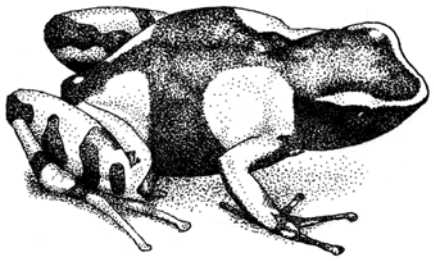
Mantella madagascarensis by Robin Moore ISSN 1026-0269



FROGLOG

Newsletter of the IUCN /SSC Amphibian Specialist Group (ASG)

April 2007, Number 80

NEWS FROM THE ASG

ASG Global Network

The Amphibian Specialist Group is in the process of implementing a Global Network of Regional Working Group Chairs (please see page 4). Chairs will serve on a voluntary basis as the point person for the region, facilitating communication among conservationists and researchers within each region of the world. Chairs for every region will soon be posted on the ASG website.

Funding

We continue to fund projects under the Critical Ecosystem Partnership Fund and recently received a round of proposals from Northern Mesoamerica. We are now opening up a call for proposals for the Southern Mesoamerican region and China. For further details on how to apply for these awards, please contact Robin Moore (*rdmoore@conservation.org).*

Nine nominations have been received for the first Sabin Award for Conservation, which are currently being reviewed by the review committee. This annual award recognizes significant contributions of an individual or group to amphibian conservation and the high standard of nominations received reflects an impressive level of devotion and commitment to amphibian conservation in many regions of the world. This year's award will be presented at the Conservation International Annual Dinner in New York in May.

Meetings/Workshops

The ASG sponsored and formed part of the planning committee for a workshop in St Louis on 6-8 February entitled: "Understanding Agriculture's Effects on Amphibians and Reptiles in a Changing World". The meeting, organized the USGS, was attended by more than 120 scientists, conservationists and land managers from around the world and issues surrounding the impact of agrochemical use and agricultural practices on amphibians and reptiles were productively debated in an open forum. A publication is planned detailing the main outcomes of the workshop.

Conservation Activities

Over the past year we have succeeded in protecting some critical habitat for amphibians. Using sites identified by the Alliance for Zero Extinction (AZE) as the last remaining sites for at least one amphibian species, we have been able to target those sites representing the highest global priorities for conservation. In Colombia we teamed up with the American Bird Conservancy to allow ProAves Colombia to purchase and manage a patch of forest habitat in the Sierra Nevada de Santa Marta that was slated for development. The site was identified by the AZE as the second highest global priority for conservation, containing six amphibian species found nowhere else in the world. Losing the habitat would mean losing the species contained within. We replicated this success at another site -– La Forzosa -– in the central Cordillera of Colombia. This site contains four threatened amphibian species as well as more species that are entirely new to science. We wish to thank Andrew Sabin for generous donations that allowed us to save these species. We are exploring possibilities for expanding our successes in habitat conservation to Haiti and Sri Lanka – countries with staggering levels of amphibian diversity and endemism – and are in the process of fundraising for these efforts.

ASG Secretariat

We still have yet to fill the Executive Officer position within the Amphibian Specialist Group; we have interviewed an impressive array of candidates, but finding the right person for this challenging job has proved difficult. The position therefore remains open and we welcome inquiries. For more information please see the job announcement on page 4.

Website

Please see our newly created website *www.amphibians.org.*

A Conservation Strategy for the Amphibians of Madagascar

By Robin Moore

Madagascar is a global priority for amphibian conservation. It harbours extremely high diversity, hosting over 220 described and at least 150 undescribed species, more than 99% of which are endemic. Major threats are habitat loss and degradation and collection for the pet trade is rife among certain taxa. However, there are also important opportunities for conservation. A commitment by President Marc Ravalomanana's in 2003 to triple Madagascar's protected areas within five years is a critical step and it is important that we seize this opportunity to advance amphibian conservation in this critical region.

From September 18-21, over 60 national and international stakeholders convened in Antananarivo to develop a Conservation Strategy for the Amphibians of Madagascar (ACSAM). The workshop represents the first initiative to implement the Amphibian Conservation Action Plan

(ACAP) at a regional or national scale and as such has potential to serve as a model for other regions of the world.

After a series of presentations set the context for amphibian conservation in Madagascar and beyond, a number of pertinent themes -– including the identification of priority areas for conservation; monitoring protocols and standards; coordination of efforts; and research gaps and future directions -– were tackled in break-out groups. These groups brainstormed to develop solid recommendations for action within each of the themes.

The main product from the workshop was a declaration -– Vision Sahona Gasy -– that was presented to the Minister of the Environment at the end of the final day. Among the actions that were proposed, capitalising upon the opportunity to incorporate the needs of amphibians into the plans to extend protected area networks on Madagascar. A comprehensive Action Plan is in preparation and is expected to be completed in January.

Interestingly, the fungal disease chytridiomycosis appears to be absent from Madagascar – according to initial tests at least. While on the surface this sounds like good news, it may be a mixed blessing for amphibians. If the fungus finds its way onto the island, it could devastate populations of amphibians upon their first contact with the disease. Again, we must seize this opportunity to be proactive in preventing the introduction and spread of this disease on Madagascar.

For further information please contact r*dmoore@conservation.org.*

Monitoring amphibian populations in two sensitive habitats in Cuba

By Ansel Fong G.

A report on Work Carried out with Support from a DAPTF Seed Grant

There are 60 species of Cuban anurans of which 95% are endemic, making them a significant group amongst the amphibians of the West Indies. More than 50% of these species are found in the mountainous eastern region of the island (Fong, 2000). Most recent estimates show that at least 47 Cuban anurans can be regarded as threatened species (IUCN et al. 2004) which, together with the high local endemism rate (about one third of the total), makes this fauna very vulnerable and very likely to be affected by changes related to abiotic factors or to human causes. No amphibian population declines or extinctions of Cuban species have been reported, although some species have disappeared in specific areas where their natural habitats were modified (Fong, 1999).

The main purpose of this study was to establish an amphibian monitoring programme in two sensitive and contrasting habitats in Cuba (a montane rainforest and a coastal xeromorphic scrub) both included in the Baconao Biosphere Reserve. This allowed us to determine temporal variation in these amphibian populations, to associate survey numbers with abiotic parameters, and to get the baseline knowledge on the abundance and status of these species and facilitating detection of changes these populations may undergo in the future. A monitoring programme had never been conducted in Cuba. Herein, I summarise the main outcomes obtained in this project; technical results are being prepared to be published in peer-reviewed journals.

I chose two habitats at two eastern Cuban localities. The first was a montane rainforest in La Gran Piedra, Sierra Maestra, Santiago de Cuba province, located 30 km east of Santiago de Cuba city and 1200 m altitude. This habitat is characterised by abundant fog, relative humidity of 85-90% and a mean annual rain range of 1300-1400 mm. The vegetation reaches 23-25 m in height with a dense shrub stratum and a poorly developed grass-like ground cover. The second habitat was a coastal xeromorphic scrub, in Siboney, Santiago de Cuba province. It is located 20 km southeast of Santiago de Cuba city and it is at sea level. It is on a limestone soil shaping big step-like terraces with its highest point at 136 m. Rainfall does not exceed 800 mm yearly and most of the precipitation occurs within ten days of the year. There is a low shrub and thorny vegetation which barely exceeds 5 m.

Semi-monthly field surveys were conducted from May 2002 through July 2004 in both habitats. We used three methods to estimate frog abundance: Transects, call point-counts and plots. Four two meter-wide 50 meter-long transects were used, with counts made from 20:00-24:00 h by three people. We counted and identified frogs seen within the transect from ground level to a height of 1.5 m in the vegetation. Additional survey plots were 8x8 m quadrants randomly situated in the study site. Each plot was sampled by five people in day hours, counting and identifying each frog detected. Five (in rainforest) and ten (in scrub) call point-counts were established and at each point the number of calling-frogs within a five minute time interval was recorded by two persons. Counts were made between 20:00 and 22:00 h, one night of each one of the surveyed months.

In montane rainforest habitat (La Gran Piedra) we found seven species of frog (genus *Eleutherodactylus*), all of them endemic to Cuba. Three species were detected only visually (*E. dimidiatus*, *E. intermedius*, *E. ricordii*), three were detected both visually and acoustically (*E. auriculatus*, *E. gundlachii*, *E. limbatus*) and *E. ionthus* was counted only acoustically.

Six species were found in plots, although *E. ricordii* was detected once (with only one individual). *E. dimidiatus* and *E. limbatus* had the highest densities, with monthly average values between 1.8 and 6.4 and between 0.5 and 5.2 individuals/plot, respectively. Other species had low or medium monthly average values of abundance in plots: *E. intermedius* 0.7-1.5 individuals / plot, *E. auriculatus* 1.0-1.3 individuals /

plot, and *E. gundlachi* 0.3-1.1 individuals / plot.

In visual surveys (transects), the dominant species was *E. dimidiatus* which was observed in each month surveys were made. Abundance of this frog varied from 9 to 25 (mean=11 individuals / transect). The less abundant species was *E. ricordii*, observed only on 30.7% of sampled nights, and with numbers varying between 0 and 4 frogs (mean=1 individual / transect). Other values obtained in transects were: *E. gundlachi* from 2 to 21 (mean = 6.7 individuals / transect), *E. intermedius* from 0 to 12 (mean=1.8 individuals / transect), *E. auriculatus* from 1 to 6 (mean=1.5 individuals / transect), *E. limbatus* from 0 to 6 (mean=1.1 individuals / transect).

The dominant species in call counts was *E. ionthus*, which was heard in 87% of the surveyed nights. Numbers of calling males for this species varied from 0 to 31 (mean=22.1 when any frogs called). For *E. auriculatus* values were between 0 and 18 calling males (mean=7.5 when any frogs called) and for *E. gundlachi* between 0 and 6 (mean=2.4 when any frogs called). Calling activity of *E. limbatus* showed the lesser values in this habitat, varying from 0 to 4 (mean=2 when any frogs called), and was heard only in 31% of the surveyed nights. These results are biased as this frog is a diurnal species with calling and general activity concentrated between 10:00-12:00 h (Bingote, 2003) and we made only night call counts.

In both years, calling activity (in call point-counts) varied seasonally in every species, and peaked from March-April (in the onset of the rainy season) through July-August (in middle of the rainy season). Calling activity dropped from October through January, months with few rain and the lowest temperatures, and completely disappeared in November. General activity (in transects) was high in every month of survey, but the highest absolute values were obtained in July 2003 and March 2004. Nevertheless, abundance of juveniles and adults was different by season: in dry months the number of juveniles doubled the adult numbers seen in transects, and in the last months of dry season and onset of the rainy season very few juveniles were detected in transects.

The variation in the calling and general activity seems to be related to the reproductive cycles in each species, e.g. eggs eclosion and recruitment of juveniles through March to August, and juvenile and adult mortality from October through January. Higher reproductive activity was identified by higher call activity in adult males and by the presence of gravid females (with eggs visible through the abdominal skin) in transects. In contrast, in months with lower reproductive activity no gravid females were seen in transects and no one or few vocalizations were heard (for example, November). Variations in abundance of juveniles and adults (as explained above) also supported this relationship.

In coastal xeromorphic scrub habitat (Siboney) we detected four species of frogs (*Eleuthero-dactylus ionthus, E. etheridgei*, *Osteopilus septentrionalis* and *Bufo peltocephalus*). However, species of *Osteopilus* and *Bufo* used this habitat only temporally and very few specimens were seen and were not heard during call counts. No amphibians were seen in transects and plots in this habitat, so only acoustic surveys were taken into consideration.

The dominant frog in call counts was *E. ionthus*, which was heard in 67% of the surveyed nights. Numbers of calling males varied from 0 to 27 (mean=18.7 when any frogs called). For *E. etheridgei* values were between 0 and 3 calling males (mean=2.0 when any frogs called) and was heard only in 42% of the surveyed nights.

Rainfall appears to be the most important abiotic factor influencing activity in the frogs of the coastal xeromorphic scrub habitat. Calling males were always heard during rainfall periods; and calling activity was very low or inexistent in months without rainfall. Prolonged periods without rain affected calling activity of both species, for example, during three months without rain – from December 2002 to February 2003 – males never called. Nevertheless, in March 2003 there was some rainfall and activity peaked to obtain the highest values: 15 calling males of *E. ionthus* and three calling males of *E. etheridgei*.

Our results in Siboney support the statement that in dry tropics, anuran reproductive activity is closely associated with the rainy season (Duellman and Trueb, 1994). These species could be considered as opportunistic as they follow the patterns stated by Duellman (1978) for upper Amazonian anurans and they breed regularly after heavy rains throughout the year.

The results presented here should be considered as preliminary. The monitoring program has continued from 2004, and our goal is to continue long-term monitoring so we can document population trends, and evaluate the role of weather parameters. Similar monitoring programs should be established in other sites around Cuba, especially in those localities with high diversity and endemism of anurans (for example Western and Central Cuban mountains). Considering that in Latin America the most unexplainable declines have affected the species with aquatic habits to a far greater extent than the terrestrial species (Young et al., 2001), species with aquatic reproduction (e. g. *Bufo* spp.) should also be considered with special interest in future monitoring programs in Cuba.

Acknowledgments:

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La Gran Piedra Meteorological Station. Jean-Marc Hero kindly reviewed a draft of the manuscript.

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Froglog Shorts

A special welcome to our new ASG Working Group Chairs and co-Chairs in the following areas:

Esteban Lavilla – Argentina
Magno Segalla and **Marcio Martins** – Brazil
Rafael Joglar and **Patricia Burrowes** – Carribean
Alberto Veloso – Chile
Lili Peng and **Xie Feng** – China
Jose Vicente Rueda – Colombia
Federico Bolanos – Costa Rica
David Moyer – East Africa
Santiago Ron – Ecuador
Sergius Kuzmin – Former USSR & Mongolia
Jonathan Campbell – Guatemala & Belize
Franklin Castaneda – Honduras
Djoko Iskandar – Indonesia
H**erilala** and **Franco Andreone** – Madagascar
Steve Richards – Melanesia
Phil Bishop – New Zealand
Roberto Ibanez- Panama
Rudolf von May – Peru
Arvin Diesmos – Phillipines
Alan Channing – Southern Africa
MO Rödel – West/Central Africa
Riyad Sadek – West Asia

Reports and papers from previous DAPTF Seed Grants

Recipients of Seed Grants from the former DAPTF are generally expected to publish the results of their projects in refereed journals, or as articles in *Froglog*. They are also required to send reports, so that their results can be made available to a wider audience. Below is a list of reports that have been received recently. Anyone wanting a copy of a report should contact the author in the first instance; if you cannot reach the author, contact Tim Halliday: *t.r.halliday@open.ac.uk.*

Justin Gerlach (2006) Distribution and abundance of Seychelles caecilians.
(*jstgerlach@aol.com*)

The following papers report work supported by DAPTF Seed Grants:

Griffis-Kyle, K.L. & Ritchie, M. E. (in press) Investigating the effects of mineral nitrogen in the field on amphibian survival, growth and development: an experimental approach. *Oecologia:* DOI : 10.1007/s00442-007-0686-2. (Grant to Mark Ritchie & Kerry Griffis, 2001.)
(*kerrygk@nmsu.edu*)

Hartel, T., Nemes, S., Cogalniceanu, D., Öllerer, K., Schweiger, O., Moga, C.I. & Demeter, L. (in press) The effect of fish and aquatic habitat complexity on amphibians. *Hydrobiologia:* DOI : 10.1007/s10750-006-0490-8. (Grant to Tibor Hartel *et al*., 2004.)
(*asobeka@yahoo.com)*

Tim Halliday

Job Announcement

Executive Officer, Amphibian Specialist Group (ASG)

The Amphibian Specialist Group (ASG) is seeking a conservation leader who can take on the global amphibian decline within the broader context of the biodiversity crisis. The ASG, a unit of the IUCN Species Survival Commission, strives to conserve biological diversity by stimulating, developing, and executing practical programs to study, save, restore, and manage amphibians and their habitats around the world. The ASG is taking IUCN's Specialist Group model to the next level of effectiveness through the establishment of a Secretariat that will serve as a dynamic hub to coordinate a global web of stakeholders and to leverage the intellectual, institutional, and financial capacity towards shared, strategic amphibian conservation goals. The Executive Officer will be responsible for coordinating the activities of the ASG to ensure a unified, strategic and sustainable approach to global amphibian conservation, effecting policy change and communicating the work of the ASG to raise the profile of amphibian issues in the public arena. For further information concerning this position, please contact Robin Moore *rdmoore@conservation.org.*

Instructions for Authors

FROGLOG publishes a range of articles on any research, discoveries or conservation news relating to the amphibian decline phenomenon. We encourage authors describing original research to first make submissions to a refereed journal and then, if appropriate, to publish a synopsis in Froglog. Submissions should be in English, normally no more than 1000 words and follow the style of past FROGLOG issues (as should references). Due to space and formatting restrictions, please do not submit images, maps, figures or tables. Short news items and press releases are also acceptable. Please submit potential contributions to Jeanne McKay at the address below. Accepted submissions will be printed in order of receipt.

FROGLOG is the bi-monthly newsletter of the Amphibian Specialist Group (ASG). Articles on any subject relevant to the understanding of amphibian research, conservation and / or assessment should be sent to: Jeanne McKay, Editor, The Durrell Institute for Conservation and Ecology (DICE), The University of Kent, Marlowe Building, Canterbury, Kent, CT2 7NR, United Kingdom

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