

FROGLOG

Newsletter of the Declining Amphibian
Populations Task Force

October 2001, Number 47.

DAPTF SEED GRANTS 2002

We are pleased to announce a new round of Seed Grants for 2002. These are intended as one-time awards of between \$500 and \$2000 for the support or initiation of research that furthers the DAPTF's mission to determine the nature, extent and causes of amphibian population declines. There are three categories in this year's round, reflecting generous financial support from Conservation International (CI) and the U.S. Department of the Interior's Amphibian Research and Monitoring Initiative (ARMI). We will accept applications in Spanish, Portuguese and French, as well as English.

(1) CI AWARDS. The criteria for these awards are: (a) the proposed work would be undertaken in one of the biodiversity hotspots and wilderness areas identified by CI (California Floristic Province, Caribbean, Mesoamerica, Choco/Darien/western Ecuador, tropical Andes, Brazilian Cerrado Atlantic Forest, central Chile, Amazon Basin, Mediterranean, Caucasus, Guinean forests of West Africa, Congo Basin, Eastern Arc Mountains and coastal forests of Tanzania and Kenya, Cape Floristic Region, Succulent Karoo, Madagascar and Indian Ocean Islands, Western Ghats and Sri Lanka, Indo-Burma, mountains of south-central China, Phillipines, Sundaland, Wallacea, New Guinea, northeast Australia, southeast Australia, New Zealand); (b) the project should contain one or more of the following characteristics - be primarily field-based, involve local herpetologists, provide training and/or equipment that will be used subsequently, determine the status of poorly known species, and result in the publication of results. Applicants should draw attention to these criteria in their applications, as appropriate.

(2) ARMI AWARDS. The

criterion for these awards is that the proposed work should be done on species or issues of concern in the USA. ARMI is particularly interested in funding research on potential stressors of amphibian populations. For more information about ARMI, go to:

<http://bbs-pwrc.er.usgs.gov/armi/index.cfm>

(3) UNRESTRICTED AWARDS. The DAPTF welcomes applications that address any aspect of amphibian declines, but favours joint applications that involve a partnership between herpetologists in developed and developing countries. Applicants should indicate which of the above categories they have in mind, but we are likely to consider applicants in categories (1) and (2) also under category (3). Do not hesitate to contact Tim Halliday if you need clarification or advice.

Proposals of no more than 4 pages should be addressed to Tim Halliday, DAPTF International Director, at the address on the back of this *Froglog* or by e-mail on t.r.halliday@open.ac.uk

Proposals should contain: (1) Name, affiliation and contact information of proposer(s), (2) Project title, (3) Description of the intended work, including localities and species involved, (4) Start date and schedule of the project, (5) Explanation of how the project will further the DAPTF's mission, (6) Budget breakdown, including details of additional funding obtained or sought from elsewhere (Note that we are unable to provide funds to cover salaries), (7) References, if appropriate, (8) Any other pertinent information.

All information acquired with the support of the DAPTF remains the intellectual property of the grant recipient, but must be freely available to the DAPTF and for the DAPTF's use in furthering its mission.

The closing date for applications is 15th December, 2001.



Endangered
Chinhai
Salamander
Colonising
Newly Created
Breeding
Habitat

By Max Sparreboom, Xie Feng
& Fei Liang

The Chinhai Salamander (*Echinotriton chinhaiensis*) has a very limited distribution area, living in hilly, forested habitat east of the city of Ningbo, Zhejiang, China. The salamander is completely terrestrial, laying eggs on land, close to ponds. Hatching larvae are washed into the pond where they develop.

Only three populations are presently known: the type locality in Chengwan, where the species was discovered by Chang in 1932, one population in Ruiyansi forest park, and a recently discovered site in Qiushan. The pond of the type locality is still there, but over the past 20 years the species has been observed only incidentally. No salamanders were found in 1999. The site in Qiushan was discovered during a vertebrate survey in April 1999, organised by the Zhejiang Museum of Natural History in Hangzhou. It consists of a small puddle, overgrown with dense vegetation. On the edge of this small pond (1 x 2 m), two females were found. On the slopes of three neighbouring ponds at the Ruiyansi site, eggs are found each year. In one of these ponds, larvae do not develop due to pollution by pesticides. The other two ponds are less than 10 m apart, one a little deeper, with steep slopes, the other shallow with flat sides. In this area 50 female salamanders were found in 1997, 88 in 1998, 89 in 1999, 82 in 2000, and 58 in 2001. Two males were found in 1997, three in 1998, three in 1999, one in 2000, and none in 2001. When these ponds were first studied in 1978,

1979 and 1983 (Cai & Fei, 1984), the population appeared to be isolated but not in immediate danger. In the meantime, the habitat has decreased in size and quality, with agricultural activities surrounding the ponds increasing every year and posing a threat to both the terrestrial habitat and the aquatic habitat for the larvae.

In 1996, the Institute of Biology of Chengdu (Chinese Academy of Sciences), in co-operation with the Zhejiang Museum of Natural History in Hangzhou started a project to study the biology of this species and protect its habitat. Results of fieldwork at Ruiyansi were published recently (Xie *et al.*, 2000), and observations on reproductive behaviour will be published shortly (Sparreboom *et al.*, in press).

With the co-operation of the directorate of Ruiyansi Forest Park, two ponds were dug in June 1999 with the aim of creating extra breeding habitat and to reduce the risk from calamities occurring in the only remaining good habitat. Further encroachment upon the habitat by orange orchards and tea plantations was stopped and a sign was posted telling the farmers that it was forbidden to dump any remains of pesticide containers in the pond or to wash their equipment there.

The ponds were dug approx. 50 m away from the two main breeding habitats, situated in a similar environment. These new ponds are 3 m long, 2 m wide and 0.40 m deep with gradually sloping banks. Water supply is fairly constant and there is much vegetation surrounding the ponds. A nearby rocky slope, covered with vegetation, is similar to that bordering the original ponds, affording hiding places for the salamanders.

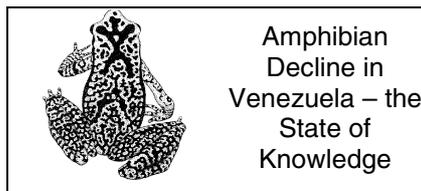
When the pond was visited in August 1999 there was still little vegetation on the slopes except grasses. Eight individuals of *Fejervarya (Rana) limnocharis* were found in the pond. When the pond was visited in April 2000, the vegetation was denser, with the banks half covered. The first species to colonise the new ponds were breeding *Hylarana latouchii* and *Microhyla mixtura*. The ponds were monitored again in March and April 2001. By then the banks were 75% covered by vegetation and especially shrubs were beginning to develop. Again, pioneering *Hylarana latouchii* and *Microhyla mixtura* were found breeding. This time though, five clutches of *Echinotriton chinhaiensis* eggs were found, as well as three female salamanders, one of which appeared to have been marked two

years before. Three clutches were found under rotten foliage, one was found between stones, and another under grasses. We hope that this will mark the start of the colonisation of new breeding habitat. The ponds will have to be monitored for some years more to check if larvae develop and recruitment takes place. To our knowledge this is the first experiment in China aimed at securing the existence of an endangered amphibian by digging artificial ponds.

We are grateful to Mr. Gu Xiao Hua, director of the Ruiyansi Forest Park, for his cooperation in establishing measures for the protection of this species and its habitat. The project could never succeed without Mr. Gu's effective actions and his commitment to this case.

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Amphibian
Decline in
Venezuela – the
State of
Knowledge

By César Luis Barrio Amorós

According to current data, Venezuela is the sixth most amphibian-diverse country in the world, with over 300 species known and many more to discover and report (Barrio, 1998; unpublished data). Of the known species, Rodríguez & Rojas Suárez (1995-1999), in the *Red Book on Venezuelan Fauna*, identify three endangered categories containing eleven species of amphibians. The dendrobatids *Dendrobates leucomelas* and *Minyobates steyermarki* are placed in the category of "Lower Risk; Least Concern" together with the salamanders *Bolitoglossa borburata* and *B. orestes*. In no case has there

been thorough monitoring to determine the rarity of any of these animals except for very local instances as with *Bolitoglossa borburata* at Rancho Grande biological station, where it can no longer be found. Not enough is known about *B. orestes* to include it in any endangered category since it is a very difficult species to find (Barrio & Fuentes, 1999b). *Dendrobates leucomelas* is an attractive animal as a pet, hence the current concern about its extinction in Venezuela. Nevertheless, the selling price for this animal in international markets has decreased a lot since it is very easy to breed in captivity (Barrio & Fuentes, 1999a). Our own observations show that *D. leucomelas* is abundant in all places sampled (Barrio & Fuentes, 1998). *Minyobates steyermarki* should be considered under a threatened species category since its restricted habitat (the top of Cerro Yacapana, an isolated "tepui" in Amazonas State) makes it vulnerable to any natural or artificial catastrophe. As is now known, an illegal expedition extracted some 150 animals for a German breeding center. The main threat, however, comes from open air gold mining mostly by Brazilian "garimpeiros", which causes widespread deforestation, soil erosion, general depredation and mercury poisoning (Barrio & Fuentes, 1999a).

The species that appear under the two most endangered categories according to the *Red Book* all belong to the genus *Atelopus*. *Atelopus carbonerensis* is the most threatened under the "In Critical Danger" section; the remainder (*A. cruciger*, *A. mucubajiensis*, *A. oxyrhynchus*, *A. pinangoi*, *A. soriano* and *A. tamaense*) are all in the "Endangered" category despite the fact that none have been seen for the past 5 years and, though there are no precise details about *A. tamaense*, the rest have been searched for several times in the past few years without positive results (La Marca & Reinthaler, 1991; La Marca & Lotters, 1997). It is too soon to consider them extinct but alarm signals have gone up. There have been hopeful reports of recent observations of at least three species. These are still to be confirmed.

Vial & Saylor (1993) mention in their list of threatened or endangered amphibians several Venezuelan species (some shared by the *Red Book*). The first is a rare anuran, a characteristic element of the Guayana shield, *Allophryne ruthveni*. Nothing is known about the populations of this species in Venezuela other than some anecdotal data (Duellman, 1997) and new sightings (Barrio, 1998).

Ceratophrys calcarata is a fossorial species that inhabits xerophytic zones which only shows up during the wet season for frantic reproductive activity. No population monitoring is underway to confirm that it is under threat.

Also on the list are three species of *Oreophrynella*, *O. huberi*, *O. macconelli* and *O. quelchii*. This genus of small bufonids has adapted to marginal conditions on the top of some tepuis (pre-cambrian mountains with a table-top and heights of between 1000 and 3000 m) on the Guianan shield and present a very limited distribution which might make them susceptible to any catastrophe. Nonetheless, so far no information is available on a decrease in the population of *O. quelchii*. *O. huberi* is known as an inhabitant of the plateau of "Cerro el Sol", a small tepui. *O. macconelli* deserves taxonomic study, but nothing is known about its identity and the state of its population.

Venezuelan dendrobatids mentioned in the list are *Colostethus humilis*, *C. leopardalis*, *C. mandelorum*, *C. saltuensis*, *Mannophryne collaris*, *Nephelobates alboguttatus*, *N. duranti*, *N. haydeae*, *N. mayorgai*, *N. meridensis*, *N. orostoma* and *N. serranus* (updated nomenclature). Little is known about their population status though it is likely that some are undergoing population declines locally (some of these species inhabit minute areas isolated by human activity). *C. humilis* is not an uncommon species in the Andean foothills (W. Schargel, pers. com.). *C. leopardalis*, once abundant on the páramo de Mucubají, is currently extremely difficult to locate. *Mannophryne collaris* has undergone a drastic reduction in numbers in some areas, such as the city of Mérida and its surroundings in the Venezuelan Andes (La Marca, 1995), but it is still abundant in areas of the Barinas foothills (Barrio & Fuentes, 1999a). Three species of Andean *Hyla* are also mentioned: *H. jahni*, *H. lascinia* and *H. platydactyla*. Populations of all of them can be found in brooks of cloud forests without difficulty. Finally, three species of *Eleutherodactylus* also appear on the list: *E. ginesi*, *E. lancinii* and *E. paramerus*. Declines of *E. ginesi* have occurred in places where it was formerly abundant such as the páramo de Mucubají, even though it is still plentiful in areas rarely visited between 2800 and 4000 m. The latter two species have suffered alarming declines to the point where they are very hard to find. These species have perhaps suffered from overcollection and are now down to a minimum.

Apart from the species dealt with in the *Red Book* and in Vial & Saylor (1993), there are others which have never been included in any other "warning" list and which should be considered as such since there are indications that their populations have either dwindled noticeably or have not been reported at all in the past few years. A decline of *Gastrotheca ovifera* has been mentioned in the last few years at Parque Nacional Henri Pittier (Caribbean coastal mountain range). However, this must be a very localized case since the species was detected in very large numbers at Parque Nacional El Avila in March 1997. *Phyllomedusa medinai* was described in 1962 as endemic to the cloud forests of Parque Nacional Henri Pittier, and very much the object of collection until 1974, when the last gathered samples are registered. Since then, there has been no news on its population situation. It has apparently not been sighted again. *Aromobates nocturnus* is a dendrobatid with apparently unique peculiarities (Myers *et al.*, 1991). This species is found only at 2200 m. elevation at its type locality in Trujillo State in an Andean cloud forest. It has recently been the object of an intense search by teams from the Universidad de Los Andes without any luck.

Venezuela possesses a very high rate of endemism, particularly as regards mountain ranges (Andes, Coastal Range and Tepuis or highlands of the Guianan Shield). Many of these endemic species show very limited population distributions and are in danger either because of human activity (Andes) and/or they are susceptible to natural disasters (drought, floods, and bacterial, viral or fungus infections) or to over-collection. The following is a list of animals that ought to be taken into consideration when listing species likely to become extinct in the near future, though this is not the result of monitoring or specific studies: *Atelopus chrysocorallus*, *Metaphryniscus sosae*, *Oreophrynella nigra*, *O. vasquezii*, *Centrolene gorzulai*, *Cochranella castroviejoi*, *C. duidaeana*, *C. riveroi*, *C. vozmediano*, *Hyalinobatrachium auyantepuanum*, *Mannophryne lamarcai*, *M. riveroi*; all species of *Stefania* (*S. evansi*, *S. ginesi*, *S. goini*, *S. marahuacuensis*, *S. oculosa*, *S. percristata*, *S. riae*, *S. riveroi*, *S. satelles*, *S. scalae*, *S. schuberti* and *S. tamacuarina*); *Hyla amicorum*, *H. aromatica*, *H. inparquesi*, *H. loveridgei*, *H. yaracuyana*, *Tepuihyla aecii*, *T. edelcae*, *T. galani*, *T. luteolabris*, *T. rimarum*, *Leptodactylus magistris*,

Dischidodactylus colannello, *D. duidensis*, *Eleutherodactylus anotis*, *E. avius*, *E. boconoensis*, *E. cantinans*, *E. cavernibardus*, *E. colostichos*, *E. memorans*, *E. pruinatus*, *E. reticulatus*, *E. riveroi*, *E. stenodiscus*, *E. turumiquirensis*, *E. yaviensis*, *Otophryne steyermarki*, *Bolitoglossa spongai* and *Microcaecilia rabei*.

Two species of exotic amphibian have been introduced into Venezuela. The first, a few decades ago, is *Eleutherodactylus johnstonei*, which is to be found mostly in parks and gardens all over Venezuelan towns. Its presence has not been reported outside its artificial habitats so it is not a danger to autochthonous species. There has been a sighting recently (so far at a lagoon at a private property in the area of La Carbonera, some 30 km due northwest of the city of Mérida) of *Rana catesbeiana*, one of the species that has caused the most impact on local populations in all other countries where it has been introduced (such as Colombia and several European countries). Its impact on local amphibian populations is so far unknown but it is plausible to think that it can quickly extinguish *Hyla meridensis* from the lagoon and continue expanding to neighboring areas. This warrants prompt action before the presence of this species becomes an unsolvable problem.

What is known about the decline of amphibians in Venezuela is really very little and is usually based on conjectures or still-to-be-proved hypotheses (which should rely on proper methodology such as systematic long-term monitoring). I recommend the immediate monitoring of species highly susceptible to extinction such as *Atelopus spp.*, *Aromobates nocturnus* and *Phyllomedusa medinai*.

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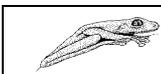
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Froglog Shorts

DONATIONS We gratefully acknowledge receipt of these donations, received 30 May - 31 August 2001. **Individuals:** Jane Hey, Douglas H. Johnson, Julian R. Harrison, Melinda Ann Kreitzman, Hidetoshi Ota, David Reed, Larry J. Rivarde.

A Venezuelan *Atelopus* project website with Fundación Andígena: <http://andigena.cjb.net/>

Conservation News

- An emergency petition has been filed to list the California Tiger Salamander (*Ambystoma californiense*) as endangered in Sonoma County, California.
- The natterjack toad (*Bufo calamita*), an endangered species in the UK, has been successfully re-introduced to breeding sites in North Wales, from where it disappeared 30 years ago.

For info on New Zealand frogs, see: <http://www.otago.ac.nz/Zoology/frogs/index.html>

The 4th National Congress of Societas Herpetologica Italica will be held at Villa Campolieto, a Vesuvian Villa in Ercolano (Naples), from 18 to 21 June 2002. For full details go to: www.zoologia.unina.it
Visit the herp ecotoxicology database at: http://www.cws.scf.ec.gc.ca/pub/tr/tech357/index_e.htm

Ephemeral Wetlands Conference, Workshops, and a PARC Midwest General

Meeting: provisionally February 21-22, 2002, US EPA Region 5 Chicago Office, 3rd Floor Conference Facility Room 331, 77 West Jackson Blvd (corner of Jackson Blvd and Clark St.), Chicago, Illinois. To register and for further details please contact Mery Jackson-Willis by phone at 312-886-3717, or by e-mail at jackson-willis.mery@epa.gov

Papers Needed for ASTM Symposium on Multiple Stressor Effects in Relation to Declining Amphibian Populations, April 16-17, 2002. For full details visit:

<http://www.astm.org/cgi-bin/SoftCart.exe/COMMIT/CUSTOM3/E47.htm?L+mystore+qkyy9420+998940886>



Publications of Interest

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FROGLOG is the bi-monthly newsletter of the Declining Amphibian Populations Task Force. John W. Wilkinson, Editor, Department of Biological Sciences, The Open University, Walton Hall, Milton Keynes, MK7 6AA, U.K.
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Funding for FROGLOG is underwritten by the Detroit Zoological Institute, P.O. Box 39, Royal Oak, MI 48068-0039, USA

