



FROGLOG

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

June 2007, Number 81

News from the ASG

ASG Seed Grants

We have completed our allocation of ASG Seed Grants for 2007. We received 45 proposals from 21 countries, and are funding 13 projects, for an outlay of \$26,000. This year, we are funding projects in Indonesia (4), Malaysia (1), Republic of Congo (1), Mexico (1), Poland (1), Hungary (1), Italy (1) and the USA (3). On behalf of the ASG and Chester Zoo, congratulations to all of our 2007 Seed Grant recipients.

CEPF Grants

The ASG continues to fund projects under the CEPF scheme and welcomes inquiries about funding for all regions: more details about which regions are eligible can be found at www.cepf.net.

Sabin Award 2007

On May 17 the ASG honored the first recipient of the Sabin Award for Amphibian Conservation at an awards luncheon in New York. Thanks to a generous donation from Mr Andrew Sabin, this annual award will recognize an individual or group that has made significant contributions to amphibian conservation. The first award went to Dr Luis Coloma from the Pontificia Universidad Catolica del Ecuador. Despite being a relatively small country, Ecuador is ranked third in the world for total number of amphibian species (447) and number of threatened species (163). Dr Luis Coloma's research has advanced our understanding of why frogs and salamanders are disappearing so rapidly in the Andes region of South America. In addition, he has led a broad campaign in his country to educate his fellow countrymen on the plight of amphibians and what can be

done to save them. He is also implementing conservation projects to save species most at risk. At the luncheon, introductory speeches by Dr Claude Gascon and Mr Andrew Sabin were followed by a moving presentation by Dr Coloma about the status of amphibians in Ecuador and efforts to protect them.

New Zealand's Native Frogs: Ancient, Threatened and the Object of Intensive Conservation Effort

By Tim Halliday

New Zealand has a tiny native amphibian fauna, containing a single genus (*Leiopelma*) consisting of four extant and three extinct species. Among the world's most ancient amphibians, they have remained largely unchanged for 160 to 200 million years. They appear to communicate by chemical means, with only a limited ability to make sounds or to hear them. Essentially terrestrial in their habits, they probably rarely need to swim; when made to do so, they kick their hindlegs alternately, not synchronously as most frogs do. They are remarkably calm and relaxed when handled.

They are highly restricted in their distribution, confined to isolated populations in small remaining areas of native forest on the North Island, and to a few offshore islands in Cook Strait. Known from 1861 as a single species, Hochstetter's frog (*L. hochstetteri*), new species have been described recently: Hamilton's frog (*L. hamiltoni*) in 1919, Archey's frog (*L. archeyi*) in 1942, and the Maud Island frog (*L. pakeka*) in 1998. Archey's frog is listed as Critically Endangered, Hamilton's frog as Endangered, the other two species as Vulnerable.

Like much of New Zealand's fauna, these frogs owe their precarious situation to a combination of habitat loss and degradation and the impact of a variety of introduced mammals. In addition, chytridiomycosis has had a severe impact on some populations, notably of Archey's frog in the Coromandel peninsula (Bell *et al.*, 2004). However, sympatric populations of Hochstetter's frog seem not to have been so affected.

These remarkable frogs are now the subject of an intensive conservation effort, involving close cooperation between New Zealand academic and zoo communities. This involves raising public awareness about these obscure and secretive animals, the creation of reserves, habitat restoration and translocation. The news is not all bad; a new population of Hochstetter's frog has recently been found (Baber *et al.*, 2006) and, as a result of habitat restoration efforts on Maud Island, the population of its native frog appears to be expanding quite rapidly (ongoing work by Jacqueline le Roux and Ben Bell, Victoria University of Wellington).

The New Zealand frog conservation programme provides a model for comparable initiatives elsewhere in the world, and shows the value of collaboration between science, zoos and local groups. For example, a translocation of Maud Island frogs has been used to develop and test a theoretical model of translocations, enabling critical assumptions about how translocated animals behave to be tested (Trewenack *et al.*, in press).

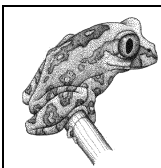
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The Amphibians of Mount Gede Pangrango and Mount Salak, Indonesia

By Mirza D. Kusriani, A. Fitri, W. Endarwin and M. Yazid

Although there is good evidence that amphibian declines are a global problem, most reported amphibian declines have occurred in developed countries or in countries that have a strong research culture. Almost no declines have been reported in Indonesia. However this may be due to a lack of research and long-term monitoring in this country (Iskandar & Erdelen, 2006).

In 2003, we conducted amphibian surveys in two mountainous areas in West Java province: Mount Gede Pangrango National Park (highest peak 3,400 m above sea level) and Mount Salak (part of Mount Salak-Halimun National Park; with the highest level of 2211 m). Both mountains represent some of the few remaining pristine areas of the heavily populated West Java province. Liem (1971) described 19 species of amphibians in the Cibodas Trail of Mount Gede from 1961 to 1964. Unfortunately, there are no further available reports of Mount Gede amphibians after this time. There are no comprehensive surveys of the amphibian fauna of Mount Salak region either, and only a few reports on amphibian biodiversity in adjacent areas.

Surveys by The Indonesian Institute of Science (LIPI) in 1999-2001 in Mount Halimun region found 27 species of frogs (Mumpuni, 2002).

We conducted Visual Encounter Surveys (Heyer et al., 1994) in several locations inside the national park with different types of habitat encompassing the forest floor, water bodies and surrounding vegetation. The occurrence of a species was determined by finding adults as well as larvae and if possible by male vocalization. Surveys in Mount Gede were conducted from September 2004-February 2005, comprising nine locations ranging from 700-2740 m asl including locations reported by Liem (1971). A second series of monitoring surveys has been underway since November 2006. Surveys in Mount Salak were conducted in 7 locations, ranging from 700-340 m asl from December 2005-June 2006. Each location was visited once, for four days in a row.

In total we found 19 and 21 species from five families (*Bufo* *Microhylidae*, *Megophryidae*, *Ranidae* and *Rhacophoridae*) for Mount Gede Pangrango NP and Mount Salak NP respectively. The number of species found in Mount Gede Pangrango NP were less than those found by Liem (1971) and species composition differed. Four species from Liem's result were not found in the first survey: *Fejervarya cancrivora*, *Bufo bipocartus*, *Microhyala palmipes* and *Rana nicobariensis*. Instead, we found additional species: *Rana hosii*, *Leptophryne borbonica*, and *Limnonectes macrodon*. During our second year monitoring in Mount Gede Pangrango NP (November 2006-February 2007) we found the missing *M. palmipes*. A particularly important finding was of a caecilian *Ichthyophis hypocyaneus* in Bodogol (700 mm asl). This is the first record of a caecilian in Mount Gede Pangrango NP. No mass mortalities were found on either mountain, however, an adult *Limnonectes kuhlii* was found dead, floating in a small puddle of water on the side of a walking trail

in Chevron Geothermal Concessions in Mount Salak.

With additional data based on the work from Mumpuni (2002), we compiled a list of 26 frog species in the vicinity of Mount Gede Pangrango NP and Mount Halimun-Salak NP area which represent almost two-thirds of the total Java species (Iskandar, 1998). From this list, 12 species were not found in one or two locations. Based on the known biology and distribution of each of these species, we categorized three types of threat. "Red" represents species that are currently under threat, "yellow" represents species that might be vulnerable to threats and "green" represents species of least concern.

Leptophryne cruentata is the only species that is currently under threat (IUCN Red List, Critically Endangered). This small bufonid is currently found in Curug Cibeureum (Mount Gede Pangrango NP). The number found during the first sampling was very low (three individuals). However, during the second sampling we found more individuals including an aggregation of about 15 frogs which were well hidden in a moss-covered rock crevice in a wall of one of the three waterfalls in Cibeureum. Kurniati (2003) found three individuals of *L. cruentata* in Cikeris (Mount Halimun), which suggest that the current distribution of this frog is not restricted to the Cibeureum area alone.

We put three species of tree frogs (*Nycticalus margaritifer*, *Philautus vittiger* and *Philautus pallidipes*) and a caecilian *Ichthyophis hypocyaneus* in the "yellow" category. All three tree frogs are endemic to Java with little or no bio-ecology information available. This entire species is rare, probably because of their cryptic nature (the genus *Philautus* are very small), although we cannot dismiss the possibility that populations may be in decline.

Seven species were placed in the "green" category (*Bufo bipocartus*, *Rana nicobariensis*, *Rana erythraea*, *Fejervarya cancrivora*, *Occidozygia sumatrana*,

Microhyla palmipes). Although only found in one or two locations, almost all of these species are found in human settlements and are widely distributed.

There are several potential threats for frogs in both areas. Anthropogenic threats in the form of habitat modification are relatively absent in Mount Gede Pangrango, but more apparent in Mount Salak. Other potential threats are due to human visitation in the national park which include trampling of bottom substrate and more importantly solid waste such as plastics and empty tin cans.

Although chytridiomycosis has not yet been detected in Indonesia, locations in high elevations have suitable environmental conditions favourable to chytrid. For instance the temperature in Gede Pangrango NP and Halimun Salak NP in West Java ranges from 13.5-28°C in the morning to 9-21°C at night. The humidity in all locations is high, ranging from 63-100%. Using environmental variables, Ron (2005) developed a model to identify the geographic ranges of *B. dendrobatidis*. Although the primary focus of Ron's research is neotropical, his model also predicted the occurrence of *B. dendrobatidis* in the montane forests of Java and Sumatra.

Knowledge of the population dynamics, ecology and biology of the amphibians in this report is generally poor. Therefore, there is a need to do more research to ensure conservation of these species, and in particular, for determining the cause of decline of *L. cruentata*.

Acknowledgments

We thank our volunteers for this project especially M. Lubis, N. Sholihat, A. Ul-hasanah, S. Kirono, F. Irawan, M. H. Lutfi, and B. Darmawan. Funding for this survey was granted from BP Conservation Programme (Mount Gede Pangrango) and The Wildlife Trust (Mount Salak) for which we are grateful.

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Conservation of the Crapaud

By John W. Wilkinson

In September 2004, I began a 3-year study, funded by the Jersey Ecology Fund, on the common European toad (*Bufo bufo*) in Jersey, British Channel Islands. The species has cultural associations with Jersey and its islanders (both are known as *crapauds*!) and was once supposedly very common there. Declines have been recorded for several decades and the toad is now restricted to fewer than ten semi-natural breeding ponds in the wild in Jersey. A media appeal run in conjunction with the Durrell Wildlife Conservation Trust has, however, resulted in some 200 garden pond records from members of the Jersey public.

It is not usual for *B. bufo* to breed in small ornamental ponds of the type it uses in Jersey, though there is evidence of

plasticity in breeding site choice in this species from areas where the geology does not favour large water bodies. A selection of garden-pond breeding sites is being visited and their population dynamics compared with the few remaining natural breeding ponds. Any differences in genetic diversity at garden and "wild" toad ponds are also being assessed and compared with sites in NW France and S England. Many garden sites have only one or two reproductive female toads each year and this has implications both for genetic fitness and the long-term viability of the population.

There is an abundance of small farm reservoirs in the agricultural areas of Jersey that are rarely, nowadays at least, utilized as toad breeding sites but that would seem to be suitable. An experimental examination of the effects of water quality variables, coupled with landscape-scale analysis of features associated with toad breeding ponds in Jersey, will hopefully elucidate the factors influencing toad distribution on the island and reveal elements important for their conservation. It is, for example, perhaps important that toads in Jersey often breed as early as January so their spawn and larvae may be especially susceptible to runoff containing the products of winter-crop fertilizer applications.

Jersey crapauds seem to be demonstrating remarkable adaptation to local conditions – those in nearby France seem inclined to act like more conventional toads – surviving in novel habitats and with an unusual reproductive ecology. This serves as a salient reminder to all of us engaged in amphibian decline research that there are always new things to be discovered about even well-known species and that decline phenomena often owe more to specific local conditions than to global pandemics or rampant urbanization. It is perfectly possible that, without the housing boom in Jersey due partly to the success of the offshore finance industry, there may be no toads now left on Jersey and an island would have lost a cultural icon.

For further information about this study please contact John Wilkinson (jwwwws@kent.ac.uk).

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, please contact Tim Halliday: t.r.halliday@open.ac.uk.

Betsie B. Rothermel & Victoria Vazquez (2006) Assessing the susceptibility of North American plethodontids to chytrid fungus infection.

(vvazquez@plantbio.uga.edu)

The following papers report work supported by previous DAPTF Seed Grants:

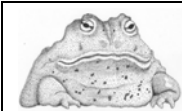
Hartel, T., Nemes, S. & Mara, G. (2007) Breeding phenology and spatio-temporal dynamics of pond use by the yellow-bellied toad (*Bombina variegata*) population: the importance of pond availability and duration. *Acta Zoologica Lituanica*: **17**: 56-63. (Grant to Tibor Hartel *et al.*, 2004.)

(asobeka@yahoo.com)

Karraker, N. E. (2007) Are embryonic and larval green frogs (*Rana clamitans*) insensitive to road deicing salt? *Herpetol. Conservation & Biol.* **2**: 35-41. (Grant to Nancy Karraker & James Gibbs, 2002, funded by ARMI)

(karraker@hkucc.khu.hk)

Tim Halliday



Bd Mapping Project: Help Wanted

Bd (*Batrachochytrium dendrobatidis*) is the amphibian chytrid fungus that may be contributing to worldwide amphibian losses. To synthesize our knowledge of Bd, including both science and management aspects, a Bd Symposium is being planned in Tempe, Arizona, USA, 5-7

November 2007 (see further details below). For this symposium, we have launched a Bd Mapping Project: we are compiling localities of Bd detections (and surveys with no detections) in order to present a snapshot of its current global geographic scope. For the Bd Symposium, locations will be mapped at a fairly coarse resolution for display of global patterns. Maps will be shown at the Symposium in a presentation, and may be published in an article for a journal issue that will present the key papers from the Symposium. After the conference, data may reside with regional coordinators, or other agencies and institutions for continued updates (e.g., the Amphibian Specialist Group [formerly the DAPTF]). The maps may be displayed on the web, either as a result of the conference or in association with these groups.

We are asking for volunteer regional coordinators to help compile Bd information for their area, which will be assembled for mapping in September and October, 2007. We give thanks to the many of you that have already volunteered to spearhead this in your country or area. We have not found coordinators for many regions, however. Can you help for your region? For further information about the Bd mapping project please contact Dede Olson, Bd Mapping Project coordinator, dedeolson@fs.fed.us



Froglog Shorts

SAVE THE DATE!!!

The U.S. Fish and Wildlife Service and the Partners in Amphibian and Reptile Conservation (PARC) are organizing an international symposium on the Chytrid fungus *Batrachochytrium dendrobatidis*. The purpose of the symposium will be to bring together researchers and managers to discuss our current knowledge of this organism and its impacts on worldwide amphibian populations and to strategize ways to prevent its spread and manage effected populations. The symposium is going to be held November 5-7, 2007 at the Sheraton Phoenix

Airport Hotel in Tempe Arizona, USA. For additional information please contact Dr. Robert Bakal, (Robert_Bakal@fws.gov.)

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.

Please contact Robin Moore rdmoore@conservation.org for further information concerning this position.



**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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