ASG

FROGLOG

Newsletter of the IUCN/SSC Amphibian Specialist Group

Search for the Lost Frogs

The search has begun! Over the next few months, the ASG together with Conservation International and Global Wildlife Conservation are supporting expeditions by amphibian experts in 20 countries across Latin America, Africa and Asia. Led by members of IUCN's Amphibian Specialist Group, the research teams are in search of around 40 species that have not been seen for over a decade. Although there is no guarantee of success, we are optimistic about the prospect of at least one rediscovery.

Whatever the results, the expedition findings will expand our global understanding of the threats to amphibians and bring us closer to finding solutions for their protection. Bold conservation efforts are not only critical for the future of many amphibians themselves, but also for the benefit of humans that rely on pest control, nutrient cycling and other services the animals provide. To join the search please visit www.conservation.org/lostfrogs

WHAT'S INSIDE

VOL 94 SEPTEMBER 2010

Newly discovered miniature *Microhyla* from Borneo among the world's smallest frogs

Indraneil Das & Alexander Haas

The terms 'diminutive,' 'minute,' or 'miniature' have been applied to a number of amphibian species that are under 15 mm (see Estrada and Hedges 1996; Biju et al. 2007; Duellman and Hedges 2008). The smallest amphibian species are members of the genera *Eleutherodactylus* (fide Estrada and Hedges 1996), *Brachycephalus* (fide Frost et al. 2006), *Noblella* (fide Lehr and Catenazzi 2009), and *Stumpffia* (fide Vences and Glaw 1991), and among Old World frogs, the smallest member of the microhylid genus *Stumpffia* of Madagascar, *S. pygmaea*, has an adult SVL range of 10.9–12.0 mm (Vences and Glaw 1991).

A new diminutive species of microhylid frog, *Microhyla nepenthicola* (Figures 1, 2 and 4), from the Summit Trail of Sarawak's Matang Range, in Malaysian Borneo was described by us recently (Das and Haas 2010), and matches the size range shown by the smallest of these frogs (adult males range SVL 10.6–12.8 mm). The Bornean species is an obligate of the pitcher plant, *Nepenthes ampullaria*, breeding in senescent or mature pitchers.

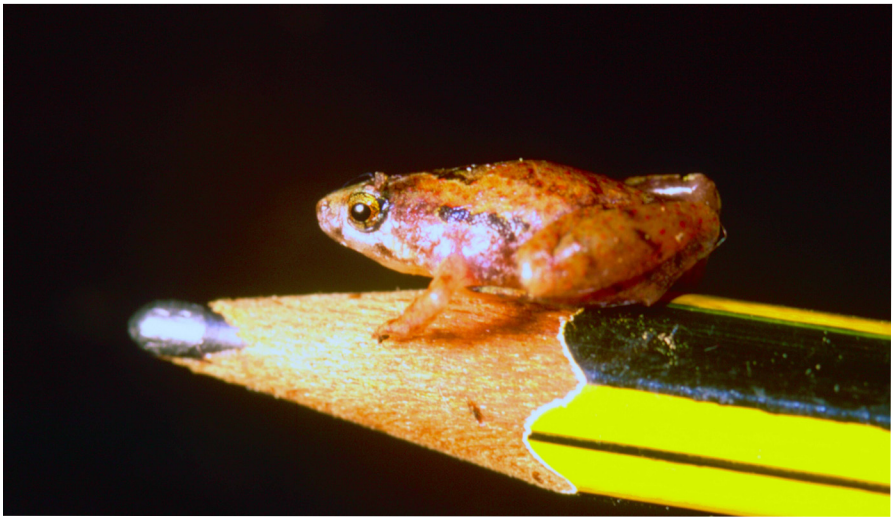

Figure 1. Adult *Microhyla nepenthicola* on pencil © Indraneil Das

Its small size made specimen collection a challenge, and most were collected by being made to jump onto a piece of white cloth, after males were tracked down by their calls. Consequently, only a couple females were collected. Larvae were abundant in pitchers, and association between adults and larvae were made by DNA barcoding.

The smallest amphibian species are members of the genera *Eleutherodactylus*, *Brachycephalus*, *Noblella*, and *Stumpffia*.

This newly-described species can be diagnosed from its 30 congeners (known from the Indian subcontinent, Indo-Malaya and Indo-China) in showing dorsum with low tubercles that are relatively more distinct on flanks; a weak, broken, mid-vertebral ridge,

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Figure 2. Adult *M. nepenthicola* on penny © Indraneil Das

starting from forehead and continuing along body; no dermal fold across forehead; tympanic membrane and tympanic annulus absent; Finger I reduced to a nub proximal to Finger II in males; toe tips weakly dilated; phalanges with longitudinal grooves, forming two scale-like structures; webbing on toe IV basal; toes with narrow dermal fringes; inner and outer metatarsal tubercles present; and dorsum brown with an hourglass shaped mark on scapular region. Larvae (Figure 3) have a total length of 9–11.3 mm; tail length 70%; body contour in dorsal view parallel sided, as broad at eye level as at mid-body level; gut arranged in a short coil, often with only three bends in lateral view; ventral tail fin higher than dorsal tail fin; tail edges become convex, forming a short acuminate to flagellar tip; vent embedded and opening medially in lower tail fin; oral orifice terminal on snout and directed forward; oral disk highly reduced: upper jaw with very shallow lip flap; flap on lower jaw much reduced but present and separated from a chin-like bulge below by a fold; scattered pigment cells. Metamorphs are ca. 3.5 mm, and have near translucent to pale pink dorsum.

Larvae are endotrophic, a first record for the genus. Large amounts of yolk platelets in gut tissue, even in specimens with advanced limb development (Stages 28–36) and reduced branchial baskets, are here taken as further evidence of endotropy. We collected pitchers with fresh eggs, deposited on the sides of the pitchers, and observed that metamorphosis is completed within ca. two weeks. Up to 14 larvae (typically, 5–6) can be found in a single pitcher, showing different developmental stages, and indicative of multiple egg-laying in one pitcher. Tadpoles remain almost motionless, and when disturbed, burrow into the organic debris at bottom of pitchers.

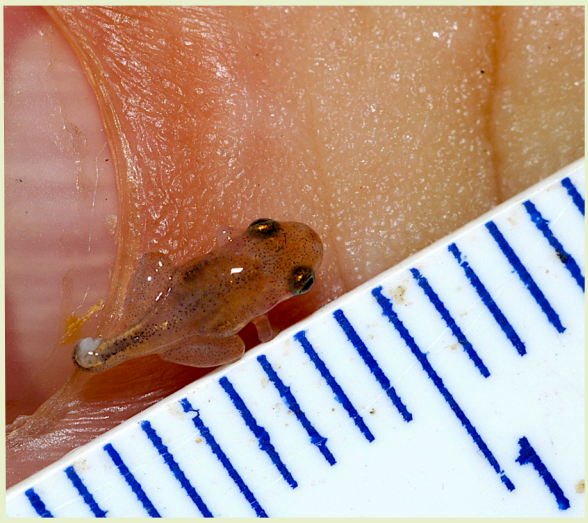

Figure 2. Juvenile *M. nepenthicola* by thumb nail © Indraneil Das

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Endotrophy has presumably lead to morphological changes, including relatively small size at metamorphosis, reduction of gill filter apparatus in terms of size and complexity, rapid development, and gut functioning as yolk storage.

Calls commence at dusk, choruses peaking between ca. 1845–2100 h. Males form calling aggregations within and around patches of pitcher plants, *Nepenthes ampullaria*. The call comprises a series of harsh rasping notes. A note consists of two short (1–2) and one larger (5–9) pulse groups. The pause between pulse groups within a note is 125–154 ms; breaks between notes are 192–330 ms. Repetition frequency of notes (i.e., duration of pauses in a series) depends on the level of agitation in a calling congregation. Notes have a duration of 696–736 ms.

Figure 4. Adult *M. nepenthicolas* in amplexus © Indraneil Das

Frogs showing miniaturization in general show a suite of characters, including reduced ossification and reduction of digits (Inger and Frogner 1980; Alberch and Gale 1985), and in the genus *Microhyla*, there is a tendency for reduction or loss of Finger I, with a few species showing only three functional fingers (Inger and Frogner 1980). Miniaturization and reduced webbing on pes in this species is presumed to be the result of the need to navigate on the slippery (waxy) zone of pitchers of *Nepenthes*, situated below the peristome, that are used for trapping arthropods (see Gorb et al. 2005).

Acknowledgements

We thank the Institute of Biodiversity and Environmental Conservation, Universiti Malaysia Sarawak, and University of Hamburg, for supporting our research.

Permission and facilities to conduct field work in Kubah was provided by the Sarawak Forest Department (permits(NPW.907.4.2–26,NPW.907.4.2–43; NPW.907.4–35; NPW.907.4–36; NPW.907.4.2–8 and NPW.907.4.2(II)–73) and export permits (04635, 07094–97 and 07484).

At Kubah, we are grateful to M. Rajuli and S. binti Sulaiman for logistic support. The Economic Planning Unit (EPU), The Prime Minister's Department, Malaysia issued EPU Research Permit No. 1168 to A. Haas.

This research was supported by the Volkswagen Foundation, Germany, Grant I/79 405.

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Darwin's frog captive rearing facility in Chile

Johara Bourke

Amphibian species are declining and disappearing worldwide. This tragedy holds true for Chile, and its unique endemic Darwin's frogs (Young *et al.*, 2001; Stuart *et al.*, 2004; IUCN, 2009). Darwin's frogs (*Rhinoderma spp.*) have a unique reproductive strategy, where the males brood their offspring in their gular sacs. The two species of the *Rhinoderma* genus are highly endangered; *R. rufum* is classified as critically endangered (IUCN, 2009), and Busse (2002) quotes that some Chilean herpetologists think that this species is already extinct! For this reason, *R. rufum* ranks 45th on the list of evolutionarily distinct and globally endangered amphibians (EDGE, 2009).Meanwhile, its sister species *R. darwinii* is also becoming rare and seriously endangered (Glade, 1993).

For these reasons, Klaus Busse (Zoologisches Forschungsmuseum Alexander Koenig (ZFMK), Bonn, Germany) and Heiko Werning (NT-V Publishing House, Münster, Germany) created the *Rhinoderma* Project with funding provided by the Chester zoo, England, in collaboration with Leipzig, Germany's Zoological Society for Protection of Species and Populations (ZGAP) and the NT-V magazine "Reptilia". On this basis,

R. rufum is classified as critically endangered ...and Busse... quotes that some Chilean herpetologists think that this species is already extinct!

work was done on geographic surveys of Chile along with monitoring of *Rhinoderma* populations, and analyses of possible chytrid fungus infection. These activities failed to find surviving *R. rufum* populations, but did discover scarcely distributed *R. darwinii* populations infected with chytrid fungus. This apparent fungal threat and the shrinking range of *R. darwinii*, caused by over-exploitation and destruction (agriculture, non-native tree

Figure 1. Darwin's Frog, *Rhinoderma darwinii* © J. Bourke

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species: Neira *et al.*, 2002) of the Chilean forest (Stuart *et al.*, 2004) led to the decision to create this special conservation project for Darwin's frog. Necessary funds were provided by the German and Chilean institutions: Leipzig Zoo and Concepción University, in collaboration with Chester Zoo, ZGAP, Reptilia magazine, Huilo-Huilo and SAG (Agricultural and Stockbreeder Services). The project plans to establish captive rearing facilities including an *ex-situ* research/captive rearing facility and an *in-situ* preservation/captive rearing facility.

Figure 2. Research/Captive rearing facility in Concepción University Concepción, Chile © C. Barrientos

The first one (*ex-situ*) is located in Concepción University at Concepción, Chile, due to its location within the overlapping zone of the former distribution ranges of both *Rhinoderma* species. The facility consists of three captive rearing approaches:

- Isolated terrariums inside the laboratories where abiotic and biotic conditions will be intensively controlled
- Outdoor connected terrarums exposed to natural environmental conditions, however, with a dense monitoring
- External breeding area which will be a close copy of the rainy temperate forest, i.e. the natural habitat of *R. darwinii* so that we may expect better breeding successes.

Figure 3. Collecting leaf litter and soil from native forest to prepare external breeding areas © A. Gutsche

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The second facility (*in-situ*) will be placed in the territory of the Huilo-Huilo Foundation, which is part of the Unesco Biosphere Reserve where *R. darwinii* currently occurs. In Huilo-Huilo, a protected area will be established and monitored annually in order to better understand the species' ecological and behavioural requirements. Also, safety measures will be taken to protect the habitat of Darwin's frog in areas with high negative impact from tourism and urban development.

The project also aims to further research and public awareness in amphibian conservation. Environmental campaigns and an exhibition area will be established in Concepción University which will include general information for the public on the importance of amphibians in global ecosystems.

The research/captive rearing facility in Concepción University was inaugurated on April 23rd, 2009, and is equipped with two modified containers, one with the quarantine area and the other one with terrariums. Insects breed in incubation chambers; three for Isopoda, four for *Gryllus sp*, 15 for *Drosophila sp.* and four for aphids. We have captured two wild *R. darwinii* collections (April 2009 and February 2010) from two threatened areas in the South of Chile, from which we have a total of 20 *R. darwinii* adult individuals, which are kept at the rearing facility terrariums and have successfully bred numerous times. Currently, 30 froglets have been born in the rearing facility.

Figure 4. Preparing external breeding areas with native vegetation © C. Barrientos

SAG and a Chilean team closely monitor the frogs; all frogs are annually sampled for chytrid (by T. Ohst and C. Soto) and are currently healthy and chytrid-free. Part of the Chilean team, Carlos Barrientos, has been skilled at the AZA's Amphibian Biology, Conservation and Management School, thanks to support AArk, Leipzig Zoo and Concepción University support. Also making progress, Huilo-Huilo has already fenced highly impacted areas where Darwin's frogs occur for *in-situ* preservation and they are designing a tourist information center where people

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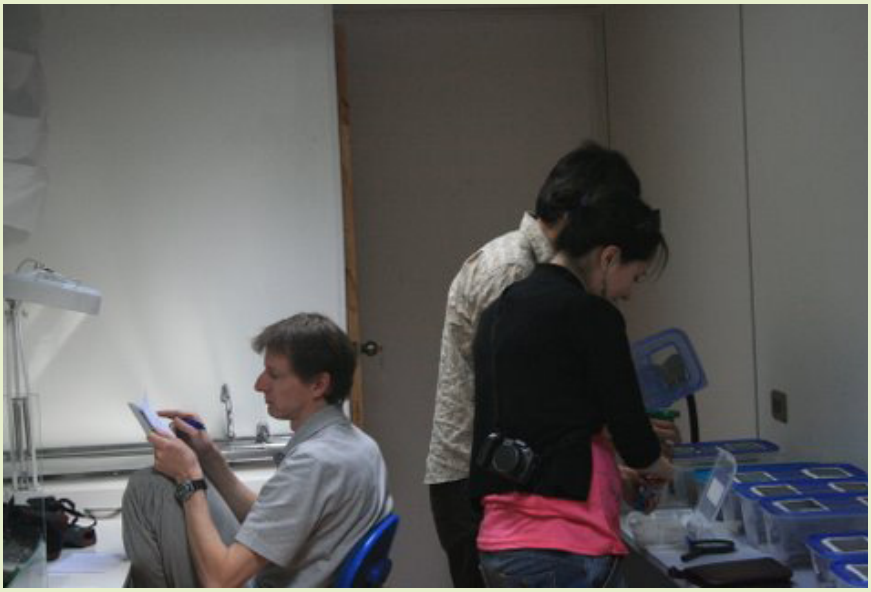

Figure 5. Part of the team working in the quarantine area © V. Toledo

can learn more about Darwin's frogs and the threats that amphibians are currently undergoing.

Thanks to this project, we are contributing to the conservation and survival of this unique frog species and hope to also promote an improved public awareness of amphibian conservation problems and to stimulate the interest of Chilean scientists and the government (SAG) to create similar programs for other, likewise endangered Chilean species of amphibians and reptiles. This may lastly result in a safe ark for endangered and protected species and might increase the chances to save Chile's unique biodiversity for generations to come.

Acknowledgments

Thanks to all the people that collaborated in the rearing facility establishment, especially to PhD. Gutsche (Humboldt University of Berlin) and the Concepción University team: PhD. Ortiz, MS(c). Barrientos, MS. Vergara, and MS(c). Benitez, who is the primary group responsible for the Darwin's frog breeding success and maintenance and to those that help with their invaluable knowledge: PhD. Busse (ZFMK), Mr. Karlu (Cologne Zoo), Dr. Mutschmann (Exomed), and Gibson (Chester Zoo), to H. Werning (Reptilia), F. Oberwemmer (Leipzig Zoo) and V. Toledo (Huilo-Huilo) Project collaboration, to Prof. Doc. Böhme (ZFMK) review, to mentioned funding institutions and my PhD/DAAD-CONICYT scholarship. Scientific permits were provided by SAG, Chile.

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EXTIRPATION

A growing African market for frog meat

Meike Mohneke, Abiodun Onadeko, Mareike Hirschfeld & Mark-Oliver Rödel

Many African ethnics use amphibians as food or for medical or ritual purposes (e.g. Pauwels *et al.* 2003; Gonwouo & Rödel 2008). Larger frog species are usually preferred as food, but even toads and tadpoles are harvested, prepared and sold on local markets. One species in particular, the African Tiger Frog, *Hoplobatrachus occipitalis*, is harvested in huge quantities in many West African countries. In order to investigate the ethnological, socio-economic and ecological dimensions of the frog market in West Africa, we conducted interviews with frog collectors, market women, regional frog-traders and frog consumers in Burkina Faso, Benin and Nigeria (Mohneke *et al.* 2010).

...22 Market-women stated to sell approximately 66,000 frogs per month during the dry season.

In Burkina Faso the frog harvest and trade only took place on a local scale. For the most part, frogs were consumed only occasionally, but we detected frogs being sold on local markets with some former fishermen and market-women even specializing in catching and selling the frogs, respectively. For instance, 22 market-women stated to sell approximately 66,000 frogs per month during the dry season. For some villages in Burkina Faso, we calculated a mean consumption rate of 6 kilograms of frog meat (approximately 120 frogs) per household per

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Figure 1. Campsite of Nigerian frog collectors in northern Benin. Visible are approximately 17 piles* Hoplobatrachus occipitalis *drying in the sun. © Contact authors

week. In addition to this traditional or almost traditional use of frogs, we detected a large cross-border trade of amphibians from Benin and other West African countries into Nigeria. Here, the frog trade took on a different dimension. We accompanied and observed a group of 30 frog collectors in Malanville, northern Benin; these and many other young men were sent from Nigeria exclusively to collect frogs. Two-man teams collected, on average, 500 frogs per night (with a maximum of 1,500 frogs per night). During their two-month stay, this group collected approximately 450,000 frogs, predominantly *H. occipitalis*, along the banks of River Niger and adjacent rice fields.

Two-man teams collected, on average, 500 frogs per night, with a maximum of 1,500 frogs per night.

According to our interviewees, this dimension of the frog trade is a new development, most likely driven by an increasing demand for meat and a decrease of other protein sources, such as fish. All frogs are collected exclusively from the wild and the practice is not regulated in any of the West African countries. This potential overexploitation of frog species may have important ecosystem consequences (Lau *et al.* 2008). Currently, we are investigating several of these potential effects and we urgently call for further investigations, particularly in other African countries, to provide a full-scale overview of the African frog trade. In regions where frog collection exceeds the local small-scale use, we highly recommend careful monitoring of frog populations in order to avoid overexploitation.

Acknowledgements

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Figure 2. Disemboweled African Tiger Frogs. After drying, these frogs are transported from northern Benin to southern Nigeria where they are sold on food markets. © Contact authors

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The original paper "Mohneke, M., Onadeko, A. B., Hirschfeld, M., and Rödel, M.-O. (2010). Dried or fried: amphibians in local and regional food markets in West Africa. TRAFFIC Bulletin, 22:117-128" can be downloaded at: http://www.traffic.org/bulletin.

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REDISCOVERY

Rediscovery of two Honduran endemic streamside frogs, *Craugastor emleni* (Dunn) and *Craugastor stadelmani* (Schmidt)

James R. McCranie, Leonardo Valdés Orellana, and John G. Himes

Streamside frogs of the *Craugastor rugulosus* and *C. milesi* species groups have been the species most affected by the recent amphibian population declines in Honduras. In fact, McCranie, in McCranie and Wilson (2002) postulated that seven Honduran endemic species from these two groups (*C. anciano, C. chrysozetetes, C.*

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cruzi, C. emleni, C. milesi, C. omoaensis, and C. *stadelmani*) were possibly extinct. More recently, Stuart *et al.* (2008) classified two of those species (*C. chrysozetetes and C. milesi*) as extinct. In an encouraging note, Kolby and McCranie (2009) reported the finding of a single living *C. milesi* in Parque Nacional Cusuco during 2008. During recent field work in some of the mountainous regions of Honduras, we were surprised to find surviving populations of two more of those seven species previously considered as possibly extinct (McCranie, in McCranie and Wilson, 2002).

During the afternoon and night of 28 March 2010, we visited a small stream at Los Golondrinas, Francisco Morazán, in Parque Nacional La Tigra. The stream lies at about 1600m elevation. We observed three specimens of *Craugastor emleni* (*C. rugulosus* species group) during late afternoon under rocks and debris in and along the stream. The animals attempted to escape by jumping into the stream and sitting among rocks on the bottom of the shallow water (about 0.2 to 0.5 m deep). When pursued, they would swim to the other side of the stream and attempt to hide beneath rocks overhanging the stream bank. We searched the stream for about one hour after dark and saw about 15 active frogs of this species. Most were sitting on rocks above the water line or on rocks within about 0.5m of the stream. We also found the carcass of a dead adult (cause of death unknown) on a rock in the stream. Size classes ranging from juveniles (less than about 20mm snout-vent length) to adults were seen, with adult females being observed more often than adult males or juveniles (adult sexes determined by approximate snout-vent length and tympanum size). The frogs captured and examined in hand compared well with the description of *C. emleni* provided by McCranie, in McCranie and Wilson (2002). In addition the stream lies only about 4 km SE of the type locality of *C.*

***Adult male of* Craugastor emleni**
© *James R McCranie*

Adult female *Craugastor emleni*
© James R McCranie

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emleni.

We visited a small stream at 1690 m elevation in Reserva de Vida Silvestre Texíguat NNE of La Fortuna, Yoro, during the afternoon and night of 8 April 2010. During the early afternoon one of us (LVO) saw a small rough skinned frog with a distinct white middorsal stripe jump into the stream and disappear beneath rocks overhanging the water. Shortly after dark, one of us (JRM) saw two frogs fitting that description along the same portion of the stream as the frog seen during the day. The two frogs were within about 25 cm of each other and were clearly adult females based on size and the presence of a distinct white middorsal stripe. Despite about two more hours of night searching along the stream, no other *Craugastor* were seen. One of the two frogs seen was captured and examined and determined to be *Craugastor stadelmani* (*C. milesi* species group). That species was also formerly common at another small stream nearby before disappearing in the mid 1990s.

...it is too early to know if these two species are recovering from near extinction or are still in a period of decline...

Adult female *Craugastor stadelmani*
© James R McCranie

Although these two recent discoveries are exciting, it is too early to know if these two species are recovering from near extinction or are still in a period of decline. Neither of the two streams where these populations were found had been searched

Subadult female *Craugastor emleni*
© James R McCranie

previously for *Craugastor* species, so we do not know if these populations are a result of natural reintroductions or if the frogs were present in those streams prior to surviving the major declines that occurred throughout Honduras during the 1990s. Plans are underway by the first two authors to return to those two localities to survey the frogs and perform skin swabs to test for the chytrid fungus *Batrachochytrium dendrobatidis*.

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ANNOUNCEMENTS

Recent DAPTF Seed Grant Recipient Publications

Since 1992, DAPTF has been allocating portions of its budget to help support research aimed at discovering information to further scientific knowledge regarding the amphibian decline phenomenon and to also elicit scientific and public attention with the hopes of creating new sources of funding for the cause. ASG would like to congratualte the following DAPTF Seed Grant recipients for their recent publications:

Ansel Fong *et al.* 2003 Grant Recipients

Fong, A., JM Hero, R Viña, I Bignotte-Giró. 2010.Population edology of the riparian frog *Eleutherodactylus cuneatus* in Cuba. Biotropica: 42; 348-354.

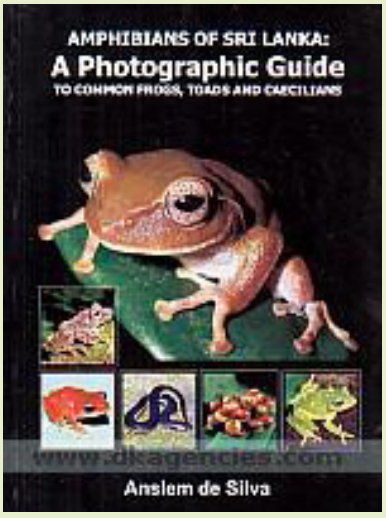
Adriana Herrera Montes and N. Brokaw 2006 Grant Recipients

Herrera-Montes, A. & Brokaw, N. 2010. Conservation value of tropical secondary forest: A herpetofaunal perspective. Biological Conservation 143: 1414-1422.

Photographic Field Guide to Amphibians of Sri Lanka

Now Available: Anslem de Silva's recent 2010 publication on the herpetofauna of Sri Lanka.

Amphibians of Sri Lanka : a photographic guide to common frogs, toads and caecilians



Second Mediterranean Congress of Herpetology "CMH2"

Cadi Ayyad University (UCA) of Morocco

UCA is pleased to announce the organization of the Second Mediterranean Congress of Herpetology "CMH2" to be held in Marrakech (Morocco) in May 2011 by the Moroccan Society of Herpetology "SMH", the Laboratory on Biodiversity and Ecosystem Dynamics [BioDEcos] and the Faculty of Science Semlalia.

The Mediterranean Congress of Herpetology is an international scientific meeting supporting a theme of «Conservation of the Mediterranean Herpetofauna in a Changing Environment". The CMH is bilingual (French and English) and will include plenary conferences, oral communications, posters and round-tables/workshops.

Objectives

- To promote the discussion and exchange of experiences and information among researchers and between researchers and field managers and technicians.

- To stress the impact of global changes, either natural or human induced, on the natural populations of amphibians and reptiles in the Mediterranean ecosystems and to propose management and conservation plans

- To foster communication of new advances in ecology and conservation biology of herpetofauna, including pilot activities of the conservation and restoration

-To coordinate efforts of conserving herpetological biodiversity across the entire Mediterranean region through the creation of collaborative networks

- To promote the conservation of ecosystems and herpetofauna as an integrated part of the natural heritage of the Mediterranean regions.

Themes

Assessment of conservation strategies in different regions of the Mediterranean basin

Aims to provide a general state of knowledge on rare and threatened Amphibians and Reptiles in the Mediterranean region (existence of Red Books, lists of protected species, etc), past and current conservation actions (networks and protected area) and identified gaps.

Continued from previous page

Impact of global changes on the Mediterranean herpetofauna

Discusses the processes of extinction or depletion of the Mediterranean herpetofauna, with emphasis on global change impacts sensu lato: climate change, habitat fragmentation, over exploitation, pollution and biological invasions. The effects on the distribution and dynamics of rare, endemic or protected species are of particular concern.

New advances in ecology and conservation biology of the Mediterranean herpetofauna

Addresses recent conceptual advances in the conservation of rare species and their application to the Mediterranean herpetofauna. Focuses on the importance of genetic and phylogeographic approaches in defining the priority units to be maintained and the conservation of peripheral populations that are ecologically marginal or fragmented. Approaches based on the concept of "metapopulation" will also be discussed. It will also address the ecological processes associated with specific interactions, demographic aspects and the importance of eco-geographical variation in amphibians and reptiles in order to illustrate the importance of spatial approaches in conservation ecology.

Pilot operations for conservation and restoration

Focuses on case studies concerning the pilot operations of conservation or restoration of habitats or rare species of Mediterranean regions. Consideration of integrated approaches and various biological models will generate useful information for future operations.

Open topic

Any other contribution related to the study and/or conservation of the Herpetofauna of Mediterranean-type ecosystems could be submitted to the congress.

Dates and Deadlines

Return Intention (Application) Form	**31 July 2010***
Release of Second Circular	**30 September 2010**
Submit Abstracts	**10 February 2011**
Payment of Fees	**15 March 2011**
Release of Final Circular	**15 April 2011**

****Contact for alternate dates.***
A post-congress field excursion, for a minimum of 40 people, is set from Saturday 28 to Sunday 29 May in the High Atlas Mountains and the Southern Morocco.

For additional information and to download an application, visit UCA's Web site: http://www.ucam.ac.ma/cmh2

Funds for Habitat Protection

The ASG supports organizations working to protect critical amphibian habitat worldwide. This fund is specifically for direct conservation action, not research (although some funds can be earmarked for survey work if this is an integral component of the overall project). Criteria and examples of funded projects can be found at www.amphibians.org

Support ASG

You can now make online tax-deductible donations to the ASG. Please help us protect amphibians and their habitats by visiting www.amphibians.org and clicking "Support Us".

Instructions to 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 FROGLOG Vol 91 (as should references). You may also submit images, maps and figures. We encourage the submission of photographs to accompany text. Short news items and press releases are also acceptable. Please submit potential contributions to Robin Moore at the address in the box below.

It is assumed by ASG that the author in correspondence with the FROGLOG editor has been given full permission by other listed authors of submission to 1) submit article for publication in FROGLOG and 2) to accept or decline any edits made by editor before final publication of edited submission in FROGLOG Journal.

FROGLOG is the bi-monthly newsletter of the Amphibian Specialist Group (ASG). Articles on any subject relevant to the understanding of amphibian conservation, research and / or assessments should be sent to: Robin Moore, Editor, Conservation International, 2011 Crystal Drive, Suite 500, Arlington, VA 22202, USA.

E-mail: rdmoore@conservation.org