



FROGLOG

Newsletter of the Declining Amphibian Populations Task Force
of the World Conservation Union's Species Survival Commission.

March 1997, Number 21.



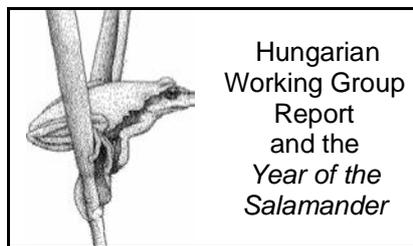
Anonymous Donation Boosts Seed Grant Funds!

An anonymous donor is generously making two contributions to our Seed Grant program. The first contribution is an outright gift of \$10,000 to support investigations of the role of climate change and UVB exposure in worldwide amphibian declines. The second contribution is a challenge grant, to be matched on a dollar-for-dollar basis, of up to \$10,000 (for a total of \$20,000). The pool of funds raised by the challenge grant will support investigations of the role of climate change and UVB exposure, chemical contaminants, or synergistic effects of these possible causes of global amphibian declines. Chemical contaminant studies, to be eligible for this pool of funds, must have regional or global implications. We encourage studies of environmental oestrogen mimics for these funds. At least half of the available funds will be dedicated to climate change and UVB exposure studies. The challenge period ends 31 July 1997.

Persons interested in applying for these funds should submit a Seed Grant proposal (see guidelines in FROGLOG 20 or contact John Wilkinson). We have set up a small committee to determine whether proposals received meet the guidelines established by the anonymous donor. If the guidelines are not met, then the proposals will be considered for our non-restricted seed grant funds.

Members of the DAPTF Board and I are embarking on activities to raise the \$10,000 to fully meet the challenge by the anonymous donor. However, as time is short, any suggestions of possible donors would be very much appreciated. Please

bring such potential sources to my attention at my new e-mail address: heyer.ron@nmnh.si.edu.
Ron Heyer, DAPTF Chair.



Hungarian Working Group Report and the Year of the Salamander

From Miklós Puky DAPTF-Hungary

Last year's conservation meeting was very successful, with 58 participants from several nations including Croatia, Germany, Hungary, Poland and the United States. We measured more than 5,000 amphibians of 9 species during a week. A good piece of news is that we managed to get the floodplain area designated as a strictly protected part of a would-be national park together with an area including amphibian summer habitat and hibernacula.

As a consequence, this year we shall focus on management options and the revitalization of areas which have been destroyed. We are also running an educational campaign for local people on the advantage of living at the edge of a national park.

Another brand new project we are just about to launch is the **1997 - Year of the Salamander** programme. We aim to generate publicity towards amphibians with a focus on the fire salamander, involve the general public in collecting data, set up a salamander day directory for schools, study circles etc. where they can find a day-long activity for different ages (from kindergarten to secondary school), compile a detailed distribution map and include a detailed study of some populations.

A new element is to record the cultural associations of amphibians

(including tales, rhymes etc.) for educational purposes.



Conservation Meeting in Hungary

Location: Parassapuszta, 78 kms north of Budapest on the Hungarian/Slovakian border.

Duration: 29/3/1997 - 6/4/1997

Accommodation: in a local school

Meals: participants cook for themselves

Travel: by train and bus, or car

Goals: This time the focus will be on middle-mountain valleys in the Börzsöny Mountains, the investigation of an important amphibian breeding site, the floodplain of the River Ipoly and possible conservation measures in the would-be national park area.

The main target species are four protected amphibians (two listed under the Bern Convention as strictly protected), together with three other species not mentioned here but present in the area:

Salamanca salamandra (the ratio of red and orange, spotted and striped individuals, length and weight characteristics, habitat descriptions).

Pelobates fuscus, a disappearing species (sex ratio, the analysis of its disappearance, the investigation of its breeding sites).

Rana dalmatina, the species which survives drought most successfully, (length-weight characteristics, sex ratio, breeding sites).

Bufo bufo, once the commonest amphibian in the region (sex ratio, the

cards. Participants range from "hard-core" herpetologists to school children and are located throughout the state. Because of the photo-documentation requirement, participants need not know what species they observed, just who they themselves are, where they are, and what day it is.

Since the official GHA "kickoff" in August 1996, over 250 records have been submitted representing over sixty different species. Additionally, more than 30 of the records have been from counties not previously documented as harboring a particular species. Despite a few out of focus photos, most shots have been very revealing as to the identity of the particular herp in question. One shortfall of the use of photos as vouchers is the difficulty in accurately identifying some species from a photo alone (i.e. five-lined skinks, *Bufo*, *Desmognathus*). Professional biologists have been asked to sacrifice single voucher specimens of these cryptic species to supplement photographic vouchers. In addition to photographs, audio recordings of frog calls, videos, and road-killed specimens are also considered acceptable verification.

For more information please contact: John Jensen, Georgia Herp Atlas, Nongame Program, 116 Rum Creek Dr., Forsyth, GA 31029, USA. Phone: (912) 994-1438
land.forsyth_nongame@mail.dnr.state.ga.us



It is now possible for high school and college biology classes, as well as other interested environmental groups, to become more involved in the research into global amphibian declines. A professionally prepared, hands-on teaching unit entitled "Amphibians as Bio-Indicators" is now available.

The unit consists of a set of professional 35mm colour slides of each of the 206 species of amphibians of the United States. Each slide is numbered and a variety of information is available with regard to the animals and their lifestyles. Customized sets are available for each of the 36 state units completed to date. More customized sets are expected to be offered soon.

Information about this unique teaching unit may be obtained from: Suzanne L. Miller, Kansas Heritage

Photography, 840 S.W. 97th Street, Wakarusa, KS 66546.
 Tel: 1-913-836-2119
wakarusa@cjnetworks.com



A new committee has recently been formed to review the status of Taiwanese amphibians. A status category has been assigned to each species based on species distribution, population size and population growth trends.

Four species have been categorized as "endangered": *Rhacophorus arvalis*, *Rhacophorus aurantiventris*, *Rana psaltis* and *Rana taiwanian*. The species *Hynobius formosanus*, *Hynobius sonani*, *Microhyla butleri*, *Rhacophorus prasinatus* and *Rana taipehensis* are considered "vulnerable". A further three species are listed as "rare", and eighteen species are deemed as being currently under "no risk".

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**From Vladimir L. Vershinin
 DAPTF - Urals (Urban Areas)**

Research has been conducted on amphibian populations in areas with a high degree of urbanization. We have established that specific reproductive strategies have appeared, promoting the formation of new genotypes in city populations. This is manifested phenotypically and in features of these populations' physiological functions. A high mortality in the early stages of development is compensated for by a sharp decrease in mortality at the point of metamorphosis.

The high tolerance of the spawn of *R. arvalis* in an urban environment represents the consequence of adaptive changes which promote successful reproduction in city populations. Other population dynamics result in the formation of specific genetic characters in new generations, that are displayed in a series of changes in phenotypic features. Under the conditions in city

ponds, larger animals (with a higher volume: surface-area ratio) are found, and with high rates of exchange and low skin penetration. Steady reproduction at a low average fecundity and small egg size, as well as a series of adaptive features at embryo, larva and froglet stages testify to the difference between reproductive strategies in *R. arvalis* from urban and natural populations.

Populations of sympatric species of brown frog from the same urbanized landscape display a different adaptive reproductive strategy. In urban *R. temporaria* populations, animals with a high growth rate, early sexual maturity and short longevity predominate. The increase in frequency of abnormal spawn in urban populations reflects definite changes in the most important of their functions, reproduction. This represents the extreme expression of these processes and can facilitate their early diagnosis. These changes in reproductive strategy produce territorially limited, small, isolated populations in the city area.

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Pedraza, E.M. and Lizana, M. (1996) Mortality of toad embryos because of UV-B radiation in high mountain areas of the Sierra de Gredos (Spanish Central System). *An abstract of a paper presented at the Spanish-Portuguese herpetological meeting in Porto, December 1996.*

During the breeding season of *Bufo bufo* and *Bufo calamita* in Prado de las Pozas, Sierra de Gredos, at 1920m, we collected 1800 eggs of both species from six different clutches (300/clutch). Eggs were distributed in 12 enclosures (150/enclosure) which permitted the circulation of water and air. Four enclosures were covered with Lumar filters which blocked UV-B radiation and four were covered with PVC filters which slightly impeded the passage of UV-B rays. The remaining four were covered with a 2cm-mesh plastic netting which permitted the passage of light and air and prevented possible predation. The enclosures were placed in the natural spawning sites of the two toads, a wide, quiet stream and a very shallow pond for *Bufo bufo* and *B. calamita* respectively.