

FROGLOG

IUCN/SSC Declining Amphibian Populations Task Force

September 1995 No 14

Task Force Future Directions

The question is frequently raised as to how long the Task Force should exist. There may be geographic areas where information will be difficult to obtain for many more years. Experimental studies examining potential causes of amphibian declines may raise questions as well as provide answers. It is our challenge as a Task Force to determine when we have achieved a critical body of data that will provide a scientifically credible answer as to whether observed amphibian declines are caused by regional or global factors. The necessary body of evidence is now emerging in the scientific literature, but it has not reached the stage of critical mass. I believe we need to be fully operational through the year 2000. We should then make a rigorous review of the information available to determine whether the Task Force can at that time fulfil its mandate.

After the Task Force Board Meeting in Bonn, I met with SSC headquarters staff in Gland, Switzerland. One of several items discussed was the future of the Task Force. Based on those discussions, I believe that when the Task Force fulfils its basic charge, its structure and function will be modified in order to pursue other meaningful conservation goals.

The Task Force does not have a publishing arm (by design) with the exception of a probable final report to be published by IUCN/SSC. Rather, we encourage individuals and working

groups to publish in peer reviewed scientific journals. I know of two outlets which specifically welcome amphibian conservation papers. The journal *Herpetological Conservation* has been initiated by the Society for the Study of Amphibians and Reptiles, whilst the journal *Alytes* is dedicated to publishing articles on amphibian conservation and research. At the last general meeting of ISSCA, the society that publishes *Alytes*, the editor encouraged Task Force members to submit their amphibian conservation papers to this journal.

In the next FROGLOG, responses to our recent appeals for funding will be summarized.

Ron Heyer (Task Force Chair)

DAP Symposium, Bonn

The recent annual meeting of Societas Europaea Herpetologica, held in Bonn, Germany, included a symposium on declining amphibian populations. Tyrone Hayes (Berkeley, USA) reported work on the role of estrogen mimics as possible endocrine disruptors. Laboratory studies in which the larvae of several species are exposed to a variety of substances have revealed a remarkable diversity of effects. For example, oestradiol treatment produces 100% female metamorphs in *Discoglossus pictus*, 100% males in *Rana pipiens*, but has no effect on the sex ratio in *R. sylvatica*.

Tzu Hao Wu and Hayes have used similar protocols to compare the effects of DDT and corticosterone; both induce abnormal development of the upper mandible. The effects of DDT vary greatly with dose and range from death, through developmental abnormalities, to gonadal effects. One possibility is that corticosterone releases accumulated DDT from the fat bodies of amphibians.

Leo Borkin (St. Petersburg, Russia) reported his studies of chemical and heavy metal pollution in the Ukraine. A 5-year study has revealed skeletal abnormalities, involving cancerous bone tumours, that are frequent in some species (*Rana ridibunda*, *Bombina bombina*) but not in others (*Bufo viridis*). Vladimir Ischenko (Ekaterinburg, Russia) suggested that, on the basis of his skeletochronological studies of a number of species, short-lived species may be more vulnerable to local extinction than long-lived species.

Stephan Kneitz (Bonn, Germany) reviewed the results of a study of amphibian populations in an agricultural habitat that has been ongoing since 1988. Most species show marked variations between years in both breeding population size and reproductive success but only one, *Bufo bufo*, appears to be showing a long-term decline, for reasons that are unclear. Miklós Puky (Göd, Hungary) has studied urban amphibian populations around Budapest and, since 1988, has documented marked declines in several species, due to both human impact and drought.

Kurt Grossebacker (Bern, Switzerland) reported his studies of many sites in Switzerland, some of which he has been monitoring for 26 years. These studies show how misleading trends revealed over a period of only a few years can be; typically, there are marked variations, some of which approximate to a 10-year cycle. At some sites, certain amphibians have become extinct, at others they have recovered from sudden declines and, where new ponds have been created, there have been population increases.

Tim Halliday

CIS Working
Group Report
Published

The work of the DAPTF regional group covering the CIS has been collated and published in a 159 page paperback *Amphibian Populations in the Commonwealth of Independent States: Current Status and Declines*, edited by S.L. Kuzmin, C.K. Dodd, Jr. and M. M. Pikulik. The book consists of a collection of papers from a team of over 40 authors, containing up to date information concerning the amphibian status and declines in the CIS. It also contains data on the distribution, life history, morphology and biochemistry of affected species.

Published by Pensoft, copies can be ordered through Dr. Lyubomir D. Penev, 1, Chekhov Str., 208, #6, 1113 Sofia, Bulgaria. Tel/fax: 03592-736188/715314, email: pensoft@main.infotel.bg or Sergei I. Golovatch, Institute for the Problems of Ecology and Evolution, Russian Acad. Sci., Leninsky Prospect 33, Moscow V-71, Russia, fax: 07095-9545534/9522592, email: sevin@sovamsu.sovusa.com.

Sri Lanka:
First National
Herpetological
Conference

In Sri Lanka the First National Conference on Herpetology was held on July 30th 1995 at the University of Peradeniya. W.R. Breckenridge, co-chair of the Working Group in Sri Lanka, explained the objectives of the DAPTF and also put forward the strategy of the Sri Lankan Working Group, which includes initiating local groups throughout Sri Lanka, preparing field identification keys and the compilation of a bibliography of Sri Lankan amphibian work. The Working Group is currently studying amphibians in protected areas and also anthropogenic threats to amphibians.

The conference was jointly organised by the University of Peradeniya, the Amphibian and Reptile Research Organisation of Sri Lanka, the Department of Wildlife Conservation and the Global Environmental Facility.

For further information contact: W.R. Breckenridge, Department of Zoology University of Peradeniya, Peradeniya Sri Lanka.

Pacific
Northwest
Update

The US PNW (Oregon and Washington states) Regional Group of the DAPTF has become a working group within the Pacific Northwest Amphibian and Reptile Consortium (PNARC). The latter has been formed to provide an open forum for regional herpetofaunal issues. Although the Consortium encompasses many aspects of herpetology, the initial emphasis is on the ecology and conservation of native species. Additional PNARC working groups include those devoted to developing standardized inventory and monitoring methodologies for regional herpetological surveys. PNARC membership represents professional and amateur biologists.

A PNARC workshop is planned for March 20-21, 1996, at the LaSalls Stewart Center, Oregon State University, Corvallis, OR, in conjunction with the 1996 annual meeting of the Society for Northwestern Vertebrate Biology, March 21-22.

A high proportion of the 31 native amphibian species in the PNW are cases for concern: more than half of the native species in Oregon are State listed as 'sensitive', while almost half of the native species in Washington are listed by the State as being 'of special concern'.

A three-year study of the distribution of the leopard frog, *Rana pipiens*, in eastern Washington by W.P. Leonard and K.R. McAllister has shown a significant reduction in range since the late 1950's. This study indicates that this formerly widespread species is now limited to two populations in the state.

Introduced *Rana catesbeiana* are thought to be responsible for losses of some native amphibians, such as the red-legged frog *Rana aurora*. Ongoing studies are directed towards assessing the impact of *Rana catesbeiana* on native species and also eradication of the introduced frog.

Amphibian survey programs have also revealed new breeding sites of the spotted frog (*Rana pretiosa*) which is now considered rare in the western US portion of its range.

The southern torrent salamander, *Rhyacotriton variegatus*, is being evaluated for listing as a threatened species pursuant to the US Endangered Species Act of 1973. Five species of rare endemic

salamanders (the Shasta salamander [*Hydromantes shastae*], the Del Norte salamander [*Plethodon elongatus*], the Siskiyou Mountains salamander [*P. stormi*], the Larch Mountain salamander [*P. larselli*], and Cascade Range populations of the Van Dyke's salamander [*P. vandykei*]) have been designated 'Survey and Manage' by the Northwest Forest Plan. This classification requires surveys of federal sites prior to ground disturbing activities, and the management of known sites of these animals to maintain existing populations, to avoid endangered species listing, and to preserve management options for the future. Inventory protocols and management guidelines to protect occupied locations in federal forests are being drafted.

Deana Olson (Pacific Northwest Research Station, USDA Forest Service, 3200 SW Jefferson Way, Corvallis, OR 97333, USA. Email: olsond@ccmail.orst.edu

Joint
DAPCAN/
NAAMP
Meeting

A joint meeting of the Task Force on Declining Amphibian Populations in Canada (DAPCAN) and the North American Amphibian Monitoring Program (NAAMP) has been convened at the Canada Centre for Inland Waters in Burlington, Ontario (September 27-October 1, 1995).

For information contact either of the following: NAAMP Conference, Sam Droege, National Biological Survey, 12100 Beech Forest Drive, Laurel, Maryland, U.S.A. 20708 tel. (301) 497-5840; fax (301) 497-5784; e-mail: frog@nbs.gov

Stan Orchard, DAPCAN, National Coordinator for Canada, #235F-560 Johnson Street, Victoria, British Columbia, CANADA V8W 3C6 email: Stan.Orchard@vonline.com

Student
Monitoring of
Amphibian
Populations

Student researchers, middle through high school age, from 30 schools across the United States are studying amphibian populations to contribute information to establish baseline data on local amphibian populations. Students communicate with each other and experts via the internet.

This interdisciplinary unit was designed as part of a distance

learning project on environmental topics for the Nebraska Department of Education's Technology Center. The work was funded through a grant from the United States Environmental Protection Agency.

The objective of the six week unit is to provide reliable data on amphibian populations. Emphasis is placed on visual and auditory recognition skills, field safety, collection techniques and environmental ethics.

DAPTF regional Coordinator, Dr. James Platz, served as primary consultant on the project and provided narration and instruction for the introductory videotape provided to each school.

Pre and post tests were given to students to see if exposure to amphibians and the knowledge gained from studying their habits and habitats, changed attitudes regarding the importance of these animals in the ecosystem. The test results are being compiled. Enthusiasm generated by students and teachers indicates a genuine commitment to continued participation.

Persons seeking more information regarding participation in this project should contact: Karen Toepfer, Unit Designer, Amphibians as Bio-Indicators, 303 West 39th Street, Hays, Kansas 67601, USA e-mail: fmkt@fhsuvm.fhsu.edu or: Mary Kalen Romjue, EPA Project Coordinator & Assistant Professor, of Science Education, University of Central Florida, 1519 Clearlake Road, Cocoa, Florida 32922-6598, USA. FAX: (407) 633-7696

New Issue-Based Working Group for the DAPTF

A new direction for the DAPTF is being taken through the formation of a working group to deal with education issues and/or outreach programs that are relevant to declining amphibian population and amphibian conservation issues. The Task Force requests that anyone already involved in an existing programme should contact the newly appointed chair of the DAPTF working group: Louanne Smith, Dallas Zoo, 621 East Clarendon Avenue, Dallas, Texas 75203-2996, USA, fax: 214 670-7450, email (shared): ZParadigm@AOL.com It would be helpful if printed copies of any such programmes could also be sent to Louanne Smith.

Boracéia Update

Declines and local extinctions of frogs were reported from Boracéia, Brasil, indicating that some detrimental event occurred in 1979 (Heyer, Rand, Cruz & Peixoto, 1988, *Biotropica*, 20 230-235). WRH made a brief visit to Boracéia in December 1991; JAB intensively studied the frog fauna at Boracéia between September 1993 and September 1994, for an average of ten days during each month. We wish to report on the current status of some of the key species reported by Heyer *et al.* (1988).

First of all, certain species that were considered to be rare at Boracéia have been encountered in JAB's studies: *Brachycephalus nodoterga*, *Osteocephalus langsdorffii* (a single dead individual), *Scinax flavoguttata*, and *Paratelmatobius gaigeae*.

The following previously abundant species that had completely disappeared in 1979 have not been seen since: *Crossodactylus dispar*, *C. gaudichaudii*, *Cycloramphus boraciensis*, *C. semipalmatus*, *Hylodes asper* and *Thoropa miliaris*. Two species populations were decimated in 1979: *Scinax perpusilla* and *Hylodes phyllodes*. *Scinax perpusilla* is now once again abundant, but only a few *H. phyllodes* can be heard calling from just three nearby streams. *Hyla albopunctata* has increased in abundance, apparently at the expense of *Hyla prasina*, which is now much more restricted in its distribution than in the late 1970s. *Scinax fuscovaria* seems to have successfully invaded the site, because calling males and amplexant pairs were observed. One factor that may be contributing to the continued disappearance of frogs at Boracéia is the progressive aridity of the climate, which is also evident from the less verdant appearance of the vegetation. The total rainfall in 1993 was only 1755 mm in contrast to the normal average of just over 3000 mm.

Jaime Bertoluci (Universidade de São Paulo, email: jaberol@cat.cce.usp.br) & W. Ronald Heyer (Smithsonian Institution).

Rana dalmatina on Jersey

The agile frog (*Rana dalmatina*) has a wide distribution throughout much of central and southern Europe, including the island of Jersey. Populations on Jersey have been in decline since the 1940s, and recent surveys indicate that now only small numbers of the frog are confined to a single site on the island. The decline does not seem to have been due simply to the loss of habitat, and even at the remaining site breeding success is limited. Of the Island's other two native species, *Triturus helveticus* is still widespread but *Bufo bufo*, whilst still breeding in garden ponds, also seems to be experiencing adverse conditions beyond the garden habitat, where large-scale spawn mortality has been observed.

Initiatives undertaken by the Environment & Countryside Services, (contact: Jeremy Partridge, South Hill, St. Helier, Jersey, JE2 4US, UK) include investigations of water quality, paying particular attention to the high nitrite levels that have already been recorded. A rearing and release programme is underway, in collaboration with Jersey Wildlife Preservation Trust (contact: Richard Gibson, Section Head, Department of Herpetology, JWPT, Les Augres Manor, Trinity, Jersey, UK, email: zooherps@itl.net) and several private individuals on the Island.

Update from Portugal

The Herpetological Group of the Centro de Biologia Ambiental of the University of Lisbon, headed by Prof E.G. Crespo, is surveying amphibian populations in two Natural Parks in Portugal. One of the studies, in the Natural Park of da Serra de S. Mamede, a mountainous area in southern Portugal, began in 1993. The survey covers two climatic regions; one, at low altitude, has a strong Mediterranean influence, the other, a higher altitude (1000m) region, has a stronger Atlantic influence.

The second survey, also initiated in 1993, covers a region, above 1400m, in the centre of northern Portugal, in the Natural Park of Serra da Estrela.

Both surveys are intended to measure changes in the distribution of the species and their abundance through a network of sampling stations. Sampling techniques (visual encounter survey, larval sampling, netting and auditory monitoring) have

been adapted and modified from Heyer *et al.* (1994) *Standard Methods for Amphibians*.

Octavio S. Paulo (Departamento de Zoologia e Antropologia Faculdade de Ciências da Universidade de Lisboa P-1700 Lisboa Portugal, email - zospaulo@bio.fc.ul.pt)

Sociedade Portuguesa de Herpetologia

The Sociedade Portuguesa de Herpetologia is a scientific society devoted to the study of amphibians and reptiles. Formed in late 1993, it aims to gather the scientific community of Portuguese herpetologists to enhance contacts and cooperation both within Portugal and beyond. SPH is chaired by E.G. Crespo, and produces a quarterly newsletter, *Folha Herpetológica*. SPH cooperates with the Spanish Association of Herpetology in organizing the Portuguese-Spanish Congress of Herpetology. The 4th Congress will take place in late 1996 in Porto, Portugal. For further information on SPH contact: Sociedade Portuguesa de Herpetologia, Dept. de Zoologia e Antropologia, Faculdade de Ciências de Lisboa, Bloco C2, Piso 3, Campo Grande, P-1700 Lisboa, Portugal.

IUCN/SSC Re-Introduction Guidelines

In response to the increasing occurrence of re-introduction projects world-wide, the IUCN/SSC Re-Introduction Specialist Group has drawn up policy guidelines to help to ensure the success of re-introduction schemes.

The document is intended to act as a guide for procedures useful to re-introduction programmes and does not represent an inflexible code of conduct. It is more concerned with re-introductions using captive-bred individuals rather than translocations from wild populations, and it is especially relevant to globally endangered species with limited numbers of founders. The document has been written to encompass the full range of plant and animal taxa and is therefore general in nature. It will be regularly revised. Copies can be obtained from the address below.

The IUCN/SSC Re-Introduction Specialist Group is keen to make contact with persons involved in amphibian re-introduction programmes, in order to facilitate exchange of information. Contact: Pritpal S. Soorae, IUCN/SSC Re-

Introduction Specialist Group, c/o African Wildlife Foundation, PO Box 48177, Nairobi, Kenya.
Email: awf.nrb@tt.gn.apc.org

Publications of Interest

Bidwell, J. and Gorrie, J. (1995) Acute toxicity of a herbicide to selected frog species. Final Report. Western Australia Department of Environmental Protection, Westralia Square, 141 St. George's Terrace, Perth, 6000. Technical Series No. 79. Copies available from the Department of Environmental Protection Library, Western Australia Department of Environmental Protection, Westralia Square, 141 St. George's Terrace, Perth, 6000, WA, Australia.

Blaustein, A.R., Beatty, J.J., Olson, D.H. and Storm, R.M. (1995) The biology of amphibians and reptiles in old-growth forests in the Pacific Northwest. US Department of Agriculture, Forest Service, Pacific Northwest Research Station. PNW-GTR-337.

Blaustein, A.R., Edmond, B., Kiesecker, J.M., Beatty, J.J. and Hokit., D.G. (1995) Ambient ultraviolet radiation causes mortality in salamander eggs. *Ecological Applications* 5, 740-743.

Boyer, R. & Grue, C. E. (1995) The need for water quality criteria for frogs. *Environ. Health Perspect.* 103, 352-357.

Carey, C. and Bryant, C.J. (1995) Possible interrelations among environmental toxicants, amphibian development, and decline of amphibian populations. *Environ. Health Perspect.* 103 (Suppl. 4), 13-17.

Daniels, R.J.R. (1994) Methodology for inventorying amphibians and reptiles. *Cobra* 15, 3-9.

Drury, S.E.N., Gough, R.E. and Cunningham, A.A. (1995) Isolation of an iridovirus-like agent from common frogs (*Rana temporaria*). *Veterinary Record* 137, 72-73.

Kaiser, H. and Henderson, R.W. (1994) The conservation status of Lesser Antillean frogs. *Herpetological Natural History* 2, (2) 41-56.

Kuzmin, S.L. (1994) The problem of declining amphibian populations in the Commonwealth of Independent States and adjacent territories. *Alytes* 12, (3) 123-134.

J. P. Levell (1995) *A Field Guide to Reptiles and the Law*. Serpent's Tale Press. A comprehensive listing of the laws, rules, and regulations governing amphibians and reptiles in the United States. It also explains CITES and the current US Endangered Species Act, and provides all 50 State's listings of endangered, threatened, and protected species, as well as collecting and possession rules. It is available from Zoo Book Sales, 464

Second Street, Excelsior, MN 55331, USA, by calling (612) 470-8733, or by faxing (612) 470-5013. Cost is \$29.95 plus \$2.00 extra for first class mailing or for international orders.

Márquez, R., Olmo, J.L. and Bosch, J. (1995) Recurrent mass mortality of larval midwife toads *Alytes obstetricans* in a lake in the Pyrenean Mountains. *Herpetological Journal* 5 (3), 287-289.

Meyer, J.R. (1995) A preliminary assessment of the status of the amphibians of Belize. Report submitted to the DAPTF.

Richter, K.O. (1995) A simple aquatic funnel trap and its application to wetland amphibian monitoring. *Herpetological Review* 26, (2) 90-91.

Klaus Richter has been further testing his funnel trap design with Bill Leonard and Mike Adams. They are testing trap densities and placement designs, baited or not, etc. Their results will be incorporated into a paper (in prep) describing standardized methods to survey pond-breeders in the Pacific Northwest, which will include details of how to survey wetland amphibians.

Pearman, P.B., Velasco, A.M. and Lopez, A. (1995) Tropical amphibian monitoring: a comparison of methods for detecting inter-site variation in species' composition. *Herpetologica* 51, 325-337.

Roush, W. (1995) When rigor meets reality. *Science* 269, 313-315. (Critique of experimental approach to ecological phenomena, especially Blaustein's experiments on UV effects on amphibians.) For correspondence arising from this article, see *Science*, 1st September 1995, pp. 1201-1204.

Seal, U.S. (1994) Houston Toad (*Bufo houstonensis*) Population and Habitat Viability Assessment. IUCN/SSC Conservation Breeding Specialist Group: Apple Valley, MN. 1-135.

New DAPTF Working Group Chairs

Brasil - Atlantic Forest

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