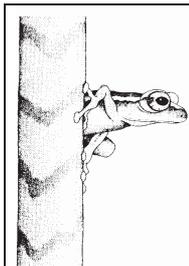


FROGLOG

Newsletter of the Declining Amphibian
Populations Task Force

December 2003, Number 60.



Populations of
Two Species of
Forest Frogs,
Genus
Platymantis, are
Diminishing on
Negros Island,
the Philippines

By C.N. Dolino, E.L. Alcalá and A.C.
Alcalá, DAPTF WG Chair,
Philippines

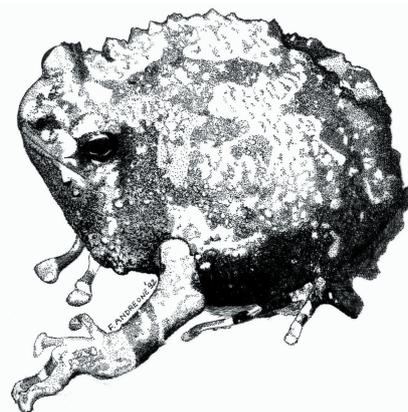
Two forest frogs, *Platymantis negrosensis* and *P. dorsalis*, on Negros Island, Philippines appear to be decreasing in numbers. This report is based on our fieldwork in 1996-2003.

P. negrosensis, which is found in aerial microhabitats in primary forest, such as ferns and screw pines, all over Negros Island, at elevations from sea level to over 1,000 m above sea level, was fairly abundant in southeastern Negros 40-50 years ago (Brown and Alcalá 1961, Alcalá and Brown 1998). The calls of one male were recorded in Valencia, Cuernos de Negros area (1,000m elevation) in 1996 and this individual was collected. Subsequent fieldwork in 1998 revealed only a couple of males calling from their microhabitats (aerial bird's nest ferns). Field observations in central Negros (Mabato, Ayungon) and in southeastern Negros (Mantikil, Siaton) indicated a few males calling in 1999-2000. The species has become very rare in the Cuernos de Negros and Lake Balinsasayao area in southeastern Negros since 2001. Three recent attempts to observe this species in the area have proved negative. No calls of this species during the breeding season have been heard in the Cuernos de Negros-Lake Balinsasayao area last year (2002). This species no longer exists in the forest fragments in southwestern Negros, where its aerial microhabitats are missing. The CI/CABS IUCN/SSC

Global Amphibian Assessment, Mainland South East Asia group 2002, tasked to determine the conservation status of this species, considers this species Critically Endangered. Current available information confirms this assessment.

P. dorsalis, which has been confirmed to occur on Negros and Luzon (Alcalá and Brown 1998), used to be a very common forest floor species in the primary tropical rainforest on Negros Island (Taylor 1920, Inger 1954, Brown and Alcalá 1961). Fieldwork in southwestern Negros in December 2001 - October 2002 has shown that this species is found in both limestone and non-limestone (volcanic) forests and shares the forest floor microhabitat in limestone forests with the Negros cave frog, *P. spelaeus*, which is a strictly limestone species. We have explored nine forest fragments (eight limestone and one non-limestone) with areas ranging from several to 122 hectares in southwestern Negros and have confirmed the presence of *P. dorsalis* in all but one. The exception is an open-canopy limestone forest fragment that lacked sufficient ground cover (forest duff, rotting vegetation, etc.). We concluded that the species was originally present in all of the eight limestone fragments but has disappeared in one of them.

There is field evidence that the population density of *P. dorsalis*, as determined by thoroughly exploring eight 10m x 10m plots in each of the nine small forest fragments of various sizes in southwestern Negros, in December 2001 - October 2002, has decreased. The mean density (and SE) of adult and subadult *Platymantis dorsalis* in the 8-ha Canlabac non-limestone forest fragment (elevation, 300m above sea level) is $2.37 \pm 0.84/100m^2$, or 237 frogs/ha, the highest density in the eight forest fragments where it has been found. Only about four hectares of this forest fragment are suitable as frog



microhabitat. The estimate of the total population of this frog in the Canlabac forest would be $237 \times 4 = 948$ adults. This population size is probably too small to ensure its survival in this forest fragment, and a continuous monitoring of this population is needed. In the seven limestone forest fragments (elevation, 100-400m above sea level) where the species has been found, the mean density ranges from 0.37 ± 0.13 to $2.25 \pm 0.79/100m^2$ or 37-225 frogs/ha. The mean for all the plots in seven limestone fragments is $0.67 \pm 0.14/100m^2$ or 67/ha. The estimates for both non-limestone and limestone forest fragments in southwestern Negros (237/ha; 67/ha) are lower than that for Cuernos de Negros, southeastern Negros (588.5/ha), based on two 100ft x 100ft plots (hence no error estimates) at an elevation of 1,100m (Brown and Alcalá 1961). A 14-ha plantation forest (control) did not harbor this species, indicating that it did not meet the suitable physical and ecological conditions required by this species. The population density in the eight forest fragments (plot data combined) appears to have declined during the past 50 years.

The IUCN group mentioned above considered this species Near Threatened. It should, however, be considered Threatened in some forest fragments on Negros Island, like those in southwestern Negros.

This population decline of *Platymantis negrosensis* and *P. dorsalis* on Negros Island, the Philippines, may be attributed to the combined effect of fragmentation and degradation of the tropical rain forest on Negros Island over the past 50 years.

Acknowledgments

We are pleased to acknowledge the financial support of the ASEAN Regional Centre for Biodiversity Conservation (Directors, John MacKinnon and Gregorio Tecson) and

the assistance in the field of Jejo Ledesma, Jemuel Dulla, and Crestituto Batal.

References

Alcala, A.C. and Brown, W.C. (1998) *Philippine Amphibians. An Illustrated Field Guide*. Bookmark, Inc., Quezon City, Philippines.

Brown, W.C. and Alcala, A.C. (1961) Populations of amphibians and reptiles in the submontane and montane forests of Cuernos de Negros, Philippine Islands. *Ecology* **42**: 628-636.

Inger, R.F. (1954) Systematics and zoogeography of Philippine amphibia. *Fildiana: Zoology* **33**: 181-531.

Taylor, E.H. (1920) Philippine amphibia. *Philippine Journal of Science* **16**: 213-359.

Contact: Angel C. Alcala
suakcrem@philwebinc.com

Action plan for sustainable exploitation of *Rana ridibunda* stocks from the Danube Delta Biosphere Reserve (Romania)



By Zsolt Török

The decline of fish-stocks from the Danube Delta is a well-known phenomenon. Between 1945–1989, the quantities of fish harvested on the actual territory of the Danube Delta Biosphere Reserve (DDBR) decreased from about 47,000 tons to 5,116 tons (Dragomir & Staraş, 1992). In order to reduce some part of the pressure on fish stocks toward other natural resources, the DDBR Authority has requested specific proposals for sustainable exploitation of frog, shellfish, leech and crayfish stocks from the DDBR area.

According to studies carried out in 1960–1970, in the continental waters of Romania (about 60,000 ha) the total amount of edible frog and marsh frog biomass ranged between 352 and 572 tons, of which 60% is suitable for selling on the market. In 1965, 152 tons of frogs were harvested in Romania (Ghelase & Iacovu, 1966). The criterion for frog exploitation during that period was that no less than 120 tons of frogs would be harvested each year. The conservation measures were a prohibition period between April 1st and May 15th, and establishment of a minimum body-weight limit for captured frogs (Ghelase & Iacovu, 1966). As a result, “some biotopes crowded with frogs in the past, in 1964 were practically depopulated” (Bacalbaşa, 1966). Furthermore, in the 1981–1985 period the frog quantities harvested in the Danube

Delta decreased from 77 tons to 27 tons (Mitache, 1989).

Several critical factors have to be taken into account in the design of frog stock exploitation (Semlitsch, 2000); the number and density of the specimens occurring in the exploitation areas, habitat diversity (depending on hydrological factors), and the probability of dispersion of specimens between neighbouring areas. In studies of population density and dynamics the following parameters were taken into account: fecundity, natality, recruitment, age of sexual maturity, the number of years when adults can have offspring, and mortality in different age classes (Duellman & Trueb, 1994).

The management of frog stocks from the DDBR includes:

1. Assessment of Marsh Frog biomass existing in the DDBR

In 2001 we carried out pilot studies in:

- Somova-Parcheş area (9,170 ha) (pre-deltaic wetlands);
- Şontea-Fortuna area (24,636 ha) (so-called fluviatile delta);
- Roşu-Puiu area (42,300 ha) (so-called maritime delta).

2. Establishment of limits for exploitable quantities of Frogs

The Romanian regulations indicate 30g as the minimum body-weight limit of frogs that can be harvested from natural waters. This weight is that of sexually active specimens at least 2 years old. According to Sin (1980), sexually active specimens represent between 22% (May) and 27% (July) of frog populations. Sin (1981) concluded that, in September, the specimens with the biggest body-size represent only 6.58% of the numbers of individuals of the populations, but the biomass of these large specimens represents about 15% of the population biomass. Due to the fact that harvesting has the most severe impact on the biggest specimens, the limit for exploitation of *Rana ridibunda* stocks from DDBR should be below 15% of the total biomass of sexually active specimens.

3. Minimum body-weight

Analyses have revealed that *R. ridibunda* females have between 3.5–4.7g (April and September) and 17.4g (June) of food in their stomach. In the case of males, the average weight of the food ranges between 2.9 – 4.3g (April and September) and 26.5g (in June) (Valenciuc & Ion, 1993). Consequently, as a protection measure of local Marsh Frog populations, the DDBR Authority has established 40g (instead of 30g) as

the minimum body-weight of harvested *R. ridibunda* specimens.

4. Regulation of harvesting techniques

The following methods are allowed to be used by frog collectors in the DDBR area:

a) capture with the “Italian fishing rod” – the frogs are captured with the help of a coloured material (textile, piece of plastic etc.) fixed at the end of a rope attached at the tip of a stick. The attracted specimens are immobilised with the help of a hand-net (Ghelase & Iacovu, 1966).

b) capture with the use of a device called a “torbuc” (a metal frame fixed to the end of a stick, and with a long, small-meshed net attached). This frame is pushed suddenly toward the specimen chosen by the collector.

5. Regulation of the harvesting periods

Prohibition periods for exploitation of marsh frogs from the DDBR are: 15 November – 31 March (hibernation and post-hibernation period) and 1 April – 31 May (breeding period). Also, between 15 April and 15 June there is a general ban on fishing in the DDBR, the capture of frogs also being prohibited. Practically, due to these limitations, the only harvesting period is between about 15 June and 30 October (maximum 4.5 months).

I welcome and invite contact with other researchers involved in amphibian stock assessment and the establishment of quotas. Contact: Zsolt Török, Danube Delta National Institute, 165 Babadag street, Tulcea 820112, Romania.

torok@indd.tim.ro

References

Bacalbaşa N. (1966) “Cu privire la posibilităţile de creştere extensivă şi de exploatare a broaştelor comestibile în România”. *Ind. alim.* **17(9)**.

Dragomir N. & Staraş M. (1992) “Dinamica unor efective de păsări de importanţă faunistică din Delta Dunării şi impactul biologic asupra producţiei piscicole în perioada 1945 – 1989”. *Ocot. nat. med. inconj.* **36(2)**.

Duellman W.E. & Trueb L. (1994) *Biology of Amphibians*. The John Hopkins University Press, Baltimore.

Ghelase I. & Iacovu Gh. (1966) “Broaştele, o importantă resursă naturală”. Edit. Centrocoop.

Mitache V. (1989) “Evoluţia ihtiofaunei în bazinele naturale din Delta Dunării şi măsurile de protecţie şi creştere a producţiei piscicole”. *Delta Dunării*, **3**.

Semlitsch R.D. (2000) Principles for management of aquatic-breeding amphibians. *Journal of Wildlife Management* **64(3)**.

Sin, Gh. (1980) “Cercetări asupra ecologiei broaştei *Rana ridibunda* Pallas 1771 din zona inundabilă a Dunării”. Rezumatul tezei de doctorat.

Sin, Gh. (1981) "Aspecte ale producției și energeticii la *Rana ridibunda* din balta Comorovca (zona inundabilă a Dunării)". *Producția și productivitatea ecosistemelor acvatice*, Edit. Acad. R.S.R..

Valenciuc N. & Ion I. (1993) The comparative researches concerning the food in *Rana ridibunda* Pall. (Amphibia) and *Lacerta agilis* L. (Reptilia). *Anal. Șt. Univ. "Al. I. Cuza" Iași, s. Biologie animală*, vol. 37 – 39.

Report of a breeding aggregation
extirpation of an endemic
marsupial frog, *Gastrotheca*
christiani, in Argentina



By Marcos Vaira

In Argentina, habitat loss and land conversion was considered a potential cause of declines and disappearances of many amphibian populations (Lavilla, 2001). However, direct evidence for declines due to habitat destruction has rarely been reported (Lavilla et al., 2000; Lavilla and Cei, 2001). For most Argentinean species, little or no baseline data exist and there are no published reports which have documented declining populations (Young et al., 2001).

Gastrotheca christiani is a marsupial frog endemic to northwestern subtropical montane forests of Argentina. It was listed as vulnerable by Lavilla et al. (2000). The species appears to be a habitat specialist associated with rock crevices and tree hollows (Laurent et al., 1986). I provide information on the extirpation of a long-term monitored breeding aggregation as a consequence of maintenance activities on an unpaved road at the Parque Nacional Calilegua, an area of montane forest in northwestern Argentina (23°35' S, 64°50' W).

Gastrotheca christiani is confined to elevations from 1550 to 2600 m (Laurent et al., 1986). There were 5 sites for which the species was historically recorded from 1967 to 1981. Since then, only one site has been monitored. Abra Colorada is located 50 meters outside the border of the park and, as a result, has experienced heavy disturbance since 1950 when a road was built. The area was devoid of the structural complexity typical of a montane forest, although the species still occurred there, 29 years after the first record. Throughout May 1995 to April 1997, I performed 35 visits to the park. Surveys were performed over a 24 month period allowing various seasons to be covered. The species

was easily monitored by aural surveys. Calling males were heard inside deep crevices of an isolated rock surrounded by exposed red soil by the steep side of the road. I caught two females (both found carrying eggs inside the pouch) so there was direct evidence of breeding activity occurring at the site. On 11 September 1996, the breeding aggregation experienced a complete habitat loss as a result of road maintenance activities. Thirteen frogs were found dead inside pieces of the rock apparently because of exposure to dehydration. The site and nearby areas were the subject of intensive surveys for another 3 breeding seasons. In 1997 I found no frogs although I visited the site bi-weekly from January to April. During 1998 to 1999 I surveyed the site and nearby areas 28 times, but no frogs were heard or detected. I repeated the surveys, both day and night, for many months until 2002.

Since decimation of this breeding aggregation occurred with no evidence of recovery, I conclude that the species has been extirpated from the area as a result of habitat destruction. Although *Gastrotheca christiani* has persisted in a heavily disturbed site over 25 years, and several other anuran species known from this and nearby areas seemed to be stable (Vaira, 2002) a substantial intensification of the threat could increase the vulnerability of such small breeding aggregations.

A rapid rate of habitat loss and degradation in the subtropical montane forest of Argentina has been noticed by several authors (Brown and Grau, 1995). The lack of knowledge of the population biology of *Gastrotheca christiani* is of particular concern. Baseline data on distribution, habitat preferences, and population size are urgently needed. Given the data presented in this report, it seems appropriate that the Vulnerable status of *Gastrotheca christiani* should be maintained.

Acknowledgments: Research was supported by a grant from CONICET and a Seed Grant from DAPTF to E.O. Lavilla. Permits for field work were provided by Delegación Técnica de Parques Nacionales Regional Noroeste.

References

Brown, A.D. & Grau, H.R. (1995) *Investigación, Conservación y Desarrollo en Selvas Subtropicales de Montaña*. Proyecto de Desarrollo Agroforestal/LIEY, Tucumán, Argentina.

Laurent, R.F., Lavilla, E.O. & Terán, E.M. (1986) Contribución al conocimiento del género *Gastrotheca* Fitzinger en Argentina. *Acta Zoológica Lilloana* 38: 171–210.

Lavilla, E.O. (2001) Amenazas, declinaciones poblacionales y extinciones en anfibios argentinos. *Cuadernos de Herpetología* 15: 59-82.

Lavilla, E.O. & Cei, J.M. (2001) *Amphibians of Argentina. A second update, 1987 – 2000*. Monografía XXVIII. Mus. reg. Sci. nat. Torino

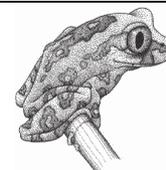
Lavilla, E.O. et al. (2000) Categorización de Anfibios Argentinos. In: Lavilla, E.O., Richard, E. & Scrocchi, G.E., (Eds) *Categorización de Anfibios y Reptiles de Argentina*. AHA, Tucumán, Argentina

Vaira, M. (2002) Anurans of a subtropical montane forest in northwestern Argentina: ecological survey and a proposed list of species of conservation concern. *Biodiversity and Conservation* 11: 1047-1062.

Young, B.E. et al. (2001) Population declines and priorities for amphibian conservation in Latin America. *Conservation Biology* 15: 1213-1223.

Contact: Marcos Vaira, Conicet, Museo de Ciencias Naturales UNSA, Mendoza 2 4400, Argentina.

mvaira@argentina.com



Non-finding of
the Kenyan
endemic frog
Arthroleptides
dutoiti

By Stefan Lötters, Damaris Rotich
and Michael Veith

Arthroleptides dutoiti Loveridge, 1935 (*Bull. Mus. Comp. Zool.*, 79: 17) is a small riparian petropedetid frog only known from the lower eastern versant of Mount Elgon in the Kenyan highlands. According to the original description, three specimens were collected on 8 January 1934 at the Koitobos River at 7,200 feet. Additional material was collected on 6 April and 17 May 1962 at the Suan River at 7,000 feet (cf. Klemens, 1998, *Herp. J.*, 8: 35-40).

At about these altitudes (i.e. roughly above 2,000 m asl) is the border of the Mount Elgon National Park (under Kenya Wildlife Service, KWS). From here, well forested areas inside the park continue up to Mount Elgon's tree line. Outside the park, at the foot of Mount Elgon, landscapes nowadays mostly comprise agricultural land. The Koitobos River is part of a fluvial system running off Mount Elgon. However, this name is only used for the lower portion, i.e. where several streams unite at about the area of the park border and from there downstream. Because of the altitude given in the original description, we consider the area of the park border to include the type locality. The Suan River is part of another fluvial system running off

Mount Elgon.

We have failed to find *Arthroleptides dutoiti* on three trips to the area of the type locality at lower Mount Elgon National Park (01°02' N, 34°47' E; ca. 2,150-2,300 m asl). In September 2001, June 2002 and May 2003, we each went for several days and did both opportunistic day and night sampling in seven streams (which contribute to the Koitobos River) and at the Chululus Swamp in the forest zone of the National Park. During the 2001 and 2003 searches there were frequent rains. Other frog species, including a riparian *Afrana* species, were common. We have not sampled at the Suan River and tributaries or in agricultural lands at the foot of Mount Elgon.

Arthroleptides dutoiti is considered an "extinct species" on the 1996 IUCN Red List of Threatened Animals (ed. by Baillie and Groombridge, 1996; Gland, Switzerland), although, to the best of our knowledge, no comprehensive inventories have been performed in the Mount Elgon region. Our data are also non-comprehensive. They support the idea, however, that *A. dutoiti* may be difficult to find (probably due to population declines) or even extinct. Comprehensive surveys will be undertaken to study the status of *A. dutoiti*.

Contacts: Stefan Lötters or Michael Veith, Zoological Institute, Ecology Department, Mainz University, Saarstrasse 21, 55099 Mainz, Germany.

gadag_kenya@web.de

Damaris Rotich, National Museums of Kenya, Herpetology Department, Museums Hill, P.O. Box 40658, Nairobi, Kenya.

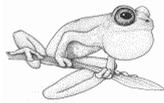


Reports on DAPTF Seed Grants

Recipients of DAPTF Seed Grants are generally expected to publish the results of their projects in refereed journals, or as articles in *Froglog*. They are also required to send us reports, so that their results can be made available to DAPTF members. Below is a list of reports that we have received recently. Anyone wanting a copy of a report should contact the author in the first instance; we can supply copies if you cannot reach the author.

Savitha Krishna (2001) Establishing baseline data of anurans populations to monitor their fluctuations in the Western Ghats of Karnataka (South India). **savithakn@hotmail.com**

Georgina Santos-Barrera & Jesus Pacheco (2002) Conservation status of three species of toads in northwestern México. **gsantos@miranda.ecologia.unam.mx**



DAPTF Rapid Response Fund

The DAPTF maintains a small fund to provide support for researchers and herpetologists facing problems that require urgent action. We have recently provided support for two projects and are considering another.

Ronald W. Gagliardo (Atlanta Botanical Garden) is investigating a recently discovered population of *Atelopus varius* in Costa Rica.; this species has not been seen for many years. This project will specifically investigate the range and size of this population and whether it is resistant to chytridiomycosis.

We are supporting Heiko Werning (Berlin) in his contribution to a joint Chilean-German project to investigate recent declines and reported deformities in *Rhinoderma* spp. in Chile.

We are considering a request from James Vonesh (University of Florida) to support a rapid assessment of a crisis facing amphibians in the East Usambara Mountains of Tanzania. This important region is currently experiencing a gold rush, with as many as 10,000 prospectors looking for gold in forest streams.

For further details, contact the DAPTF Director, Tim Halliday:

t.r.halliday@open.ac.uk

Book Offer for Daptf Members

As a member of DAPTF, Oxford University Press would like to offer you the opportunity to purchase *Naturalized Reptiles and Amphibians of the World* by Sir Christopher Lever at a preferential 20% discount. Lever describes how the various alien reptiles and amphibians now living in the wild throughout the world were first introduced, and subsequently became naturalized. Lever is a member of the IUCN/SSC Invasive Species and Reintroduction Specialist Groups.

List Price £75.00 / \$135.00 - **Discounted price £59.95 / \$100.00**

For more detailed information please visit the website at: <http://www.oup.co.uk/isbn/0-19-850771-2>

To receive an order form contact Emma Bailey:

emma.bailey@oup.com quoting the code **EBBIO03** or telephone: +44 (0) 1865 354795

Froglog Shorts

DONATIONS We gratefully acknowledge receipt of these donations, received prior to November 25, 2003. Individuals: Nancy E. Karraker, Andrew L. Sheldon, Kurt A. Henkel, Mark R. Jennings, Stephanie Manning, Lawrence A. Wilson, James H. Harding, James S. Andrews, Julian R. Harrison, Lauren J. Livo, John C. Murphy, Jr., C. Kenneth Dodd, Jr., Douglas A. Rossman, John A. Hall, Ronald & Miriam Heyer, Lorelei S. Saylor, Debra Patla, Terri L. Roth, James E. Platz, Robert M. Storm, Gary S. Casper, William A. Dunson, Kelley O'Neill, Kendrick Moholt, Marilyn W. Ort,

Martin S. Fisher, Phillip A. Greenberg, Anthony P. Russell, Raymond J. Stein, Charlotte C. Corkran, Allan Muth, Glenn R. Stewart, Baynard H. Brattstrom, John D. Constable, Bruce L. Christman, David G. Rich, Owen J. Sexton, Terry A. Gampper, Elizabeth Kaeding, Thomas K. Pauley, Dennis A. Merritt, Jr., Robert Davic, Marvilee & David Wake, Christina Richards, Patricia Brown, Fred Kraus, Richard G. Zweifel, Rodolfo Ruibal, Patricia J. Rand, Jane W. Mead, J. Kirwin Werner, F. Harvey Pough, Lorraine M. Maloof, Randy Blasus, Robert T. Brooks, Linda T. Torp, Ted M. Davis, Charles Z. Leavell, Kent Vansoo, Norm P. Damm, Stanley S. Hillman, Stephen P. Kaylor, Margaret M. Stewart, Mr. & Mrs. Donald R. Farrar. **Institutions:** Desert Fishes Council, Tucson Herpetological Society, Zoological Society of Philadelphia, California Academy of Sciences, Melbourne Zoo, Jumping Frog Research Institute, Rosamond Gifford Zoo, Audubon Commission, Minnesota Herpetological Society, Pacific Rivers Council, Inc.,

Monitoring Amphibians in Great Smoky Mountains National Park is a new USGS circular by C.K. Dodd, Jr. It contains much useful information on topics such as monitoring, data handling and precautions against disease transmission. Also included are some good photographs of species and habitats and (particularly) excellent illustrations of salamander larvae and anuran tadpoles and their mouthparts – for species found in the National Park. Copies of the circular (#1258) can be purchased from: US Geological Survey, Branch of Information Services, Box 25286, Denver, CO 80225-0286, USA. Tel: 1-888-ASK-USGS

www.usgs.gov (.pdf document)

New URL for the Center for North American Herpetology: **www.cnah.org**



RANA and the US National Science Foundation grant DEB-0130273 helped support the publication of this issue.

FROGLOG is the bi-monthly newsletter of the Declining Amphibian Populations Task Force. *Articles on any subject relevant to the understanding of amphibian declines should be sent to:*

John W. Wilkinson, Editor, Department of Biological Sciences, The Open University, Walton Hall, Milton Keynes, MK7 6AA, U.K. Tel: +44 (0) 1908 - 652274. Fax: +44 (0) 1908 - 654167 E-mail: **daptf@open.ac.uk**

Funding for FROGLOG is underwritten by the Detroit Zoo. Institute, P.O. Box 39, Royal Oak, MI 48068-0039, USA.

