

The Guatemalan beaded lizard (*Heloderma horridum charlesbogerti*) has not been formally Red listed as a subspecies, but is clearly critically endangered with an estimated 100-to-200 individuals remaining in its dry forest habitat, the size of a Texas cattle ranch, surrounded by unsuitable terrain. Severe pressures including habitat loss and degradation, illegal collection and indiscriminate killing by local villagers, threaten this animal with imminent extinction. After many reports of a beaded lizard from the Motagua valley of Guatemala, scientists first observed a specimen in 1984 and later described *Heloderma horridum charlesbogerti* in 1988. With no reports of live individuals from the time of its description into the mid 1990s, the lizard was thought by some scientists to be extinct

### PROJECT HELODERMA: THE BEGINNING

In June 2002 Zootropic, a Guatemalan NGO, began a long-term, integrated conservation program for the lizard involving field research, public education, local community capacity building, and habitat protection. In that year Luis Alvarado and Rodrigo Botrán, of Zootropic, were searching for a student to conduct a research project on Heloderma. Dr. Michael Dix of the University of Guatemala put them in contact with Daniel Ariano, a 20-year old un-

dergraduate with a keen interest in both herpetology and conservation. This interest led him to accept the challenge and risk of trying to develop a research project with such a rare and elusive species.

As is true of many grass roots conservation efforts, the start of Project Heloderma was not easy. Only very limited funding (\$ 40/month) was available from Zootropic, but was sufficient to cover two bus trips to the research site. No vehicles were available and the trip from Guatemala City to the site in the Motagua valley took seven hours each way. Daniel was able on his own to secure funds from other sources to be able to conduct research and to eat.

Again, as is true of many conservation projects, trial-and-error and luck play major roles in success or failure. Knowing virtually nothing about the species, Daniel traveled to the type locality and interviewed local villagers about their experience with beaded lizards and its continued existence in the area. As luck would have it, a keystone step in the success of the project occurred when Daniel met a particular villager named Gilberto Salazar. A local newspaper ran an article highlighting El Arenal, a town in the Motagua valley, featuring a photo of Gilberto with a Guatemalan beaded lizard. The caption on the photo described Gilberto as a poacher who sold the animals to traders. This photo was proof that the lizard still existed, at least until recently, and that Gilberto new how to find them so Daniel went to search for the town and to look for Gilberto.

Once Daniel finally found Gilberto there was more work to be done. An angry Gilberto confronted Daniel at gun point to find out what he wanted from him. After a long conversation, from a distance, Gilberto finally

agreed to show Daniel beaded lizard habitat. That was the beginning of a wonderful association with the program in which Gilberto transitioned from a poacher to an active conservationist, became expert with the use of radio telemetry techniques and is now employed by Project Heloderma.

### OVERALL CONSERVATION PROGRAM

In the seven-plus years that Zootropic's program has been active; the beaded lizard has become a flagship species for the Motagua Valley and the impetus for the government of Guatemala to undertake initiatives to conserve its dry forest habitat. In November 2005, with sponsorship from The Nature Conservancy, Zootropic organized and hosted a strategic planning workshop in Guatemala that developed a National Strategy for Guatemalan Beaded Lizard Conservation. The workshop was attended by all the principal governmental agencies responsible for conservation initiatives in Guatemala along with outside conservation groups and zoological institutions including: Dr. Daniel Beck, the Detroit Zoo, Arizona-Sonora Desert Museum, and Zoo Atlanta. In 2006, the Project's capacity, vision and technical capability were greatly enhanced by the addition of the International Reptile Conservation Foundation (IRCF) as a new partner. At present, the Project's principal partners are Zootropic, IRCF, and Zoo Atlanta. Our mission is to conserve the critically endangered Guatemalan beaded lizard and its habitat in the Motagua Valley by means of an integrated program of research, public awareness and education, local capacity building, ecological restoration, head starting and reintroduction, and habitat management.

CONTINUED, PAGE 24

### PHOTOS FROM LEFT TO RIGHT:

1 - Daniel Ariano of Zootropic (Research and Conservation Projects, Director), the principal researcher responsible for Project Heloderma, giving a hands-on lecture as part of the educational program to dispel the negative myths surrounding the beaded lizard and to promote its conservation. © Daniel Ariano, Zootropic

2 - Guatemalan Beaded Lizard © Michael D. Kern IRCF

3 - Habitat degradation and deforestation from corn farming within the range of the Guatemalan Beaded Lizard in the Motagua valley.

4 - School children, from schools surrounding the Motagua valley, wearing conservation based T-shirts distributed as part of the Project Heloderma educational program. T-shirt production and distribution was supported by a grant from the Disney World Wide Conservation Fund. These shirts may be the only new piece of clothing for many of these children all year. © Daniel Ariano, Zootropic

5 - A female Guatemalan Beaded Lizard with attached radio-transmitter enters a shelter. Five years of radio-tracking studies have provided data on Natural History, home-range size, critical habitat, reproductive biology, shelter use and egg laying sites. In addition this data had been instrumental in guiding land purchase decisions. © Daniel Ariano, Zootropic



# PROJECT HELODERMA

## A Conservation Program for the Guatemalan Beaded Lizard

## IN-SITU FIELD INITIATIVES

The initial field surveys and subsequent radio telemetry studies established and provided essential data concerning population size and viability, activity, land use, home-range size, shelter use for both the dry season and egg laying, reproductive biology and important micro-habitats. Using these data as a guide, a critical piece of mountain habitat was purchased (funded by grants from Eli Lilly, Reptile Breeders Expo, Toronto Zoo, Oklahoma City Zoo); the site comprises a 125-acre footprint (total land area of 1,000 acres). In addition funding for a stage-one breeding/head start facility has been obtained (funded by a grant from FCA of Guatemala) and is currently in the design phase. Once it is completed, local villagers will be hired to run the day-to-day operations. Recently, Zootropic has set up three pairs of Guatemalan beaded lizards in breeding groups in conjunction with the Museum of Natural History in Guatemala City and with improved husbandry based on field study data; these animals have produced eggs (non-viable) for the first time in seven years. With this news, there is hope that these animals will serve as the founding group once the breeding facility is completed. The data from the project's field studies have served to successfully bring about the elevation of the beaded lizard to CITES I conservation status.

## EDUCATION INITIATIVES

The Guatemalan beaded lizard has historically been greatly feared by the local people due to its notoriety as a highly venomous and very dangerous animal. According to myth, the lizard stings with its tail (Hence the name *Escorpión* or scorpion); its venom is so powerful that it can pass through the shadow of a person to envenomate them; its breath can cause dizziness and disorientation in people; and lightning only strikes where a lizard is hidden underground.

The education program has concentrated on dispelling these myths and involving the local people in the conservation process. Today the education program, with the help of two grants from the Disney World Wide Conservation Fund has been expanded to a lecture series complete with a portable speaker system and, with the donation of a four-wheel drive vehicle (grant from IRCF), is able to visit all the schools surrounding potential lizard habitat in the valley. For 2007–2008 the Disney grants have provided for “needs based” distribution of conservation themed t-shirts to the children at each school visited and for notebooks, paper and pencils (like gold in the valley) to be given in 2008–2009.

By the end of 2008 more than 30,000 school children and farmers in the Motagua Valley have attended the program, which includes presentation of live specimens, informational handouts, interactive magazines, and learner assessment questionnaires. The people have learned through this interaction (especially of the live beaded lizard) that the myths they grew up were false. Directly because of this program the number of lizards killed by local inhabitants has been reduced to near zero. The program maintains a high profile locally and recently has garnered some international awareness through public media, international meetings, and political outreach. Indeed a cement company in the valley calls its product “*Escorpión* – a cement strong enough to resist the dry climate of Motagua”. In addition, this program has fostered a great deal of local community pride by involving people in the conservation of the endemic beaded lizard. This ability to work with local villagers and top governmental agencies is critical for a long term conservation program.

---

BRAD LOCK IS THE ASSISTANT CURATOR OF  
HERPETOLOGY AT ZOO ATLANTA