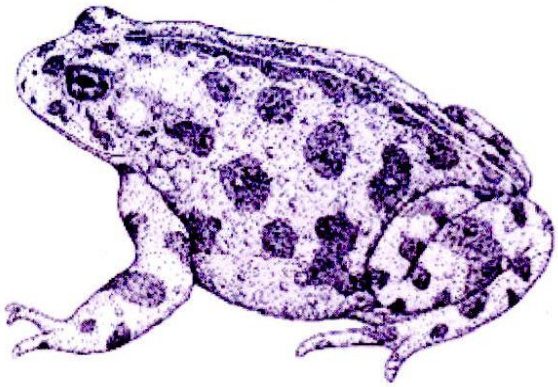
DAPTF

Declining Amphibian Populations Task Force

Collected DAPTF Working Group Reports: Ten Years On

John W. Wilkinson, Editor

2004



This document was produced with generous assistance from the IUCN (The World Conservation Union).

Editing & Design: John W. Wilkinson
Illustrations: Tim Halliday
Associate Editor: Diana Maxwell

Citation:
Wilkinson, J.W. (Ed.) (2004) *Collected DAPTF Working Group Reports: Ten Years On.* DAPTF, Milton Keynes.

Cover/title page illustration: *Bufo viridis* by Tim Halliday.

4.1 Commonwealth of Independent States (Former Soviet Union)

DAPTF C.I.S. Working Group Report

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Introduction

The DAPTF Regional Group for the Commonwealth of Independent States (CIS) was created in 1991 - 1992. Since then, it has included leading specialists in amphibian ecology and conservation in the former Soviet Union and became there the main driving force in these fields. Now the Group includes more than 60 members from 7 Republics, which are combined in 9 Sub-regional Groups. The main fields of activity of the DAPTF/CIS Regional Group are:

- The monitoring of model amphibian populations in Ukraine, West Siberia, the Far East (Primorye Region), Georgia and European Russia;
- Studies on anthropogenic influences on amphibian populations in Central Ukraine, Central Russia, Georgia, Byelorussia, Kazakhstan, and West Siberia;
- Studies on ontogenetic basals of amphibian population dynamics in Central Russia, Middle Transuralia and Georgia;
- Analysis of long-term changes in amphibian ranges throughout the former USSR;
- Monitoring and elaboration of conservation measures for rare and endangered amphibian species in Russia, Ukraine, Byelorussia, Georgia and Kazakhstan. Since 1996, we have published in English the journal *"Advances in Amphibian Research in the Former Soviet Union"* (Pensoft, Sofia) and we continue to compile a global bibliography on declining amphibian populations (now more than 300 sources). Since 1996, S.L. Kuzmin has been compiling a geographically-based database of all amphibians of the former USSR (®9803415, Russian State Register of Databases), that includes all available data the ecology, external morphology, population declines and conservation.

Status of Amphibians in the Former Soviet Union

The status of each amphibian species by the Republics of the CIS and other ex-Soviet Republics is shown in Table 4.1.1. According to this table, the majority of species in most Republics are Near Threatened; only a few, mainly narrow-ranged stenobiont forms (such as *Ranodon sibiricus, Mertensiella caucasica* etc.) are Endangered, Vulnerable or Rare.

These species are usually subject to decline in particular regions, although declines, in general, concern almost all amphibian species of the CIS. Data on particular incidences of recorded decline has been submitted to the Declining Amphibian Database (at DAPTF) As a rule, the declines are not stable and generally represent multiyear fluctuations in amphibian population numbers, which vary by species (see for example Figure 4.1.1). Among the widespread forms, *Triturus cristatus, Bombina bombina, Hyla arborea, Bufo bufo* and *Rana temporaria* displayed the most significant declines, especially at the margins of their ranges. These species are among the forms most susceptible to anthropogenic influences in urbanized and industrial regions (central Russia, Ukraine etc.). Nevertheless, in large areas of "natural" landscapes they seem to be in relatively safe conditions. Anthropogenic factors (largely habitat destruction and alteration) are responsible for the large majority of amphibian declines in the CIS.

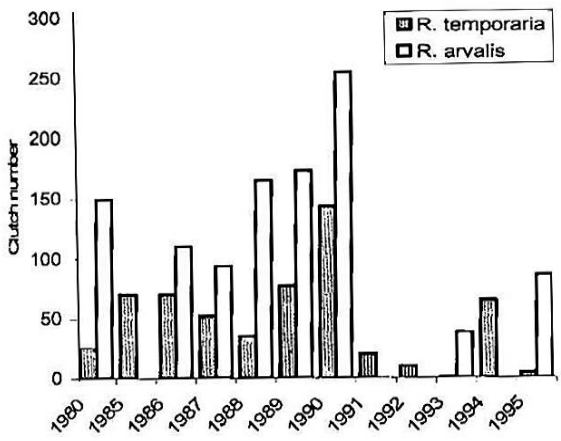

Figure 4.1.1. Multiyear variations in the number of clutches deposited by two brown frog species in a pond in Moscow City(amended after Kuzmin, 1999)

Disturbances of breeding habitats are especially important in decline phenomena in the CIS. In some cases, natural factors are involved. The endangered highland salamander, *Ranodon sibiricus*, has been found to have become extinct in very large areas of Kazakhstan due to not only anthropogenic influences but also overall aridization of the climate in the Tien-Shan Mountains. This species is in the worst condition among all the amphibians of the CIS, and it may be extinct in near future without effective protection.

The majority of declines in the CIS take place in urban and suburban areas, as well as in agricultural lands. The "hot spots" are large cities and their surroundings (Moscow, Ekaterinburg, Samara, Dnepripetrovsk etc.). The reparative facilities of amphibian populations in such areas are much lower than in agricultural landscapes.

In general, there is no single factor, or a "set of typical factors" responsible amphibian declines in the CIS. The same factors or their sets influence unequally different species of amphibians in different areas. There is also no systematic or phylogenetic pattern to declines. The more specialized a species is in respect to habitat, however, the more susceptible is it environmental disturbances.

Table 4.1.1. Conservation status of amphibian species in different ex-Soviet Republics (1/15) (amended after Kuzmin, 1999)

Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
H.tur.	/	/	/	/	/	/	/	/	/	/	/	/	/	I?	I?
S.key.	NT	/	/	/	/	/	/	/	/	/	R	/	/	/	/
R.sib.	/	/	/	/	/	/	/	/	/	/	EN	/	/	/	/
O.fis.	R	/	/	/	/	/	/	/	/	/	/	/	/	/	/
S.sal.	/	/	/	/	/	/	R	/	/	/	/	/	/	/	/
M.cau.	/	/	/	/	/	/	/	R	/	/	/	/	/	/	/
T.vul.	NT	NT	NT	NT	NT	NT	NT	I	R	VU	/	/	/	/	/
T.mon.	/	/	/	/	/	/	R	/	/	/	/	/	/	/	/
T.vit.	R	/	/	/	/	/	/	I	R	/	/	/	/	/	/
T.alp.	/	/	/	/	/		R	/	/	/	/	/	/	/	/
T.cri.	NT	NT	R	DD	I	NT	NT	/	/	/	/	/	/	/	/
T.dob.	/	/	/	/	/	DD	R	/	/	/	/	/	/	/	/
T.kar.	VU	/	/	/	/	/	VU	R	/	R	/	/	/	/	/
B.bom.	NT	NT	R	NT	/	NT	NT	/	/	/	NT	/	/	/	/

B.var.	/	/	/	/	/	/	NT	/	/	/	/	/	/	/	/
B.ori.	NT	/	/	/	/	/	/	/	/	/	/	/	/	/	/
P.fus.	NT	NT	DD	DD	I	R	NT	/	/	/	NT	/	/	/	/
P.syr.	EN	/	/	/	/	/	/	VU	R	R	/	/	/	/	/
P.cau.	R	/	/	/	/	/	/	I	/	R	/	/	/	/	/
B.buf.	NT	NT	NT	NT	NT	NT	NT	/	/	/	NT	/	/	/	/
B.ver.	R	/	/	/	/	/	/	I	/	R	/	/	/	/	/
B.gar.	NT	/	/	/	/	/	/	/	/	/	/	/	/	/	/
B.vir.	NT	NT	NT	NT	I	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B.dan.	/	/	/	/	/	/	/	/	/	/	DD	NT	DD	DD	DD
B.cal.	R	R	R	R	VU	/	R	/	/	/	/	/	/	/	/
B.rad.	NT	/	/	/	/	/	/	/	/	/	/	/	/	/	/
H.arb.	NT	NT	EX	DD	/	NT	NT	NT	DD	NT	/	/	/	/	/
H.sav.	/	/	/	/	/	/	/	I	I	I	/	/	/	/	/
H.jap.	NT	/	/	/	/	/	/	/	/	/	/	/	/	/	/
R.tem.	NT	NT	NT	NT	NT	NT	NT	/	/	/	VU	/	/	/	/
R.arv.	NT	NT	NT	NT	DD	NT	NT	NT	/	/	NT	/	/	/	/
R.dal.	/	/	/	/	/	/	R	/	/	/	/	/	/	/	/
R.mac.	NT	/	/	/	/	/	/	NT	NT	NT	/	/	EX ?	/	/
R.amu.	NT	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Species	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
R.asi.	/	/	/	/	/	/	/	/	/	/	VU	DD	/	/	/
R.dyb.	NT	/	/	/	/	/	/	/	/	/	/	/	/	/	/
R.rid.	NT	NT	K	NT	EX	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
R.les.	NT	NT	DD	NT	DD	NT	NT	/	/	/	/	/	/	/	/
R.esc.	NT	DD	DD	DD	DD	/	NT	/	/	/	/	/	/	/	/
R.ter.	/	/	/	/	/	/	/	/	/	/	/	/	/	/	DD
R.nig.	NT	/	/	/	/	/	/	/	/	/	/	/	DD	/	/

KEY **Species:** *H.tur. - Hynobius turkestanicus; S.key. - Salamandrella keyserlingii; R.sib. - Ranodon sibiricus; O.fis. - Onychodactylus fischeri; S.sal. - Salamandra salamandra; M.cau. - Mertensiella caucasica; T.vul. - Triturus vulgaris; T.vit. - T.vittatus; T.mon. - T.montandoni; T.alp. - T.alpestris; T.cri. - T.cristatus; T.dob. - T.dobrogicus; T.kar. - T.karelinii; B.bom. -*

Bombina bombina; B.var. - B.variegata; B.ori. - B.orientalis; P.fus. - P.fuscus; P.syr. - P.syriacus; P.cau. - Pelodytes caucasicus; B.buf. - Bufo bufo; B.ver. - B.verrucosissimus; B.gar. - B.gargarizans; B.vir. - B.viridis; B.dan. - B.danatensis; B.cal. - B.calamita; B.rad. - B.raddei; H.arb. - Hyla arborea; H.sav. - H.savignyi; H.jap. - H.japonica; R.tem. - R.temporaria; R.arv. - R.arvalis; R.dal. - R.dalmatina; R.mac. - R.macrocnemis; R.amu. - R.amurensis; R.asi. - R.asiatica; R.dyb. - R.dybowskii; R.rid. - R.ridibunda; R.les. - R.lessonae; R.esc. - R.kl.esculenta; R.ter. - R.terentievi; R.nig. - R.nigromaculata.

Republics: 1 - Russia; 2 - Byelorussia; 3 - Latvia; 4 - Lithuania; 5 - Estonia; 6 - Moldavia; 7 - Ukraine; 8 - Georgia; 9 - Armenia; 10 - Azerbaijan; 11 - Kazakhstan; 12 - Kirgizia; 13 - Turkmenia; 14 - Uzbekistan; 15 - Tajikistan.

Status categories: Extinct (EX) ; Critically Endangered (CR); Endangered (EN); Vulnerable (VU); Rare (R); Indeterminate (I); Lower Risk (LR); Data Deficient (DD); Not Threatened (NT); [/ - does not occur there]. Based on IUCN/SSC (1994).

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