2009 JBZS Conservation Grant Awards

Project Title: Longitudinal population study of Eastern Massasauga Rattlesnakes in Cooperation with the AZA Eastern Massasauga Species Survival Plan (SSP)

Principal Investigator(s) Dan Malone, Animal Care Supervisor, John Ball Zoo

Amount of Award: $2500

Project Abstract :

The Eastern Massasauga Rattlesnake (EMR) is listed as a species of special concern by the state of Michigan and is considered endangered in the 11 other states in its range. Most species experts consider the populations to be declining across the range (with the possible exception of Michigan) due to habitat loss and change, poaching, and road kill. Regional field research projects have been developed to study habitat use, behavior, range, and other factors impacting population change but this project will collect data for less studied factors. Only one other project (a dissertation project on the Lake Carlyle population in southern Illinois) has collected longitudinal data on individuals' reproduction and survival. Our project is designed to begin in spring 2009 and continue for a minimum of 5 years, collecting mark/recapture data on individuals. With data collected on individuals across years, we will begin to quantify survival and reproductive information which is important for understanding current changes in the population and for projecting future change.

Project Title: Determining if there is a Temporal Effect and if Human Disturbance affects *Batrachochytrium dendrobatidis* Infection of Frogs in Michigan

Principal Investigator(s): Matthew Igleski

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Amount of award: $ 2000

Project Summary:

Berger et al. (1998) linked multiple mass mortality events of anurans in Australia and Central America to the disease chytridiomycosis. Chytridiomycosis is caused by the fungus Batrachochytrium dendrobatidis. Only tropical frogs were believed to be affected by chytridiomycosis, but recent studies suggest North American frogs may be susceptible to infection. The proposed study will focus on determining the presence of B. dendrobatidis in the Green Frog (Rana clamitans melanota). The Green Frog has been

documented as a carrier of the fungus in other studies (Ouellet et al. 2005), but has not been sampled in Michigan. During my study I intend to examine two hypotheses. First, I hypothesize that the prevalence of B. dendrobatidis infection will be correlated with human facilitated vectors. The level of disturbance will be assessed using warm water fish species stocking data, angler visitation data, and land use data for each site. Second, I hypothesize that the ability to detect B. dendrobatidis using swab sampling will be different depending on the time of year the samples are acquired. Sampling sites will be chosen throughout the state according to the presence of species of interest. Skin swabs will be used to determine the presence of B. dendrobatidis on the skin. Skin swabbing will involve swabbing an individual for about 30 seconds focusing on the digits of the fore and rear limbs, the pelvic region, and the ventral surface of the frog. DNA will be extracted from the swabs and using real-time quantitative Polymerase Chain Reaction the presence of B. dendrobatidis will be determined.

Project Title: "Proyecto Tití: Expanding our Education Impact to Foster Cotton-top Tamarin (*Saguinus oedipus*) Conservation in Colombia"

Amount awarded: $ 2,500 USD

Principal Investigator(s): Rosamira R. Guillen

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Project Summary:
Cotton-top tamarins (*Saguinus oedipus*) are a critically endangered primate endemic to Colombia, threatened by extensive habitat destruction and illegal capture for the local pet trade. Proyecto Tití was established to develop a long-term conservation program to insure the survival of this charismatic primate. Our conservation program is multi-disciplinary in nature, including field research, environmental education and a successful community empowerment program. However, we have identified the need to enhance and expand our community education programs, in order to increase the basic knowledge about this endemic species and its habitat, to generate a positive behavioral change, and to provide opportunities for people living close to the forest to become involved in conservation activities that will benefit the long-term protection of the cotton-top tamarin and their habitat.

Project Title: The Ostrich Recovery Project in Niger: It takes a village

Amount of Award: $2500

Principal Investigator(s): Kelley Bishop, Sara Hallager

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Project Summary:
The extinction crisis underway in the Sahara and the Sahel has long been overlooked by conservation organizations around the globe. Emblematic of this crisis is the decline of the world's largest bird, the ostrich. As a species, the ostrich was once distributed over a wide area of Africa and into the Middle East, yet today it has been reduced to a fraction of its former range. Specifically the North African ostrich, a unique race highly adapted to arid climates, was once found throughout the Sahara. Today this desert race of ostrich is critically endangered in the wild suffering a 95% reduction in its range. The Sahara Conservation Fund (SCF) in collaboration with local and international partners has been actively involved in ostrich conservation in Niger since 2005. SCF's achievements include field studies, husbandry support, technical training, and health and genetic studies of captive birds. SCF's ostrich conservation project is now poised to begin the next step: to breed genetically pure N. African ostrich for release. The overarching goal for the coming year is to improve the capacity of the people of Kellé to produce ostrich that can be used for reintroduction. With the inititation of the husbandry and management aspects of the project, SCF would like to begin its education and awareness campaign. With assistance from John Ball Society Wildlife Conservation Grant, we can 1) design and print an educational poster for national distribution 2) educate local people and school children about ostrich and their conservation.

Project Title: Status, Distribution and Conservation of Endangered Turtles in Chitwan National Park, Nepal

Amount awarded: $2500

Principal Investigator(s): Bishnu Prasad Shrestha

Organization:
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Project Summary:
Nepal is rich in biodiversity due to altitudinal range and climatic variation. Among 14 turtle species found in Nepal, *Kachuga kachuga*, *Kachuga dhongoka*, *Indotestudo elongate* and *Melanochelys trijuga indopenisularis* are critically endangered, endangered and near threatened category of IUCN respectively. Chitwan national park supports critically endangered and endangered turtles i.e. *Kachuga kachuga*, and *Kachuga dhongoka*; and other turtles. Due to lack of detail survey, turtles life of this area remains very little known. Due to high exploitation of these turtles for food and traditional medicines and lack of conservation education programs, these endangered turtles are in threat of extinction. The primary objective of this project is to assess the present status and conserve these species in their natural habitat. Specifically, this project will assess population status, distribution pattern, conservation issues and conduct community outreach and conservation education programs for turtle conservation. Preliminary survey, direct survey, GPS mapping, interview and secondary data collection will be the major methods applied. Similarly, School teaching program, nature walk, essay and drawing competition, brochure

publication, conservation board establishment and talk program are major programs for awareness creation. The current status and distribution pattern of turtles provides baseline information to turtle conservationist to develop the management plan of turtle conservation in their natural habitat. It will also help for reptiles' conservation and research in Nepal. Strengthening and awareness raising programs at local leadership level (local people and school children) will play long lasting contribution in conservation of threatened turtle species in the project area and ultimately in nature conservation.

Project Title: The Impact of Fruit and Browse Consumption on Regurgitation and Reingestion in Captive Western Lowland Gorillas

Amount awarded: $470

Principal Investigator(s): Diana Marsilio, M.Sc (Student Researcher
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Project Summary:
Appetitive behavioral disorders, such as regurgitation and reingestion (R/R), are concerns to the management of great apes in captivity. These behaviors relate in part to differences in captive and wild diets. Specifically, captive western lowland gorillas receive less fiber and much more sugar in their diets compared to free-ranging conspecifics, and both of these variables have been implicated in R/R behavior. We will conduct a behavioral study by testing the independent and combined effects of providing supplementary fiber (in the form of browse) and fruit reduction on R/R behaviors in two gorilla groups at Port Lympne Wildlife Park in England. Behavioral observations of R/R will be carried out across all following phases of our study.

In addition, food consumption patterns amongst individuals will be observed in order to assess whether individual intake of fiber and sugar are linked to rates of R/R. This study design will allow us to independently assess the roles of browse and fruit in the maintenance of R/R behavior, as well as to assess their combined impact. As we are conducting another baseline data collection period at the end, this provides a more powerful approach to ensure that any changes observed in behavior were linked to dietary modifications and not to other external factors. Overall, we aim to improve the physical and psychological health and welfare of gorillas in captivity to highlight gorillas as a flagship species in zoos.

Project Title: Growing Together; Lemurs, Bamboo and the local Community; Kianjavato, Madagascar"

Amount awarded: $1000

Principal Investigator(s): Edward E. Louis Jr. Ph.D., DVM

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Project Summary:

Madagascar is home to unique biodiversity found nowhere else on Earth. Due to human encroachment, over 90% of the original forests have been destroyed. Particularly susceptible to extinction risks are endemic lemur species, such as the Greater Bamboo lemur (*Prolemur simus*). Once widespread throughout the island (Godfrey and Jungers 2003; Schwarz 1931), *P. simus* is currently known only to exist within a few extant populations in southeast Madagascar, including Kianjavato.

In order to protect remaining populations of *P. simus*, the Madagascar Biodiversity and Biogeography Project (MBP) has established an ongoing monitoring program in Kianjavato involving the local community. Conservation cannot come at the expense of the local people. In 2007, the MBP distributed 700 educational packets, including conservation-based coloring books, crayons and notebooks to primary schools.
Few children in Madagascar realize the importance of their unique biodiversity with little or no emphasis placed on their native flora and fauna or their distinct culture. Nearly 45% of the population is under the age of 14 (www.About.com) creating an opportunity to educate and influence the next generation of Malagasy leaders. Educating children promotes knowledge and understanding of their unique environment, empowering them to take responsible action.

This proposal aims to connect children with the forest to ensure the long-term survival of the Greater Bamboo lemur and its habitat through a multidiscipline and integrated program of local community involvement and education. This project will be supported by a teacher training workshop, environmental education suitcase, and a fieldtrip to Kianjavato Classified Forest. The program will integrate a series of evaluation components to measure outcomes.

The combination of local education and conservation-based programs at primary schools and the monitoring programs managed by the people of Kianjavato, results in both partners (conservation and community-based programs) becoming beneficiaries of the conservation of this species.