. This year the availability of funding was announced on the Riverbanks Web Site. Twice annual grant submission deadlines were as follows: 30 September 2012 and 31 March 2013.

In addition to the $5000 line item for the Field Conservation Associates Program, the Riverbanks AAZK Chapter donated $1000 to the program.

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

30 September 2012 Deadline

1) $5000 to Amanda Vincent and Lindsay Aylesworth of Project Seahorse, University of British Columbia for a project titled, “Making CITES work for seahorses: supporting Thailand as it implements CITES regulations.”

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

- Perform an in-water rapid assessment to identify areas of high seahorse density along the Andaman coast.
- Initiate life history studies of Hippocampus spp. Including survival, growth and mortality leading to the creation of an annual monitoring protocol.
- Generate increased capacity for Thai seahorse conservation and research through the use of local research assistants, training workshops and dissemination of the monitoring protocol at the training workshops.

2) $4880 to Chris Bowden of the Royal Society for the Protection of Birds (RSPB) and Dr. Vibhu Prakash of the Bombay Natural History Society (BNHS) for a project titled, “Establishing an incubation facility for Critically Endangered vulture species in West Bengal, India.”

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

- Construct a new incubation facility at the West Bengal Centre, including a new incubation room, expansion of chick aviaries and investment in specialized aviculture equipment.
- Build capacity, knowledge and expertise at the centre, using international expertise and the transfer of skills and knowledge from the centre that has been set up in Pinjore, where artificial incubation is being used successfully.
- Increase breeding capacity of the centre using artificial incubation techniques.
- Increase numbers of birds held at the West Bengal centre as a result of successful artificial incubation.

3) $4,968 to Dr. Corinne Richards-Zawacki, Tulane University, Department of Ecology & Evolutionary Biology and Dr. Jamie Voyles, University of California, Berkeley, Environmental Science, Policy and Management and Museum of Vertebrate Zoology for a project titled, “Rays of Hope: Identifying factors mediating the survival of Panamanian *Atelopus* populations.

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

- Identify new populations of *Atelopus* species in western Panama.
- Re-visit localities where populations were known to exist prior to the chytrid epidemic. In surviving populations, collect information about the habitats and microhabitats in which the frogs are found, as well as information about the frogs themselves that will provide clues as to why these individuals and populations have persisted after the epidemic while others have not.
- Determine how to ensure the survival of naturally persisting and reintroduced *Atelopus.*

4) $1059 to Javan Bauder and Christopher L. Jenkins, Ph.D. of the Orianne Society for a project titled, “Identifying overwintering habitat requirements of eastern indigo snakes (*Drymarchon couperi*) and eastern diamondback rattlesnakes (*Crotalus adamanteus*) through long-term occupancy monitoring.”

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

- Continue to obtain and compare occupancy estimates for both EIS and EDB and monitor changes in these estimates over time.
- Compare the importance of site- and landscape-scale factors potentially influencing overwintering site occupancy.
- Compare the importance of these factors between EIS and EDB to understand differences in patterns of occupancy.

5) $4700 to Lenin Riquelme of the Fundacion Conservacion, Naturaleza y Vida (Conservation, Nature and Life Foundation - CONAVI) and James Bryson Voirin, New College of Florida (USA) – Max Planck Institute for Ornithology – Smithsonian Tropical Research Institute, for a project titled, "Shielding from extinction the Pigmy Three-toed Sloth (Bradypus pigmaeus) of Escudo de Veraguas Island, Panama - Phase II.

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

- Stop the poaching of pigmy sloths while significantly reducing the destruction of the species' mangrove habitat.
- Conduct a pigmy sloth population survey and a habitat use/behavioral ecology study that will provide a reliable estimate of the actual number of pigmy sloths and their ecology. This survey will form the baseline for a permanent population monitoring program.
- Conduct environmental education activities for 150 local fishermen to create a strong awareness of the need to protect the pigmy sloth.
- Create a fishermen-based conservation committee.
- Achieve 150 fishermen households adopting environmentally sound cooking technology, thus reducing their dependence on charcoal for cooking fuel, improving health conditions and reducing deforestation of mangrove forests.

6) $4630 to Michael Ogle and Phil Colclough of the Knoxville Zoological Gardens for a project titled, "Radio Telemetry of Head-Started Juvenile Bog Turtles (*Glyptemys muhlenbergii*) in East Tennessee."

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

- Enhance the conservation of Bog turtles by better understand the life history of juvenile Bog turtles in natural settings via tracking by radio telemetry for an entire season.

7) $4000 to Rebecca Goldstone and Michael Stern of the New Nature Foundation for a project titled, "Empowering Communities to Protect Declining Ecosystems: The Kibale Fuel Wood Project and Kibale Eco-Char Initiative."

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

- Continue to increase the availability of legal wood and the use of efficient stoves, as it has since project inception and documented by yearly surveys.
- Create and provide briquette recipes that will produce fuel that compares favorably with wood or charcoal (as measured by an increase in use).
- Ensure that the amount of waste traded by partners will be enough to produce as many briquettes as they need to cook for their families.
- See that families who are trading for briquettes will utilize them in an efficient manner and advocate for expansion of the program.

8) $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. This year's scholarship recipients were Joshua Arrants from the University of South Carolina and Pamela Corwin at The Citadel Graduate College.

31 March 2013 Deadline

9) $4580 to Dr. Arjun Amar and Mr. Rowen van Eeden of the Percy FitzPatrick Institute of African Ornithology, DST/NRF Centre of Excellence University of Cape Town for a project titled, "Understanding the population declines of the Martial Eagle in Kruger National Park, South Africa."

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

- Determine if the cause of the decline in the park is due to constraining factors within the park.
- Determine if the cause of the Martial Eagle decline in the park is likely due to constraining factors beyond the parks boundaries.
- Formulate a population model that will identify the population trend in the park and identify the constraining demographic parameter.
- Determine the genetic diversity of Martial Eagles in the park and assess the potential presence of haemo-parasites, such as avian malaria in an effort to understand risks associated with inbreeding depression and disease occurrence in declining populations.

10) $5000 to Arnaud Desbiez, Ph.D. of the Royal Zoological Society of

Scotland and the Instituto de Pesquisas Ecológicas, Brazil for a project titled, “Pantanal Giant Armadillo Project.”

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

- Conduct research on the Ecology and Biology of giant armadillos to understand their function in the ecosystem.
- Conduct research on armadillo health including all other species present in study area.
- Conduct research on health of two species of anteaters present in the study area will be initiated this year.
- Conduct environmental education using giant armadillos as ambassadors for biodiversity conservation.
- Conduct campaigns and outreach for key environmental threats (such habitat alteration, use of poison on termite mounds) using giant armadillos to illustrate these anthropogenic impacts.
- Conduct a pilot study on giant anteaters.

11) $4800 to Dr. J. Bernardo Mesa Cruz and Christine M Proctor of Virginia Polytechnic Institute and State University for a project titled, “Assessing the Occurence of Secondary Anticoagulant Poisoning in the Critically Endangered Red Wolf.”

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

- Take the first step in investigating the ultimate cause of mange related deaths in red wolves by testing liver or blood samples from 20 red wolves for the presence of anticoagulant rodenticides.
- Use the results to justify a large-scale study investigating the relationship between rodenticide exposure and mange mortality in red wolves.
- Reduce the occurrence of mange related mortality and improve the overall health and recovery success of the red wolf population.

11)$7890 to Dr. Brian Arbogast of the University of North Carolina, Wilmington and Travis Knowles of Francis Marion University for a project titled, “Documenting the Mammalian Biodiversity of Sumaco National Park.”

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

- Generate a mammalian species inventory of an underexplored Park/International Biosphere Reserve, located in one of Earth’s most biodiverse regions
- Extend exploration of the exciting preliminary results, including the first documentation of the little-known Bush Dog in SNP, at an elevation > 1,000m higher than previously reported for the species; confirmation of

previously undocumented populations of two of endangered species, Spectacled Bear and Mountain Tapir; multiple photographs of dark, small cats that do not conform to any known species; and multiple species new to science (a new montane coati, *Nasua* sp., and a likely new prehensile-tailed porcupine, *Coendou* sp., from the nearby wildlife sanctuary).
- Support hands-on student involvement, faculty research, and scientific publications.

12) $4400 to Jeanne C. Jones, Ph.D. of Mississippi State University for a project titled, "Influences of Mowing and Prescribed Burning on Soil Nutrients and Forage Quality in Habitats Inhabited by Gopher Tortoises (*Gopherus polyphemus).*"

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

- Evaluate plant community responses to two vegetation management treatments: mowing and fire/mowing.
- Evaluate soil chemistry and forage plant nutrient content within two vegetation management treatments.
- Assess relationships among soil chemistry conditions, forage plant nutrient content, habitat management treatments, and vegetation community characteristics.

13) $4990 to Kelly A. Bradley of the Fort Worth Zoo for a project titled, "Behavior and Spatial Ecology of Hatchling Anegada Iguanas (*Cyclura pinguis*) and an Introduced Predator, Feral Cat (*Felis catus*) During the Hatchling Emergence Period."

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

- Generate a complete picture of hatchling ecology by determining the inter-individual (sex, size), and temporal (day, night) differences in behavior; home range size and overlap; patterns of activities; foraging behavior; habitat selection and use; and dispersal movements.
- Generate a complete picture of feral cat and iguana hatchling interactions in the core nesting area during the fall hatchling emergence period by quantifying actual survival rates and identify causes of mortality.
- Deploy 20 camera traps to generate a rough estimate of overall cat and iguana density in the core nesting area.

14) $2570 to Lorraine Barbosa DVM, MPVM and Shawn Johnson, DVM, MPVM of The Marine Mammal Center (TMMC) for a project titled, "Pharmacokinetics of Orally Administered Ciprofloxacin in California Sea Lions (Zalophus californianus)."

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

- Evaluate Ciprofloxacin pharmacokinetics in California sea lions (Zalophus californianus).
- Improve the treatment efficacy of bacterial infections in California sea lions and other pinniped species at TMMC, as well as other facilities.
- Improve the standard of care for both rehabilitating as well as captive marine mammals.

15) $5000 to Penny Becker, Ph.D., of the Washington Department of Fish and Wildlife for a project titled, “Columbia Basin Pygmy Rabbit Recovery.”

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

- Promote semi-wild breeding in enclosures on site to produce kits for release.
- Translocate wild rabbits from neighboring states for breeding and release.
- Monitor movements and survival of reintroduced rabbits.
- Develop the best methodologies for releasing adult pygmy rabbits.

16) $5996 for Riverbanks Field Conservation Associates Program

  - Riverbanks Senior Bird Keeper, Sarah Faugno, participated as an observer at the 2012 guano harvest at the Humboldt Penguin nesting colony at Punta San Juan, Peru from 25 August – 11 September 2012.
  - Hospital Keeper, Rebecca Pye, worked in the field with Dr. Peter Buss, Head of Veterinary Services at Kruger National Park, South Africa and his team from 6-21 June 2013.

A total of $74,963 in grants was distributed during fiscal year 2012-2013. This brings the total support granted by the Riverbanks Conservation Support Fund to $492,623 since its inception.

Select projects funded by the Riverbanks Conservation Support Fund are featured in the *Conservation Corner* section of the Riverbanks Magazine.