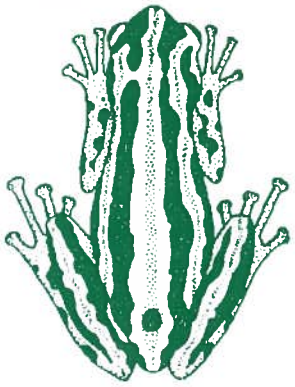
ISSN 1026-0269

*Hyperolius marmoratus*



# FROGLOG

Newsletter of the Declining Amphibian Populations Task Force

April 2000, Number 38.

## Amphibian Uses in Vietnam

**By Nguyen Quang Truong, Working Group Co-Chair for Vietnam**

There are 82 species of amphibians officially registered in The List of Reptiles and Amphibians in Vietnam (Sang & Cuc 1996). Recent research has discovered additional species of amphibians for Vietnam (some new to science), with the total now over 112 species. Among these, 10 species were listed in the Red Data Book of Vietnam (1992) consisting of 1 Endangered species, 1 Vulnerable species, 3 Rare species and 5 Threatened species.

Many species of amphibian which are valuable economically and scientifically have become rare. Some are in danger of extinction or serious decrease such as *Paramesotriton deloustali*, *Ichthyophis glutinosus*, *Bombina maxima*, *Ophryophryne poilani*, *Rana chapaensis*, *Rana kokchange*, *Rana fansipani*, *Rana cancrivora*, *Rana tomanoffi*, *Rhacophorus appendiculatus* and *Rhacophorus nigropalmatus*. These are a valuable genetic resource which must be preserved and developed in near future. The main reason leading to the above situation is overhunting and habitat destruction.

Inappropriate exploitation of amphibians is one of the direct causes leading to the reduction of amphibian populations in Vietnam. The extent of exploitation of amphibians depends upon their distribution and the demands of local people.

***1. Food Uses***

Some amphibians which are used for food are *Bufo melanostictus*, *Rana guentheri*, *Rana kuhlii*, *Rana livida*, *Rana limnocharis*, *Rana rugulosa*, *Rana spinosa* and *Rana verrucospinosa*. The species normally hunted in plain and midland areas are *Rana guntheri*, *Rana limnocharis* and *Rana rugulosa*. *Rana kuhlii*, *Rana livida* and *Rana verrucospinosa* are normally hunted in mountainous areas.

Amphibians are distributed widely throughout the country; hunting them is easy and their meat is highly prized, especially that of the larger species (*Rana rugulosa*, *Rana guentheri*, *Rana kuhlii)*. The meat of *Rana rugulosa* is considered a speciality in restaurants in cities and towns. There have been households raising this species in Hanoi City, Ha Tay and Hai Duong provinces. They have, however, not met the demands of the market. Moreover, the process of raising frogs has many problems and so the industry has not really developed. A considerable number of amphibians are taken directly from their habitat as a result.

Amphibians are not only sold for human food but for consumption by domestic and other animals. Many snake raising units buy toads and frogs to feed king cobras and cobras (*Ophiophagus hannah* and *Naja naja*).

***2. Keeping as Pets***

The species which is most kept for ornamental purposes is *Paramesotriton deloustali,* which in Tam Dao is called "crocodile in land". This is a Vietnamese endemic which is in danger of extinction. It now lives only in the Tam Dao mountain range (Vinh Phuc, Tuyen Quang and Thai Nguyen provinces) and Ba Be area (Bac Can province). In Hanoi some households keep this amphibian in glass tanks in their livingroom. Several units raise this species in order to study them such as Hanoi Zoo, Hanoi Teachers' Training University and the Institute of Ecology and Biological Resources.

***3. Medicinal Uses***

The toad (*Bufo melanostictus*) is used as a food for children who have rickets and slow growth. Many households in the countryside as well as in cities try to buy toads to make fluffy pemmican. 400g of fluffy pemmican can be made from approximately 200 adult toads. The skin secretions of *Bufo melanostictus* are also a valuable medical resource. Few efforts have been made to rear toads for medical purposes because of their abundance in some areas.

***4. Trading***

The economic value of amphibians is low and they are relatively short-lived. Little commercial trade therefore occurs. The species most often traded is *Rana rugulosa*. The price of *Rana rugulosa* per kilogram is usually from 10,000 to 20,000VND (0.7-1.5USD) in the countryside or midland. This price rises to 25,000-45,000VND (1.8-3.0USD) if they are sold to restaurants or the Chinese market.

Inappropriate exploitation of amphibians has reduced the number of species and individuals, and impacted on the natural ecological balance. In addition, environmental destruction (forestry, pollution etc.) limits their capability to reproduce and exerts negative impacts on the growth of tadpoles. In the future, if the above conditions are not improved, existence for some of the amphibians of Vietnam will probably be difficult.

Timely measurements and actions to preserve all kinds of amphibians in nature, especially the endemic and rare ones, are urgently needed. It is essential to propagandize the benefits of amphibians (e.g. killing insects, supplying food) and to encourage people to rear those of economic value. Habitat protection should be a long-term conservation strategy. These activities will partly protect amphibian populations in Vietnam against the danger of decline. At the same time, these are also a basis for the sustainable exploitation of this natural resource.

*References*

Huynh, D.H. *et al* (1997) Protection and lasting development of the wildlife resouces in Vietnam. *Pub. House of Education.*

Sang, N.V. and Cuc, H.T. (1996) The List of Reptiles and Amphibians of Vietnam. *Science and Technic. Pub. House.*

Truong, N.Q. (1999) Report on the Survey of the Extraction and Trading of the Reptiles, Amphibians and other animal species in the Pu Mat Nature Reserve, Nghe An province, 1999. 8pp.

*Contact address:* Nguyen Quang Truong, Institute of Ecology and Biological Resources, Hoang Quoc Viet St., Cau Giay, Hanoi, VIETNAM.
Tel: (84 4) 7562810
Fax: (84 4) 8361196
**dangncdv@bdvn.vnd.net**

## La red Jambato: una iniciativa para tratar el problema de la declinación de anfibios en el Ecuador

**Por Miguel A. Vázquez & David Romo**

Pese a que la declinación de anfibios es un problema con distribución mundial, gran parte de los registros sobre disminuciones drásticas en las poblaciones de estos animales han tenido lugar en zonas altas del neotrópico. El Ecuador aparentemente es uno de los territorios más afectados en virtud de la alta diversidad que posee. El fenómeno ha sido conocido por la mayoría de biólogos del país que han visto desaparecer en poco tiempo especies una vez tan comunes que fueron usadas para prácticas universitarias de campo. El fenómenos de la declinación de anfibios comenzó a ser divulgado a nivel internacional a principio de los años noventa pero fue solo desde que investigadores del Departamento de Biología de la Pontificia Universidad Católica del Ecuador determinaron que al menos 23 especies estarían en estado crítico o se habrían extinguido en los últimos quince años, que el suceso fue comprendido en su real magnitud en nuestro país.

Para abordar el problema y bajo el contexto del "III Taller Sobre Declinación de Anfibios", llevado a cabo en Quito entre el 22 y el 25 de noviembre de 1999, varios especialistas e interesados establecieron una red, como iniciativa para facilitar el intercambio de información e incentivar el trabajo y la cooperación en varios temas. El nombre escogido para la red fue "Jambato" (nombre popular dado a *Atelopus ignescens*, antes una de las especies más abundantes de bufónidos en los Andes y hoy declarada extinta). La estructura asignada fue lo más simple posible: un coordinador general, quien se encargaría de servir de enlace en temas generales y cuatro coordinadores, que estarían a cargo de cada uno de los grupos de interés establecidos (investigación; conservación y manejo; educación y capacitación y; políticas y leyes).

Para cada grupo de interés fue definido un marco de acción general, aunque los temas de ninguna manera representan límites estrictos y pueden adaptarse a la necesidad de los interesados. Para el caso de la investigación las prioridades de cooperación se centrarían en la búsqueda de nuevas especies, especialmente en área críticas, la evaluación y monitoreo de las poblaciones para determinar su estatus y la exploración de las posibles causas de declinación en aquellos casos en que se tengan evidencias de afectación. Para el campo de conservación y manejo las áreas básicas de trabajo estarían enfocadas a la búsqueda de soluciones y el mantenimiento de poblaciones afectadas, *in-situ* y *ex-situ*. En el ámbito de la educación y capacitación se espera enfocar los esfuerzos a la difusión del problema a varios niveles en la sociedad y en la producción de un boletín electrónico informativo. Finalmente, el grupo de políticas y leyes pondría sus esfuerzos en integrar el tema de los anfibios y la declinación de sus poblaciones en el ámbito de la discusión de nuevas leyes (forestal y de biodiversidad), en las estrategias nacionales (de biodiversidad), en el establecimiento de áreas protegidas y en el cumplimiento de varios convenios internacionales (Ramsar, Diversidad Biológica, Desertificación, CITES, entre otros).

La red está abierta a la participación de cualquier interesado y no pretende la gestión directa de fondos, excepto aquellos que se necesiten para financiar gastos básicos de funcionamiento (la red recibió una donación de 200 dólares para cubrir pequeños gastos relacionados con la distribución de información). "Jambato" no generará proyectos propios sino que dará su respaldo oficial a personas e instituciones, para elevar las posibilidades de éxito en la consecución de financiamientos y soporte para el desarrollo de proyectos concretos. La ventaja de esta forma de trabajo es que la red se mantendrá como un campo neutro de intercambio, en el que nadie verá amenazados sus intereses y en el que los puestos de coordinación no representarán ventajas de poder que entraben de alguna manera la libre participación.

Aunque aún en su etapa inicial, la red se perfila como una interesante vía de comunicación y coordinación en un medio hasta ahora caracterizado por el desarrollo de iniciativas dispersas. Ante un problema de la magnitud que representa la desaparición masiva de especies, cualquier recurso es valioso, más aún cuando nuevos estudios seguramente incrementarán el número de elementos bajo peligro. La red Jambato no solo es válida como espacio en el terreno técnico-científico, sino que ofrece la oportunidad de convertirse en un canal para el tratamiento del tema a niveles más amplios (educativos y políticos) y como una pieza de complemento a los esfuerzos que redes similares pueden generar en países de la región y el resto del mundo. Si bien la red no es la solución a un problema es sin duda un paso adelante en la búsqueda de alternativas para conservar parte de la fauna de uno de los países más diversos del mundo.

*Para mayor información y contactos por favor diríjase a:* David Romo, Red Nacional sobre Disminución de Anfibios en Ecuador, Colegio de Ciencias Ambientales, Universidad San Francisco de Quito, Casilla postal 17-12841. Vía Interoceánica, Cumbayá, Ecuador.
**jambato@mail.usfq.edu.ec**

Miguel A. Vázquez, Proyecto Conservación de la Biodiversidad en el Ecuador, EcoCiencia, Isla San Cristóbal N44-495, Quito, Ecuador.
**Ecobio@hoy.net**

## The Jambato network: an initiative to cope with the problem of declining amphibian populations in Ecuador

**By Miguel A. Vázquez & David Romo**

Declining amphibian populations are a global problem. The most drastic extinctions have been reported in neotropical highlands. Ecuador may well be one of the most affected countries due to its high diversity. This situation has been recognised by Ecuadorian biologists since several biologists witnessed the rapid disappearance of species that once were the subject of students' fieldwork due to their abundance. In spite the international alert regarding the declining amphibian phenomenom in the early nineties, it was not until recently that the magnitude of the problem was evaluated. In fact, before scientists from the Biology Department of the Pontificia Universidad Católica del Ecuador determined that at least 23 species of frogs have become extinct or almost extinct in the last fifteen years, there were no important efforts to acknowledge the trend.

To cope with the problem,

specialists in various fields decided to create a network. The proposal was stated at the "III Declining Amphibians Workshop", held in Quito during November 22 - 25 1999. The main objectives of the "Jambato" network are to facilitate information exchange, and to motivate institutional cooperation. The network takes its name from the popular name of the bufonid *Atelopus ignescens*, a once common inhabitant of the high Andes which is now extinct.

The structure of the network is the simplest possible: there is a general co-ordinator, responsible for connecting people and interests, and four co-ordinators each in charge of the groups of interest declared at the meeting: research; conservation and management; education and training; and policies and laws. For each group of interest, a field of action was defined. Themes were established as reference but others could be discussed depending on the participants. For the research group, the priority for co-operation will be to search for new species (particularly in critical areas), evaluation and monitoring of populations to determine their conservation status, and investigation of the possible causes of declines. With regards to the conservation and management group, the basic working areas will try to find ways to maintain populations *in situ* and *ex situ*. In the field of education and training the main objective, at least initially, will be the development of a strategy to extend the issue to all levels of society and, additionally, to produce an electronic newsletter (it is under consideration). Finally, for the policy and law group, their work will deal with integrating the theme of amphibian declines at different levels such as: the new legal environment framework (the forest and biodiversity laws), national strategies (biodiversity) and creation of new protected areas as part of the execution of international agreements (such as RAMSAR, Biological Diversity & CITES, among others).

The Network is open to the participation of everybody interested in the subject and does not pretend to obtain or administrate economic resources, except those needed to cover basic expenses (the network already received a donation of 200 US dollars to cover its basic needs). Jambato does not intend to generate projects by itself. Instead it will give official support to people or institutions that are asking for funds. By maintaining a simple organisation, the network intends to facilitate communication among interested parties in such a way that no one holds power or funds. This scheme intends to maintain a "neutral field" where the interchange of information and co-operation is not an obligation and where responsibilities are voluntary and do not interfere (at least theoretically) in the free participation of all members.

Although "Jambato" is at its initial stage, it can be considered as an interesting experiment, especially in an environment characterised by the development of isolated and dispersed working initiatives. Taking into account a problem of such magnitude as are the massive declines of amphibians, any resource is valuable, even more so when the number of species under threat is likely to increase with further research. The Jambato network is not only a space for techno-scientific debate but for a wider treatment of the problem (e.g. political and educational) and it can function as a complementary structure to similar networks in neighbouring countries or in any part of the world. It is clear that the simple creation of a network is not the solution to the problem described above but it is undoubtedly an important step in searching for alternatives to conserve an aspect of one of the world's most biodiverse countries.

*For more information please contact:*
David Romo, Red Nacional sobre Disminución de Anfibios en Ecuador, Colegio de Ciencias Ambientales, Universidad San Francisco de Quito, Casilla postal 17-12841. Vía Interoceánica, Cumbayá, Ecuador. **jambato@mail.usfq.edu.ec**

Miguel A. Vázquez, Proyecto Conservación de la Biodiversidad en el Ecuador, EcoCiencia, Isla San Cristóbal N44-495, Quito, Ecuador. **Ecobio@hoy.net**

## Nitrates and Amphibians

**From Tim Halliday, DAPTF International Director**

Many amphibian species flourish in agricultural landscapes but may be threatened by nitrate and nitrite run-off resulting from the widespread use of nitrate fertilizers. An association between some amphibian population declines and the use of fertilizers was first noted by Berger (1989). Since then, a number of experimental studies in the UK and Canada have shown that nitrates and nitrites adversely affect the growth and survival of amphibian larvae (eg: Baker & Waights 1993, 1994; Hecnar 1995; Oldham *et al.* 1997).

Two recent papers (Marco & Blaustein 1999; Marco *et al.* 1999) have investigated the sensitivity of pond-breeding amphibians to nitrates and nitrites in the Pacific Northwest of the USA. Under laboratory conditions, levels of nitrate that are categorized by the US Environmental Protection Agency as being safe for humans severely affect tadpoles, causing reduced growth, increased incidence of deformities, paralysis and death. Tadpoles of the Oregon spotted frog (*Rana pretiosa*) are particularly sensitive. Nitrates may also affect amphibian populations in another way; they encourage the growth of algae that harbour trematode parasites of amphibians that cause deformities.

Baker, J. & Waights, V. (1993) The effect of sodium nitrate on the growth and survival of toad tadpoles (*Bufo bufo*) in the laboratory. *Herpetol. J.* **3:** 147-148.

Baker, J. & Waights, V. (1994) The effects of nitrate on tadpoles of the tree frog (*Litoria caerulea*). *Herpetol. J.* **4:** 106-108.

Berger, L. (1989) Disappearance of amphibian larvae in the agricultural landscape. *Ecol. Intl. Bull.* **17:** 65-73.

Hecnar, S.J. (1995) Acute and chronic toxicity of ammonium nitrate fertilizer to amphibians from southern Ontario. *Environ. Toxicol. Chem.* **14:** 2131-2137.

Marco, A. & Blaustein, A.R. (1999) The effects of nitrite on behavior and metamorphosis in Cascades frogs (*Rana cascadae*). *Envtl. Toxicol. & Chem.* **18:** 946-949.

Marco, A., Quilchano, C. & Blaustein, A.R. (1999) Sensitivity to nitrate and nitrite in pond-breeding amphibians from the Pacific Northwest, USA. *Envtl. Toxicol. & Chem.* **18:** 2836-2839.

Oldham, R.S., Latham, D.M., Hilton Brown, D., Towns, M., Cooke, A.S. & Burn, A. (1997) The effect of ammonium nitrate fertiliser on frog (*Rana temporaria*) survival. *Agric. Ecosyst. Env.* **61:** 69-74.

## Froglog Shorts

**DONATIONS** We gratefully acknowledge receipt of the following donations received during February 2000. **Organizations:** Portal Publications, Ltd., San Antonio Zoological Society, San Francisco Zoological Gardens, Zoological Society of Philadelphia. **Individuals:** Kraig Adler, Nicolas Benedict, Robert D. Bernstein, James Bettaso, Daniel Boiano, Charles Carpenter, Malcolm Donofrio, John Ferner, James Fowler, D. Earl Green, P. A. Greenberg, John Hall, Carol Hall, Fui Lian & Robert Inger, Douglas Johnson, Nancy Karraker, Greg

Linder, Thomas Lovejoy, Lisa Ollivier, Marilyn Ortt, Debra Patla, Don Perschau, Dwight Platt, Charles V. Quinn, A. Stanley Rand, Dave Rich, Christina Richards, Norman Scott, David Sever, Hobart Smith, Richard Spieler, Glenn Stewart, Mark & Barbara Stromberg, Arthur Webster, Ruth Willey, Howard Youth. Donations from Paul Ericksen, John Hudson, Cherie Johnson, David Nelson, Jeffrey Oelke, and John Ricker were made in memory of Carol Roth.

***A note from the Chair:*** The DAPTF wishes to note special contributions received. *Froglog* readers who pay special attention to detail will have noticed that Frog's Leap Winery is no longer underwriting costs associated with the newsletter. Frog's Leap was of critical importance at the very beginning of the DAPTF to make certain that funds were available to start and continue *Froglog* on a regular basis. Our hats are off to the owners of Frog's Leap for their past support.

We are pleased to announce that the Detroit Zoological Institute has agreed to underwrite the costs associated with the production and distribution of *Froglog,* beginning with number 37. The Detroit Zoological institute is at the forefront of amphibian conservation within the zoo community. They have launched a most ambitious new exhibit, research and conservation programme solely focussed on amphibians. Andrew Snider is writing an article for a forthcoming *Froglog* about the Detroit Zoological Institute's National Amphibian Conservation Centre.

Over the past two years, awards from the Wallis Foundation have allowed the DAPTF to support particularly critical activities. The Rapid Response Fund was initiated with funds provided by the Wallis foundation. In addition to providing a major boost to the Seed Grant programme, funds will also be used to support publication of the book compendium of the DAPTF Working Groups that John Wilkinson is organizing.

I would also like to pay tribute to our individual donors, most of whom are you, the readers of *Froglog*. Your collective support provides a significant amount of unrestricted funds, which are the most difficult kinds of funds to raise. The importance of your consistent financial support is not lost on such benefactors as the Detroit Zoological Institute, the Geraldine R. Dodge Foundation and the Wallis Foundation.

*Ron Heyer.*

**The Fourth Asiatic Herpetological Conference** and the Fifth Meeting of the Chinese Herpetological Society wil be hosted by the Chengdu Institute of Biology, Chinese Academy of Sciences in Chengdu, China from 16-20 July, 2000. *For further details, contact:* Prof. Wang Yuezhao, Director of Herpetology Lab.,Chengdu Institute of Biology, Chinese Academy of Sciences, Chengdu, sichuan Province 610041, CHINA.
**arcib@mail.cib.ac.cn**

**The latest information about the 4th World Congress of Herpetology,** to be held in Sri Lanka in August 2001, can now be found at their website: **http://www.4wch.com**

**Taxonomy & Status of Mantellas Revised** A new paper (Vences *et al.* 1999) reviews the taxonomy and conservation status of the mantellas, a group of Madagascan frogs that feature prominently in the pet trade. Mantellas are noted for their convergence with dendrobatids, and for their vivid and very variable coloration. A total of 17 species are recognised, divided into 6 groups, some of which may be regarded as superspecies or species complexes. The status of some 'phantom' names used in the pet trade is discussed. Vences *et al.* assess the conservation status of the 17 species on the basis of (i) their distribution, (ii) the amount of available remaining habitat, (iii) intensity of trade, and (iv) attractiveness within the pet trade. Five species are considered to be in danger of over-collection; two are vulnerable; four are rare. For 5 species, data do not permit a clear assessment; only one of the 17 species is considered not to be threatened.

Vences, M., Glaw, F. & Böhme, W. (1999) A review of the genus *Mantella* (Anura, Ranidae, Mantellinae): taxonomy, distribution and conservation of Malagasy poison frogs. *Alytes* **17:** 3-72.
*Tim Halliday.*

***ORYX*** *Oryx* is a well-established scientific journal that publishes papers on a wide range of conservation issues. To date, they have published very few papers on amphibians, a situation they would like to rectify. *Oryx* has about 3000 subscribers, most of whom are conservation practitioners, rather than academics. If you require more information about this journal, contact Tim Halliday or John Wilkinson at the DAPTF Office.
*Tim Halliday*

**A conference "Safeguard the Amphibians",** organized by the Museo Cantonale di Storia Naturale and Progetto Rospi Lombardia (the Lombardy Toad Project) will be held in Lugano, Switzerland, 23-24 June, 2000.
*For full details, contact:* Vincenzo Ferri, Progetto Rospi Lombardia, Milan **vincentf@tiscalinet.it** *or* Alessandro Fossati, Marina Balmelli or Lucia Pollini, Museo Cantonale di Storia Naturale, Lugano **alessandro.fossati@ti.ch**

**Montserrat Species Caught for Captive Breeding** A rescue mission to Montserrat by Andrew Owen of the Durrell Wildlife Conservation Trust in July 1999 succeeded in capturing mountain chickens frogs *Leptodactylus fallax*. The animals will be used for a trial captive breeding programme. This species has not been bred in captivity before. *Source:* Durrell Wildlife Conservation Trust press release.

**The new Chair of the Monitoring Protocols Working Group** is Richard Griffiths. He is currently working on the population and behavioural ecology of threatened species with particular regard to reptiles and amphibians; and is involved in the development of survey and monitoring programmes in Europe, North and South America, and Madagascar. *Contact:* Richard A. Griffiths, DICE, University of Kent, Canterbury, Kent CT2 7NX, UK.
**R.A.Griffiths@ukc.ac.uk**




FROGLOG is the bi-monthy newsletter of the Declining Amphibian Populations Task Force.

*Edited by:*
John W. Wilkinson, 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 Zoological Institute, P.O. Box 39, Royal Oak, MI 48068-0039, USA***