Polypedates eques (Sri Lanka) by Ruchira Somaweera

ISSN 1026-0269

FROGLOG

Newsletter of the Declining Amphibian Populations Task Force

August 2003, Number 58.

Status of Amphibians at the Zoige Wetlands, Sichuan Province, China

By Gary M. Fellers, Wang Yuezhao, and Liu Shaoyin

DAPTF Seed Grant Holders 2002

We conducted field surveys for amphibians in 1997 and from 2000-2002 at the Xiaman National Conservation Region in the Zoige wetlands (90,000 km^2). The wetlands are located at the headwaters of the Yellow River on the Qinghai-Tibetan plateau (32^o 20' to 34^o 05' latitude, 102^o 10' to 103^o 55' longitude) in the northern Sichuan province of China. The plateau has an average elevation of 3,450 m (11,320'), and the wetland encompasses two rivers and 14 lakes. Amphibians include one bufonid (*Bufo minshanica*) and two ranids (*Rana chensinensis* and *Narorana pleskei*).

Our population surveys showed a downward trend for all three species over the five-year span of our study. This decrease was most notable for *Narorana*, but was also apparent for both *Bufo* and *Rana*. The trend was not statistically significant due to the combination of the small number of sites and the variability in the count data.

In 2000, we initiated more extensive surveys and documented a significant decline in both the number of sites occupied and the maximum number of adult or subadult frogs recorded. Reproductive success (number of egg masses and/or number of tadpoles) varied by species. *Bufo* had modest numbers of egg masses, but we only recorded tadpoles in 2002. *Narorana* apparently did not reproduce at any of our sites during 2000 - 2002. We found a moderate number of *Rana* egg masses, but the number of tadpoles has been near zero since 2001.

The key question is why is this decline occurring? Frogs have occupied the Zoige wetlands for thousands of years, but the declines that we are currently seeing are not sustainable. In the last 10 years, there has been a general drying of the wetlands throughout the plateau with some wetland areas becoming sand dunes. The cause for this change is unknown. During the same period, the abundance and distribution of the three amphibian species has declined, even in areas that appear to have suitable habitat.

Many of the local naturalists have lived adjacent to the wetlands throughout their lives and are familiar with amphibians. These people report that 1) the Zoige wetlands were formerly far more extensive, 2) all three species of anurans were more widely distributed 10-20 years ago, and 3) amphibian populations have declined over the last 10 years (Zhang Ming and Liu Shaoyin, *pers. obs.*).

Yak and sheep grazing have taken place in this region for thousands of years. There have, however, been recent changes in the number of yaks and sheep, season of use, and areas grazed. There has also been an increased use of chemical fertilizers and pesticides. These changes may have resulted in changes to the wetland and meadow vegetation, a lowering of the water table or the conversion of wetland habitat to sand.

We must continue the current monitoring program for amphibian populations at Xiaman National Conservation Region so we can understand and document population trends.

Recommendations for future research:
- Examine land use patterns to determine if the drying of the Zoige wetlands might be caused by changes in grazing.
- Measure pesticides in frogs, tadpoles, water, and sediment.
- Examine existing weather data for long-term changes that might have caused a drying of the wetlands.
- Determine the ecological requirements of the three amphibians occupying the Zoige wetlands, including their tolerances to temperature extremes, desiccation, and exposure to locally used pesticides and fertilizers.
- Continue to look for diseases including chytrid fungus, which has not been reported in China.

Acknowledgements

Field work was conducted by Zhang Ming and Liu Shaoyin. Funding was provided by the Chengdu Institute of Biology, Academia Sinica; Chicago Zoological Society; the Declining Amphibian Populations Task Force; and the US Geological Survey.

Contact:

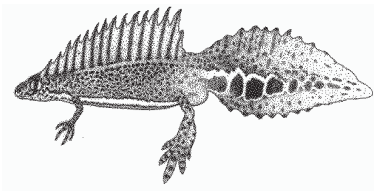
Gary M. Fellers, Western Ecological Research Center, USGS, Point Reyes National Seashore, Point Reyes, CA 94956 USA.
Phone: 415-464-5185
gary_fellers@usgs.gov

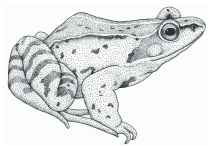
Wang Yuezhao, Chengdu Institute of Biology, Academia Sinica, P.O. Box 416, Chengdu, Sichuan, The People's Republic of China .
arcib@cib.ac.cn

Liu Shaoyin, Sichuan Institute of Forest Protection, Sichuan Academy of Forest Sciences, Chengdu, Sichuan, The People's Republic of China.

DAPTF SEED GRANTS 2004

We will be announcing a new round of Seed Grants for 2004 in *Froglog* 59 (October). We will be seeking proposals in the ARMI and Unrestricted categories, as last year (see *Froglog* 53). The closing date will be in early December. Anyone requiring further information, or advice about our Seed Grant programme should contact Tim Halliday:
t.r.halliday@open.ac.uk





Green Frogs are Greatly Endangered in Serbia and Montenegro

By Katarina Ljubisavljevic, Georg Dzukic & Milos Kalezic

Populations of green frogs have suffered progressive decline in Serbia and Montenegro in recent decades. Data about uncontrolled harvesting and anthropogenic influences on the destruction of their habitats have, however, not been compiled until now. In the monograph "Protection and Conservation of Green Frogs in Serbia and Montenegro" by Georg Dzukic, Milos Kalezic & Katarina Ljubisavljevic (published by the Federal Ministry of Labour, Health and Social Care, Department of Environment, 2003, Belgrade), we gave an integrative survey of the current status and factors responsible for the decline of this amphibian group in Serbia and Montenegro. This article is based on the main findings exposed in the above monograph, as well as on additional data on water pollution.

The green frogs of Serbia and Montenegro belong to the western Palaearctic water frog complex and are represented by 6 taxa at species, klepton and hybrid levels: (1) *Rana balcanica* Schneider, Sinsch & Sofianidou, 1993 (=? *R.kurtmuelleri* Gayda, 1940); (2) *Rana* kl.*esculenta* Linnaeus, 1758; (3) *Rana lessonae* Camerano, 1882; (4) *Rana ridibunda* Pallas, 1771; (5) *Rana shqiperica* Hotz, Uzzell, Günther, Tunner & Heppich, 1987; (6) hybrid *R.shqiperica* / *R.ridibunda* Hotz & Uzzell 1982.

Green frog population density is greatest in the lowlands (the Panonnian Plain, the Morava River Basin, Lake Skadar); consequently about one third (35.17%) of the territory of Serbia and Montenegro is suitable for the economically-profitable harvesting of green frogs. This area has, however, been a zone of most intensive anthropogenic pressures in the last century. These include: (1) drainage of about 1.2 million hectares of wetland in Vojvodina, the Morava River Basin and eastern Serbia (the Negotin Valley); (2) regulation of rivers by systems of canals and embankments; (3) transformation of pools and marshes into fish ponds; (4) extensive and intensive agriculture resulting in habitat fragmentation and biocide release; (5) ongoing contamination of rivers by industrial pollutants and frequent accident-related events; and (6) extensive harvesting of green frogs for the purpose of trade. All these factors act in concert to cause the dramatic decline of green frog populations.

In addition to drainage, a drastic decline of subterranean water levels was recorded in Vojvodina (from 1.5 – 3 m in 1953, up to 13 – 14 m at present). This reduces the natural water capacity in the region. The majority of waste disposal sites and chemical plants are situated on river banks in the alluvial plains, causing constant contamination of waters for decades, and acting as "time bombs" (i.e. more than 135 polluters of the Sava River were recorded within the Belgrade territory alone). Furthermore, the irrigation canal system in Vojvodina, approximately 20,000 km long, has failed to fulfill its basic function and turned into a drastically polluted, virtually stagnant waterway. Almost all of the rivers in Serbia and Montenegro have experienced at least one accident-related event before the major disaster, caused by the NATO bombing in 1999. For example, life in the Pek River (a tributary of the Danube in eastern Serbia) was completely wiped out after an accident in 1974, when 7 million cubic meters of solid and 4.5 million litres of cyanide/phenol/phosphate-rich liquid waste had been released from the Majdanpek copper mine. Revitalization lasted for twenty years, but once again a similar accident occurred in 1996. In 1982, about 70,000 tons of waste containing lead, zinc, copper and arsenic were released from a mine near Srebrenica into the Drina River (a tributary of the Sava in western Serbia), causing total eradication of the fish population. The Lim River (a tributary of the Drina) almost died out in 1971 and 1985, after major spills of toxic materials from the Berane cellulose plant in Montenegro, while the Timok River (a tributary of the Danube in eastern Serbia) was pronounced dead in 1980, after heavy contamination by waste materials stored in the flotation pond of the Bor copper mine. Decades of industrial activities with inadequate or deficient waste treatment have resulted in high levels of chronic pollution of the Tisza River, aside from frequent accident-related events (i.e. in summer 1990, 1992, and 1993). A major accident occurred in January 2000, when Aurul S.A., a gold and silver producing plant in Baia Mare (Romania), released an estimated 50 – 100 tons of cyanide and heavy metals into the Lapus/Somes/Tisza/Danube river catchment systems. The American based research group, the Institute for Energy and Environmental Research (IEER), has found that the NATO bombing of Yugoslavia in spring 1999 caused long-term environmental damage (Robson, 2002). The IEER carried out case studies of two industrial facilities targeted by NATO. From the Pancevo industrial complex (petrochemical plant, fertilizer plant and oil refinery), which stands at the confluence of the Tamis River and the Danube, more than 100 tons of mercury, 2,100 metric tons of 1.2-dichlorethane, 1,500 tons of vinyl chloride (3,000 times higher than permitted levels), 15,000 tons of ammonia, 800 tons of hydrochloric acid, 250 tons of liquid chlorine, vast quantities of dioxin (a component of Agent Orange and other defoliants), and significant quantities of sulphur dioxide and nitrates were released into the atmosphere, soil and waterways. From the "Zastava" car factory in Kragujevac, unknown quantities of pyralene oil leaked into the Lepenica River (a tributary of the Velika Morava) via the sewage system.

Recently, there have been other accidents that further aggravated conditions in the two main river systems of Serbia. In the summer of 2002, high levels of atrazine were recorded in the Sava River basin in the territory of the Bosnian Federation (near Derventa and Prnjavor). In December 2002, increased levels (0.15 μg/L) of this chemical were once again recorded in the Sava River in the territory of Serbia (presumably coming from Croatia). It needs to be emphasized that application of atrazine herbicide, a contributor to amphibian declines (e.g. Hayes et al., 2002) has been evidenced in Serbia in the last two decades. Because of entrenched habits, low cost and efficiency, atrazine is the most commonly used herbicide (80% of the total herbicide consumption) to control weeds in the maize fields along the Sava and Morava rivers, as well as in the Pannonian Plain. In Serbia, approximately 1.4 million hectares are under maize, meaning that weed control requires substantial quantities of atrazine. In June 2002, a spill of an unknown quantity of ash and sulphur-rich waste tailings were released into the Danube from the thermo-electric power plant "Kostolac" in Serbia. In 2003, the trend of accidental contamination of Serbian rivers is still present. In January and February, a major spill of phenol and heavy metals (lead in particular) was released into the Sitnica/Ibar/Zapadna Morava river

system near the steam power plant "Obilic" in Kosovo. The levels of phenol in the Sitnica River were 300 times higher than permitted. Furthermore, phenol pollution of the Ibar River has been present over the past decades to a lesser or greater extent. For instance, levels 12 times higher than permitted were recorded on several occasions during 1985. In addition to these, a number of various local accidents have recently occurred in Serbia (i.e. an uncontrolled 20-day leakage of crude oil into the Sava River in the port of Belgrade). Constant contamination of Skadar Lake by wastewater from the aluminium plant in Podgorica has been evident in Montenegro for decades. Additionally, in September 2001, 33 tons of oil and gasoline flowed out of a cistern into the Moraca River, the largest tributary to Lake Skadar.

Taking into consideration the changes that have taken place within the habitats, the potential area for economically profitable harvesting of green frogs is down to approximately 15% (15.326 km^2) of the state territory. It is evident that Serbia and Montenegro no longer has the natural resources for exploitation of green frogs, at least not to their previous extent.

Live frogs have been exported from the Former Yugoslavia to 17 countries since 1928. From 5 kg in 1935, the exported quantities had reached 420 tons in 1976. A total of 6,312.2 tons of live frogs were exported from the Former Yugoslavia during the 41-year period of export recording. Based on the average weight of 60 g, this equates to approximately 105.2 million specimens. The biggest importers were France and Italy (51.2% and 42.3% of the total export, respectively). According to our findings, there is a high probability that live frogs were exported to France in even more significant quantities from 1953 to 1965. In that case, the total export of live frogs could be as high as 8,787.5 tons (approximately 146.5 million specimens).

Frog meat (legs) was exported to 8 countries from 1953 onwards, but not on a regular basis. The quantities ranged from 100 kg in 1953 up to 24 tons in 1958. Switzerland was the biggest importer (72.5% of the total export). Overall, 135.9 tons of frog meat was exported from Former Yugoslavia during the 20-year period of export recording. For this purpose, approximately 6.8 million frogs were harvested (*). On the whole, approximately 6,720 tons or 112 million green frogs were removed from nature for the purposes of commercial harvesting in the Former Yugoslavia from 1928 to 1999 (*frog legs are approximately 1/3 of the body weight).

The harvesting of green frogs in Serbia was not legally defined until 1991. Subsequently, the regulations have been modified and improved, although certain irregularities and ambiguities still remain. For example, there is an ongoing confusion as to the institutions in charge. Up to 1991, green frogs were sporadically treated in fishery laws as useful or harmful animals, while in regulations on food quality (still in effect) the sale of *R. esculenta* weighing 30 – 100 g is approved. In Montenegro, green frogs are not protected by law, and harvesting within the Lake Skadar National Park is still present. Analysis of the body length and mass of green frogs from a number of localities in Serbia and Montenegro revealed substantial differences between *R. ridibunda* and smaller green frogs (*R. lessonae*, *R. shqiperica*), with intermediate position *R.* kl. *esculenta* and *R. ridibunda* x *R. shqiperica* hybrids. Also, there is a trend towards greater body length in *R ridibunda* from north to south, showing significantly larger specimens in Montenegro than in Pannonia. Our data indicate that the green frogs from areas of constant intensive harvesting (Vojvodina), as opposed to areas without harvesting (Kosovo), show significantly smaller weight and body proportions for both sexes (*Rana* syn. kl. *esculenta*). Disturbance in interspecific relationships is evident through drastic decrease in body length of *Rana ridibunda* due to selectively directed harvesting of this species. Successive sampling over several years showed that excessive harvesting of green frogs in the Lake Skadar National Park resulted in a decline of the average body length. Populations were, however, in a somewhat better condition regarding the weight parameter. Our analyses have pointed towards a number of weaknesses in the existing legislation. Green frogs with an average body length of 9 cm (being the lower limit for harvesting in current regulations), do not exist in Serbia and Montenegro. Also, among thousands of analyzed specimens we have not found the maximum length of 12 cm (being the upper limit for harvesting). It is evident that discriminative parameters for recognizing *Rana lessonae* and *R. shqiperica* do not exist in current regulations. At the same time, commercial harvesting of green frogs weighing between 50 – 120 g is permitted. However, data indicate that the lower weight limit for harvesting sometimes dropped under 30 g. Also, confusion regarding the permitted parameters may occur since weight and length measures are not in direct correlation.

As additional disturbing factors, we stress the genetic "contamination" in conditions of hybridogenesis that occurs during transportation of frogs from one part of the country to another, as well as faunistic "contamination" due to introduction of allochthonous species (i.e. import of 11.7 tons of live frogs from USSR in 1980, and 3 tons from Bosnia and Herzegovina in 1998).

There are many reasons to doubt the success of possible future projects concerning the raising and rational exploitation of natural and artificial populations of green frogs in Serbia and Montenegro.

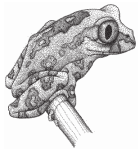
Acknowledgements
Thanks to Gordana Sokorac for linguistic help. We thank the Federal Ministry of Labour, Health and Social Care, Department of Environment and Serbian Ministry of Science, Technologies and Development (grant No. 1623) for funding our investigations and preparation of this report.

References

Hayes, T.B., Collins, A., Lee, M., Mendoza, M., Noriega, N., Stuart, A.A. & Vonk, A. (2002). Hermaphroditic, demasculinized frogs after exposure to the herbicide atrazine at low ecologically relevant doses. *PNAS* **99(8):** 5476-5480.

Robson, T. (2002) Long-term environmental damage due to NATO bombing in Yugoslavia, web article, **http://www.wsws.org**

Contact: Katarina Ljubisavljevic, Institute for Biological Research "Sinisa Stankovic" 29. Novembra 142, 11060 Belgrade, Serbia & Montenegro.
ljkaca@ibiss.bg.ac.yu



Amphibian Monitoring Standards – a Workshop for African Students

By Stefan Lötters

From 1 to 5 April 2003, a workshop with the above title was held in Kenya to contribute to the improvement of knowledge and skills of students from African countries who are interested in amphibian monitoring. The workshop was organised by a team of National Museums of Kenya, Nairobi (NMK Herpetology Department, D. Rotich), Mainz University, Germany (Global Amphibian Diversity Analysis Group, GADAG, and BIOTA East, M. Veith, J. Kosuch, S. Lötters), Laboratoire d'Ecologie des Sols Tropicaux, Bondy Cedex, France (Institut de Recherche pour le Développement, J. Measey), and the University of Western Cape, Bellville, South Africa (Biodiversity and Conservation Biology Department, A. Channing). It was attended by 21 students from Kenya, Uganda, Tanzania and South Africa. Financial and logistic support was by BIOTA East (under the Biodiversity and Global Change Programme of the German Federal Ministry of Education and Research), NMK, Kenya Wildlife Service (KWS) and University of Western Cape.

The workshop covered theory and practicals with demonstration of data evaluation and processing for amphibian communities and populations. Besides practical work at the NMK labs, field training at the BIOTA Kakamega field station was included.

Major objectives included:

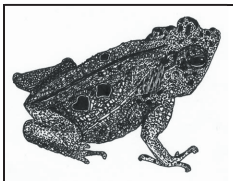
- species lists and species identifications (adult and tadpole morphology, bioacoustics, DNA taxonomy),
- monitoring at the community level,
- monitoring at the population level.

In addition, informative talks were given including topics such as the role of chytrid fungus in Africa, the Kihansi monitoring project in Tanzania and the East African anuran and caecilian faunas.

This was the first workshop of this kind ever held for African students. Besides the general importance of teaching standard methods for amphibians, a group of animals suggested to be currently undergoing severe declines at the global scale, there is also a special need for training amphibian monitoring standards among African students.

All participants agreed that this unique event was entirely successful and should encourage individual output including the stimulation of fieldwork and the development of monitoring prospects in the future. The organisers are certain to repeat the workshop.

Contact: Stefan Lötters, Global Amphibian Diversity Analysis Group (GADAG), Mainz University, Zoology Department, Saarstrasse 21, 55099 Mainz, Germany
stefan@oekologie.biologie.uni-mainz.de



Amphibians in Guatemalan Pine-Oak Forests

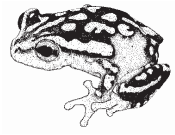
By Daniel Ariano Sánchez <arianoherp@intelnett.com> and Alejandro Del Valle Moreno <florenci@intelnett.com>

A Report on Work Carried Out with Support from a DAPTF Seed Grant

Florencia's Ecological Park (FEP) is one of the last refuges of pine-oak forest located between Antigua Guatemala and Guatemala City. FEP is at 1920m above sea level and is crossed by two water courses, one of which (San Miguel River) is contaminated by agrochemical waste from up-river. The other begins in FEP (Manzano Brook) and is not contaminated. The amphibians present in the park are the tree frogs *Plectrohyla guatemalensis*, and *Duellmanohyla schmidtorum*, the salamanders *Bolitoglossa morio, B. rostrata,* and *B. franklini;* and the toad *Bufo marinus*. *D. schmidtorum* has been observed hidden between the leaves of bromeliads, while *Plectrohyla guatemalensis* hides between the petioles of *Musa sapientum* (maizeno). *B. Morio* has been found mainly under foliage or rotten trunks, while *B. rostrata* prefers to hide in the petiole of the maizeno. Vertical migration probably occurs in *B. rostrata*, which is not found in maizeno or foliage during the dry season. Instead, it shelters in the bromeliads at the top of the oak trees.

There has been noted a decrease in the population of salamanders in the contaminated water course, probably due to the death of the maizeno on the riverbank caused by the incoming agrochemicals. Presently, we are working towards the recuperation of the rivers, reseeding the maizeno, and coordinating the management of agrochemical waste with the municipality of Magdalena Milpas Altas, where the San Miguel River rises. The Manzano Brook has not shown a decrease in amphibian populations. We appreciate the support of DAPTF in this study.

DAPTF – Kenya Working Group: Review of Activities June 2002 – June 2003



From Damaris Rotich

The DAPTF - Kenya Working Group celebrated its 1-year anniversary in May. The team, which has 58 members, met on the 29th May to review their activities. The members from Nairobi had been meeting monthly. At the end of May the members elected a 10 man Executive Committee including the Chairperson and Secretary Damaris Rotich and Patrick Malonza respectively. The committee is to steer the group's activities on behalf of the group, which has now become rather large.

Summary of activities: The group sought and received affiliation as a sub committee of Nature*Kenya,* a leading Kenyan NGO whose mission is the conservation of biodiversity. This organization encourages and works with species working groups in all biodiversity areas. They provide advice and help in the marketing of proposals where donors have been identified. In support of its affiliated groups, Nature*Kenya* plants a seed of Ksh 20,000 (300 $) for their running expenses for the 1st year. *NatureKenya* has projects and programmes that are active in on-site conservation and environmental education around the country, working with community groups near areas of key biodiversity importance.

Nature*Kenya* produces a monthly newsletter that keeps members informed, giving conservation news and updates and highlighting important activities such as those of the DAPTF - Kenya working group. Nature*Kenya* has close associations with both local and international organizations such as Bird Life International and Earth Watch. More information on Nature Kenya can be obtained by accessing their website **www.naturekenya.org** The group publicized itself in the Nature*Kenya* newsletter (naturenet) of September 2002, and raised awareness on the plight of amphibians, which consequently increased our membership.

The group has participated in 2 major forums; World Wetlands Day on 2nd February 2003 and the Annual General Meeting of Nature*Kenya*. The team had poster presentations and talks on both occasions. In August 2003 the working group will participate in a Nature*Kenya* open day where various activities of biodiversity groups will be displayed. These will include both poster presentations and lectures.

Training: Three training sessions have been conducted for members, scientists and naturalists. One of them was a comprehensive and intense 3-day workshop on monitoring standards. A team of BIOTA organized this workshop. (Biodiversity Transect Analysis for Africa through the Global Amphibian Diversity Analysis Group (GADAG) of Germany and the National Museums of Kenya (NMK) (*see this issue of Froglog)*. We hope to continue with training as much as resources allow. The Nairobi working group members conducted two frog walks to learn identification of species using their calls.

Site monitoring: Six sites have been identified for potential monitoring. 3 within the Nairobi area, 2 North West of Nairobi 100 Km away, plus there is ongoing monitoring in Kakamega forest 500 Km from Nairobi. The monitoring in the forest is sponsored by BIOTA. Unfortunately this project might be brought to a halt in 2004 unless BIOTA review support or alternative funding is obtained.

Planned Activities: Members from the Herpetology Department of NMK have planned to visit site support groups to train them in amphibian identification and monitoring. The members are sponsoring themselves on the trips. Already one such training session was conducted on 13th/14th June 2003 for the North Kinangop site support group about 100km North West of Nairobi. An educational poster has been prepared on the major groups of Kenyan amphibians and funds for its printing are being sourced. Members from these sites will be trained and I am optimistic that we shall be able to gather good data, useful in understanding the status of the amphibians of Kenya.

Contact: Mrs. Damaris Rotich, National Museums of Kenya, PO Box 40658, Nairobi, Kenya.
cbd@museums.or.ke

Froglog Shorts

DONATIONS We gratefully acknowledge receipt of these donations, received prior to July 31, 2003. **Individuals:** Moira Hope, Peter Hovingh, Glen Ingram. **Institutions:** Peace Frogs.

Advanced Training in Amphibian Population Decline Research. 4-13 January 2004 in Costa Rica. Sponsored by the Research and Analysis Network for Neotropical Amphibians (RANA) and the IRCEB team studying Host-Pathogen Biology and the Global Decline of Amphibians, and funded by the US National Science Foundation. The course is open to post-doctoral and senior graduate level biologists from throughout the Americas. Application requirements: (1) a filled application form, (2) curriculum vitae, (3) a letter of interests and future research plans, including reasons for participating in the course, and (4) two reference letters. Application deadline: 8 October 2003. All application documents should be sent to Roberto Ibáñez preferably by e-mail at **ibanezr@tivoli.si.edu**, or to Smithsonian Tropical Research Institute, Atención: Roberto Ibáñez / Tupper Bldg., Apartado 2072, Balboa / Ancón, Panamá, Rep. de Panamá. Successful applicants will be notified by the end of October. Course cost, room, board, and travel expenses will covered for successful applicants. Instruction will be simultaneously translated in English and Spanish. Brazilian biologists able to understand either language are also encouraged to apply. For more information and an application form see
http://rana.biologia.ucr.ac.cr

Entrenamiento Avanzado en Investigación Sobre Declinación de Poblaciones de Anfibios. 4-13 enero 2004 en Costa Rica. Patrocinado por la Red de Análisis sobre Anfibios Neotropicales Amenazados (RANA) y el equipo IRCEB que estudia la Biología Hospedero-Patógeno y la Declinación Global de Anfibios, y financiado por la US National Science Foundation. El curso está abierto a biólogos a nivel de post-doctorado y estudiantes avanzados de postgrado de todas partes de las Américas. Requisitos para aplicar: (1) formulario de aplicación completado, (2) curriculum vitae, (3) una carta de intereses y planes de investigación futuros, incluyendo las razones para participar en el curso, y (4) dos cartas de referencia. Fecha tope para la aplicación: 8 octubre 2003. Todos los documentos de aplicación deben ser enviarse a Roberto Ibáñez, preferiblemente por correo electrónico a la dirección: **ibanezr@tivoli.si.edu**, o al Smithsonian Tropical Research Institute, Atención: Roberto Ibáñez / Tupper Bldg., Apartado 2072, Balboa / Ancón, Panamá, Rep. de Panamá. Los solicitantes seleccionados serán notificados a fines de octubre. Los costos del curso, habitación, alimentación y gastos de viaje serán cubiertos para los solicitantes seleccionados. La instrucción se traducirá simultáneamente en inglés y español. Se exhorta a aplicar, también, a biólogos brasileños capaces de entender cualquiera de estos dos idiomas. Para más información y el formulario de aplicación ver
http://rana.biologia.ucr .ac.cr

Treinamento Avançado em Pesquisa Sobre Declínio de Populações de Anfíbios. De 4-13 de Janeiro de 2004 na Costa Rica. Financiado pelo "US National Science Foundation" e patrocinado por "Research and Analysis Network for Neotropical Amphibian" (RANA) e pela equipe do IRCEB que estuda a Biologia Hospedeiro-Patógeno e o Declínio Global de Anfíbios. O curso está aberto para biólogos no nível de pós-doutorado e estudantes graduados seniores de todas as Américas. Requisitos necessários: (1) formulário de inscrição preenchido, (2) *curriculum vitae*, (3) uma carta de interesse e projeto de pesquisa futuro, incluindo as razões pelas quais quer participar do curso, e (4) duas cartas de referência. Data limite para a inscrição: 8 de outubro de 2003. Todos os documentos de inscrição devem ser enviados para Roberto Ibáñez, preferencialmente por correio eletrônico para o e-mail: **ibanezr@tivoli.si.edu** , ou por carta para: Smithsonian Tropical Research Institute - Roberto Ibáñez / Tupper Bldg., Apartado 2072, Balboa / Ancón, Panamá, Rep. de Panamá. Os solicitantes selecionados serão notificados no final de outubro. Os custos do curso, alojamento, alimentação e gastos de viajem serão pagos para os inscritos selecionados. O curso será ministrado simultaneamente em inglês e espanhol. São convidados a participar todos os biólogos brasileiros capazes de entender qualquer um destes idiomas. Para maiores informações e obter o formulário de inscrição em:
http://rana.biologia.ucr.ac.cr

Disease precautions: Cleaning fluids for amphibian pond equipment The DAPTF leaflet for amphibian workers on field hygiene suggests the use of alcohol (ethanol) as a sterilising agent, in addition to bleaches. However, it has been pointed out that ethanol can be very expensive due to local tax duties and in some countries its availability may be restricted due to lack of supply or laws prohibiting sale. As a substitute, methanol or methylated spirits is suitable. This is often cheaper and more easily obtained. It should be noted that alcohols are flammable liquids and strict safety precautions should be taken when transporting them in vehicles and during their use and disposal. Suitable containers that are clearly labelled should be used and properly stowed during transit according to local laws and rules for transport and safe disposal of flammable liquids.
Tom Langton, Froglife (**http://www.froglife.org/**).

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.
Franco Andreone & Jasmin Randrianirina (2002)
It's not carnival for the harlequin mantella! Urgent actions needed to conserve *Mantella cowani*, an endangered frog from the high plateau of Madagascar.
f.andreone@libero.it
James Arrigoni (2003)
Proceedings of the Maya Forest amphibian monitoring project workshop at BFREE, 7-9 May 2003.
jarrigoni@hotmail.com
Gary Fellers et al. (2002)
Status of amphibians at the Xiaman National Conservation Region, Zoige Wetlands, Sichuan Province, China.
gary_fellers@usgs.gov
Mark Pestov et al. (2002)
Report on the project of reintroduction of the European tree frog (*Hyla arborea arborea*) in Russia.
vipera@dront.ru

Estatística sem Matemática - um livro para biólogos and conservationistas disponível no site **www.editoraplanta.com.br** Este é um livro de estatística diferente. "Bill" e "Gui" estabelecem, pela primeira vez, um diálogo com o leitor, onde a estatística é despida de suas vestes arrogantes, e é mostrada simplesmente como uma ferramenta de análise e um meio de comunicação. Aprimorado pelos autores e seus alunos durante décadas de ensino, o Estatística sem Matemática traz os conceitos de uma forma corrente, quase oral, dispensando a simbologia tão familiar para os iniciados, e tão obscura para os iniciantes. Com a leitura desta obra do começo ao fim, como se recomenda, a estatística deixará de ser uma "ciência" arrogante, para se tornar parte de você.

Estatística sem Matemática - a book for biologists and conservationists available from the site **www.editoraplanta.com.br** Developed by the authors and their students during decades of teaching, Estatística sem Matemática presents the concepts in a logical sequence, in a conversational tone that dispenses with the symbolism that is so familiar to the initiated, and so obscure to novices. (*Currently available only in Portuguese, an English version is planned.)*

Announcing: The 8th Annual Meeting of the Canadian Amphibian and Reptile Conservation Network / Réseau Canadien de Conservation des Amphibiens et des Reptiles & The 3rd Annual Pelee Island Winery Endangered Species Festival / La Festivale des Espèces en Péril. September 11-14, 2003 Pelee Island, Ontario, Canada. If you would like more information on the conference, check out the CARCNET web site at **http://carcnet.ca/english/annualmeeting2003.html** or see **www.wildsofpelee.ca**

California Tiger Salamander Workshop: Ecology and Survey Techniques October 4-5, 2003 Rohnert Park, California. This workshop is designed to provide professional biologists with a background on conservation issues and regulations, recent research findings, and practical understanding of survey techniques of the California tiger salamander (CTS). This large fossorial salamander has been in decline in recent years and is endangered in many parts of the state. The Sonoma and Santa Barbara County populations are on the federal endangered species list and the U.S. Fish and Wildlife Service (USFWS) has proposed to list the species statewide. The California Department of Fish and Game considers the salamander a "Species of Special Concern".

Participants will learn how to identify the CTS in all life stages, the life history and habitat requirements, potential causes of declines, aquatic and terrestrial survey techniques, regulations and legal protections, and resource agencies' management plans and policies. The 2-day workshop will comprise presentations and field training. The Saturday session will consist of presentations on a variety of research, management, and regulation topics. Sunday will be a hands-on field training session on survey techniques, including pitfall trap array design and installation.

Additional information, a tentative schedule, and an online registration form are available on the "Meetings/Workshops" page of the web site for the Western Section of The Wildlife Society at **http://www.tws-west.org**
Contact Dave Cook at **michelle_cushing@hotmail.com** for more information.

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 Zoological Institute, P.O. Box 39, Royal Oak, MI 48068-0039, USA