

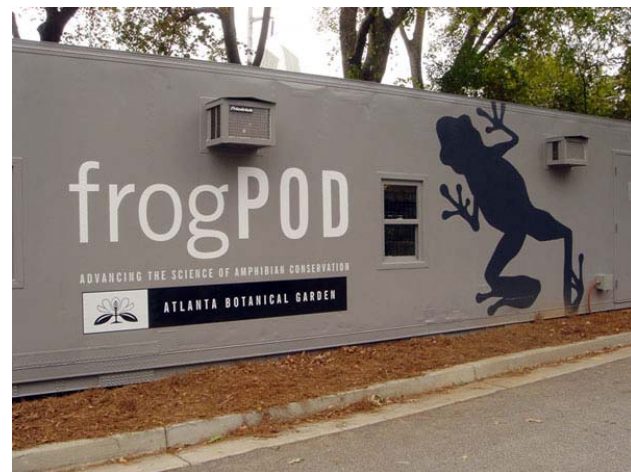


Update from the Atlanta Botanical Garden's Amphibian Conservation Program

We welcomed our newest amphibian specialist, Julia Kaylock, to the conservation team in January. Her background experience in amphibian husbandry with the Baltimore Aquarium makes her a key component to continued success in our program. She has jumped right into the busy schedule at the Garden with the renovations to our amphibian lab and in keeping our live collection happy and healthy.

Upcoming Event!

We are planning an exciting event for the evening of April 22nd (Earth Day)! Please join us for an exclusive tour of the Frog Pod and evening of Amphibian Conservation activities, including moonlight tours of the conservatory to a booming chorus from three species of rain frogs, *Eleutherodactylus spp.*, including the famous "coqui," and the Tokay Gecko, *Gekko gecko*. For more information, contact us or visit the ABG website (www.atlantabotanicalgarden.org).



The clutch of baby **Marsupial Frogs** (*Gastrotheca cornuta*), born on Father's day in 2008, continue to grow. June 15, 2009 will mark a full year of age for these frogs. The Atlanta Botanical Garden is the first institution to have bred this species in captivity. We credit our success to new vitamin supplementation and plenty of enclosure space in our Frog Pod. This has truly been one of the great stories this year coming from our Frog Pod. Our goal with our Panamanian collection is to serve in a support role to

EVACC, in Panama, where Edgardo, Heidi and all of their supporters have done so much exceptional work. If we happen to glean any novel husbandry techniques, particularly with vitamin and mineral supplementation, sharing this information with EVACC is a top priority.



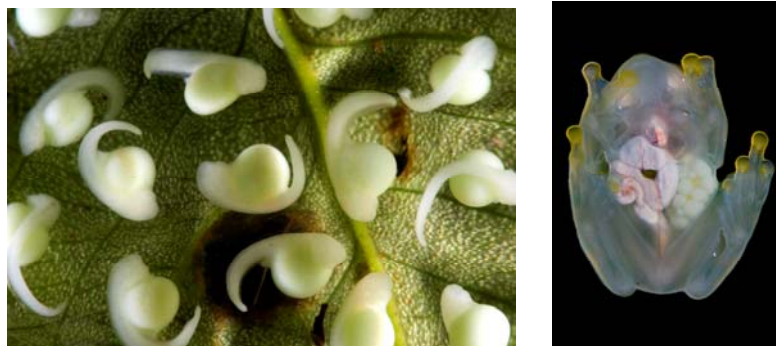
Horned marsupial frogs, *Gastrotheca cornuta*; female with eggs in her pouch to the left

We have had additional breeding successes to report as well. Two pair of **Thorny Crowned Tree Frogs** (*Anothea spinosa*) are producing eggs. We are also caring for one subadult and over a dozen juveniles that were born in 2008. We happened upon one of our females after she had deposited a clutch of food eggs for her tadpoles and snapped the left hand image below.



Thorny Crowned Frog, *Anothea spinosa*; tadpole with food eggs in its gut to the left

Our **Glass Frogs** continue to thrive and reproduce. We have bred three Glass Frog species here in the last year alone. Julia has helped refine the approach we use to feed the tadpoles from the various species we have bred. We have found that different species don't all take to our standard feeding protocol and food selection in the same way, so Julia and Robert have customized approaches for our species.



Glass frog eggs (left); the ventral surface of *Hyalinobatrachium valerioi* (right)

Our **Pratt's Rocket Frogs** (*Colostethus pratti*) have begun breeding again after a short hiatus last fall. On exhibit, our **Blue Poison Frogs** (*Dendrobates tinctorius azureas*) and our **Strawberry Poison Frogs** (*Oophaga pumilio*) have bred without much effort on our part during the 12 months. One additional success includes a clutch of eggs from our **Rabb's Fringe-Limb Tree Frogs**, *Ecnomiohyla rabborum*. We have bred this imperiled species prior but need to learn more about tadpole dietary requirements.



Rabb's Fringe-Limb Tree Frog, *Ecnomiohyla rabborum*, a new species.

Robert Hill was thrilled when our **Lemur Leaf Frogs** (*Hylomantis lemur*) bred again late last year. They had been inactive for some time prior to that. We now have nine Lemur Leaf Frog juveniles growing up in the lab. In the past, over 150 captive produced offspring have been sent to institutions in the United States and Europe for education and display.



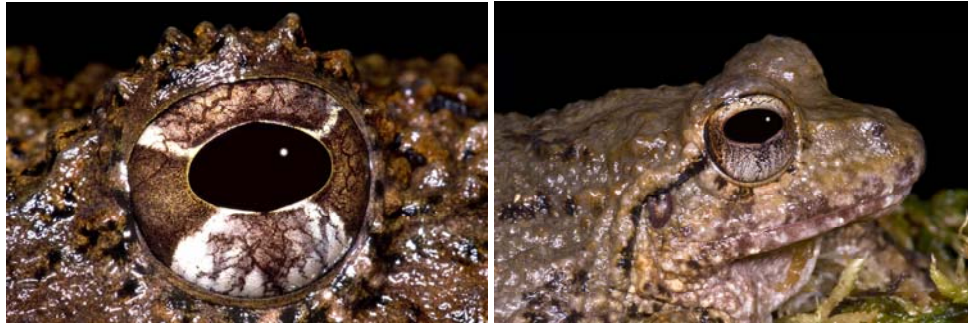
The endangered Lemur Leaf frog, *Hylomantis lemur*

Just this January, our **Splendid Leaf Frogs** (*Cruziohyla calcarifer*) produced a clutch of eggs. This is very exciting as we have wanted to breed the species for some time. We now have 7 late stage tadpoles ready to come out of the water.



Splended Leaf Frog, *Cruziohyla calcarifer*

In the wild, the future of some endangered Panamanian species is uncertain. Several of the frogs that have apparently disappeared from El Valle are in the collections of EVACC and the Atlanta Botanical Garden. For example, the **Rusty Robber Frog**, *Strobomantis bufoniformis*, and **Bob's Robber Frog**, *Craugastor punctariolus*, are of conservation concern in the wild. In captivity, eggs have been produced but both species have yet to yield an F1 generation.



The eye of *Strobomantis bufoniformis* (left) and *Craugastor punctariolus* (right)

In Chile, we are helping to develop a captive breeding center for **Darwin's frogs** (*Rhinoderma*). We are fortunate to have exceptional conservation partners at The National Zoo in Santiago (NZS), led by Zoo Director Mauricio Fabry Otte and lead veterinarian Marcela Tirado. With a lot of dedication and hard work, the NZS has nearly completed the physical building for the breeding center. Robert Hill and Danté Fenolio will head down and help to set the facility up in April or May, installing terrariums, misting systems, drainage, and additional live food cultures. One of the key educational features to the breeding facility is a set of large windows which provide a look into the lab for zoo visitors. Live Darwin's Frogs will be in the facility this year. We will also work with our conservation partners to produce educational signage for the public facing side of the building.

Field studies of Darwin's frogs are also well under way. A preliminary series of swabs taken to test for and track the spread of deadly amphibian chytrid fungus, *Batrachochytrium dendrobatidis* or *Bd*, across the range of these frogs has already been collected and analyzed. Additional testing will take place in the next few months. Our field biologist, Andres Charrier, is in the field right now collecting samples from a population we had not yet examined. We still aren't sure exactly how wide spread *Bd* is in the areas of Chile where Darwin's Frogs are found. A report will be assembled and presented to funding institutions and at academic meetings when we are finished in the field. We expect to have our new website ready in April or May which will detail our efforts and provide a bilingual platform to explain amphibian decline, with emphasis on Darwin's Frogs – www.rhinoderma.org.



Darwin's Frog, *Rhinoderma darwinii* (left); Construction of the *Rhinoderma* breeding facility (right) -Images © Andres Charrier

Field work in Georgia is heating up this spring. We are raising native **Gopher Frogs** (*Rana capito*) at the Garden that will be released later this year as part of a head start program in partnership with the Georgia Department of Natural Resources and The Nature Conservancy.



A juvenile Gopher Frog, *Rana capito*, batch marked with acrylic elastomer before release (left); An adult Gopher Frog, *Rana capito* (right)

Robert Hill continues to conduct surveys of native salamanders and frogs, testing for the presence of amphibian chytrid fungus in natural areas throughout Georgia. This work is done in collaboration with the Georgia Department of Natural Resources.



Collecting samples from a salamander to be tested for amphibian chytrid fungus, *Batrachochytrium dendrobatidis* or *Bd*

General Information about the Atlanta Botanical Garden's Amphibian Conservation Program...

Amphibian decline now endangers at least one third of the world's 6,000 plus amphibian species. Time is short and amphibian conservation efforts are in dire need of additional training and capacity building programs, which go a long way toward ensuring the longevity of successful efforts. These activities include establishment of captive breeding facilities, staff training, and long-term technical support. The Atlanta Botanical Garden (the garden) has been committed to amphibian conservation efforts for over fifteen years and has enacted in-situ and ex-situ captive

breeding and field research programs across eight countries. The garden's program is the only of its kind at a botanical garden, with an amphibian conservation program employing at least three amphibian specialists at any given time, including a Ph.D. level amphibian conservation scientist. The philosophy behind the garden's amphibian conservation program hinges on capacity building with organizations and institutions interested in combating amphibian declines. The garden plans on facilitating the continued development of collaborations with institutions such as the National Zoo in Santiago, Chile, and EVACC in Panama. We simply can't complement our conservation collaborators enough for the dedicated, hard work that they have delivered. Further, the garden would like to continue to use its existing facilities (a dedicated quarantine room, a live food culturing room, a series of portable ponds for rearing endangered ranid tadpoles, and two on-site amphibian laboratories that accommodate captive groups of highly endangered amphibian species) to promote internship opportunities. We plan on offering a formalized internship program this year.

Please remember that our program relies entirely on grants and the support of our sponsors.

Your support is the key to our continued conservation success!

For the amphibians,

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