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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE  
AND NATURAL HABITATS

**Standing Committee**

37<sup>th</sup> meeting  
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**GROUP OF EXPERTS ON  
AMPHIBIANS AND REPTILES**

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Trondheim, Norway

**- NATIONAL REPORTS -**

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## ARMENIA / ARMÉNIE

### IMPLEMENTATION OF RECOMMENDATION NO. 176 (2015) OF THE STANDING COMMITTEE, ADOPTED 4TH DECEMBER, 2015 ON THE PREVENTION AND CONTROL OF THE *BATRACHOCHYTRIUM SALAMANDRIVORANS* CHYTRID FUNGUS

The *Batrachochytrium salamandrivorans* have not been identified in the territory of Armenia yet /Herbarium materials of the Yerevan State University/.

On the small territory of the country (about 30 thousand km<sup>2</sup>) there are about 3800 species of vascular plants, 428 species of soil and water algae, 399 species of mosses, **4207 species of fungi.**

In the Red Book of Plants of Armenia 452 species of vascular plants (11,89 % of the flora of Armenia) and 40 species of fungi (1,05% of the biota of Armenia) are registered.

6 species of fungi were assessed as Critically Endangered (CR) according to IUCN criteria and they need urgent protection.

Fungi	Number of species	Number of endemics
Microfungi	2987	
Macrofungi	1220	2
<b>Total</b>		<b>4207/2</b>

The updated Red Book of Plants of Armenia includes also Macrofungies (40 species), which were not included in the previous edition. They belong to the following categories:

- Extinct (EX) – 1 species
- Critically Endangered (CR) - 6 species
- Endangered (EN) - 15 species
- Vulnerable (VU) - 12 species
- Near threatened (NT) – 2 species
- Data deficient (DD) – 4 species

Five of the mentioned fungi are included in the European Red List of Fungi. In addition, the maps of 10 fungi species identified in Armenia are presented on the map of threatened fungi of Europe. The studies on lichens diversity have also been implemented. In the result at present 462 taxa of lichens and 2 species of lichenicolous fungi are known to be distributed in Armenia.

Over the last years for the first time in Armenia the mycobiota of pathogenic fungi parasitising on 96 species of fodder plants belonging to 12 genera of Fabaceae and Poaceae families has been subject to the target study. It has been identified that the mycobiota includes 160 species of microscopic fungi belonging to 51 genera, 18 orders, 7 classes and 3 phylums. For the first time in the mycobiota of Armenia 13 species of fungi parasitizing on fodder plants have been identified.

122 species of macrofungi growing in Armenia also have pharmacological properties. The most rich composition of medicinal mushroom species has the subclass Agaricomycetidae (belonging to blewits) with its 14 families, of which the following families have relatively high species diversity: Tricholomataceae (10 genera, 17 species), Russulaceae (2 genera, 15 species), Boletaceae (2 genera, 8 species) and Amanitaceae (2 genera, 7 species). Out of identified species 12 are included in the Red Book of Armenia (*Agaricus xanthodermus*, *Amanita muscaria*, *A. phalloides*, *Astraeus hygrometricus*, *Boletus edulis*, *B. satanas*, *Hericium erinaceus*, *Mutinus caninus*, *Phallus impudicus*, *Pleurotus eryngii*, *Podaxis pistillaris*, *Suillus grevillei*).

The medicines produced from several mushroom species with pharmacological properties (*Inonotus obliquus* – chaga mushroom, *Ganoderma lucidum* – Reishi mushroom) are sold in pharmacies and a number of mushroom species having demand among consumers (*Agaricus campestris*, *A. bisporus* - *champignons*, *Pleurotus ostreatus* - oyster mushroom) are grown in greenhouses.

# AUSTRIA / AUTRICHE

## REPORT OF THE AUSTRIAN DELEGATE ON NATIONAL ACTIVITIES AND INITIATIVES ON THE CONSERVATION OF AMPHIBIANS AND REPTILES

Werner Kammel

### PRELIMINARY REMARK

In all Austrian federal states certainly several measures on saving Amphibians at roads are carried out. As well many concepts and actions on important natural areas are providing protection for herptiles, often being part of the framework NATURA 2000. Additionally, there are numerous projects where compensation measures (CEF measures) in the course of nature conservational procedures have been realized, as well as essential habitat structures like breeding ponds for Amphibians at numerous protected areas. Additionally Natura 2000 areas have been recently designated (partly in progress).

All those activities will not be further mentioned in this report.

### 1. MONITORING OF NATURAL HABITATS AND SPECIES OF COMMON INTEREST

According to art. 17 FFH directive

Within the framework of the Austrian project „Monitoring of protected areas and species of Community interest“ (2016 – 2018) the monitoring of herptiles is currently restricted to the species of the Green toad (*Bufo viridis*), the Natterjack toad (*Epidalea calamita*) and the European Nose-horned Viper (*Vipera ammodytes*), in order to present results for the article 17 report 2019. This nationwide project has been planned and conceived partly under consultation of the Umweltbundesamt (UBA) and also has been charged to the UBA. The nine federal states of Austria take over funding and responsibility. The UBA has assigned the ÖGH (Österreichische Gesellschaft für Herpetologie) to conduct the field work.

In the state of Salzburg a monitoring of the herpetofauna (all species) takes place since 2014.

In 2016 the state of Styria has started a monitoring of all herptiles mentioned by the FFH directive (app. II, IV and V); until now: preliminary measures, definition of methods and sites. This project includes as well necessary protective measures.

### 2. FURTHER ACTIVITIES RELATING TO ENDANGERED HERPTILES

According to Rec. No. 119 (resp. 26 und 27) of the Berne Convention

#### *Vorarlberg*

In order to update the Red List of the herpetofauna the species *Salamandra salamandra*, *Triturus cristatus*, *Lissotriton helveticus*, *Pelophylax ridibundus*, *Hyla arborea* and *Coronella austriaca*, an extensive mapping process is in operation.

#### *Salzburg*

LIFE project „Salzachauen“: Including mapping of herptiles at this N 2000 site as a basis for assessments on meanwhile initiated protective measures

#### *Kärnten (Carinthia)*

Species protection program „Green Lizard“ in Western Carinthia and Eastern Tyrol in order to evaluate its status and necessary protective measures (ARGE Naturschutz, since end 2016)

***Oberösterreich (Upper Austria)***

Implementation of measures in existing Natura 2000 areas; concentration on measures according to endangered species restricted to app. II and IV of the FFH directive focussed on *Triturus cristatus*, *Bombina bombina*, *Bufo viridis*, *Hyla arborea*, *Pelophylax lessonae*, *Lacerta viridis*.

Existing instruments of financial funding and strategies are being evaluated in step with actual practice (i.e. refunding extensive management of waters focussed on temporary water bodies; cooperation with partners like mining companies or military units) a.s.o.

Deliberate concentration on monitoring and reports according to FFH directive base, on the assumption that these instruments have to be the future basis of nature and species conservation or that any strategic approach is supposed to fail.

***Steiermark (Styria)***

LIFE+ project „Ausseerland“ to protect natural forests and swamps in a mountainous area, as well as to connect existing N 2000 areas (Federal Forestry Administration), including mapping, monitoring and constructing/restoring new habitats for endangered species (i.e. *Triturus carnifex*, *Bombina variegata*)

***Niederösterreich (Lower Austria)***

LIFE project „Auenwildnis Wachau“ (module species protection for Amphibians: mapping, protection, management, monitoring (until 2019))

Conception and implementation of species and habitat protection in mining areas (Forum Rohstoffe/Birdlife, until 2018)

Prolongation of the species protection program „European Pond Turtle“ (Nationalpark Donau-March-Thaya-Auen; since 1997) focussed on In-situ measures like protection of nesting sites.

Additionally in this National Park studies on population ecology and species protection concepts have been implemented on the species *Triturus dobrogicus* and *Natrix tessellata*.

***Wien (Vienna)***

Mapping and evaluation of the conservation status of the Sand Lizard (*Lacerta agilis*) and the Smooth snake (*Coronella austriaca*)

Monitoring of *Natrix tessellata* and *Lacerta viridis* in order to define conservational measures at the Kuchelauer Hafen (Danube)

Mapping of Viennese amphibian breeding sites.

Monitoring of *Triturus dobrogicus* and evaluation of its population numbers in the Lobau (riverine forests, part of the National Park)

It has been suggested by the federal states to work out the remaining residual value of the Berne Convention in EU member states in a proper way and to concentrate on these sectors further on.

**RECOMMENDATION NO. 176 (2015) ON THE PREVENTION AND CONTROL OF THE BATRACHOCHYTRIUM SALAMANDRIVORANS CHYTRID FUNGUS (Bsal)****NATIONAL REPORT**

A screening of Bsal takes place in Tyrol and Vienna since 2016, additionally in Vorarlberg, Carinthia and Salzburg since 2017. Field work is currently based mainly on a voluntary level. PCR assessment has been elaborated by the University of Veterinary Medicine Vienna since 2016. So far the results show to be negative (no records of outbreaks). Regarding Rec. No. 176 further actions and an expansion of activities to other federal states are under discussion.

# ESTONIA / ESTONIE

## ESTONIAN COUNTRY REPORT ON THE CONSERVATION OF AMPHIBIANS AND REPTILES

### Authority concerned:

Ministry of the Environment, Nature Conservation Department, Narva mnt 7a, Tallinn / Estonia

Estonia has 10 native amphibian species and 5 native reptile species. There is one established alien amphibian species *Pelophylax ridibundus* (*Rana ridibunda*) and there are 2 casual non-breeding alien reptile species (*Trachemys scripta* and *Graptemys kohni*).

### LEGISLATION, ACTION PLANS AND MONITORING

All Estonian native amphibians and reptiles are protected species divided in to one of three protection categories (see tables 1 and 2), with protection category one being the strictest. According to the Nature Conservation Act (from here on NCA) protected species are protected through the habitats (protected areas) and also by specimen protection.

Intentional killing of a specimen of a protected species, except for the purposes of euthanasia, is prohibited, also it is prohibited to capture or intentionally disturb specimens of protected species during the breeding, brood rearing, wintering or migration season (some exceptions may apply).

The protection of all known habitats of species in the 1<sup>st</sup> protection category will be ensured by formally protecting these habitats (e.g by formation of protected areas, limited-conservation areas or determination of species protection sites). For the species in the 2<sup>nd</sup> protection category at least 50 percent of registered habitats and for the 3<sup>rd</sup> category at least 10% of registered habitats shall be protected according to the NCA. See species status and protection categories in tables 1 and 2.

Special species protection sites have so far been established for two amphibians and one reptile species (10 for great crested newt, 6 for natterjack toad and 1 joint species conservation site for sand lizard and natterjack toad). Special species protection sites are being prepared for the common spadefoot toad and also additional special species protection sites will be designated for the sand lizard and natterjack toad. The species protection sites have strict regulations on the habitat use to protect the species. For example in the great crested newt special protection site: the releasing fish to the water bodies is prohibited, in the 50 m zone of east and south margins of waterbody planting trees is prohibited, for the use of herbicides and pesticides special permission needs to be acquired.

*Table 1 Status of Estonian reptiles*

Latin name	Common name	Protection category	Red list assessment 2008	Red list assessment 2017	Habitats Directive assessment 2013
<i>Anguis fragilis</i>	slow worm	III	LC	VU	
<i>Lacerta agilis</i>	sand lizard	II	VU	EN	Unfavourable-Inadequate
<i>Natrix natrix</i>	grass snake	III	NE	LC	
<i>Zootoca vivipara</i> ( <i>Lacerta vivipara</i> )	viviparous lizard	III	NE	LC	
<i>Vipera berus</i>	common European adder	III	NE	LC	

**Table 2 Status of Estonian amphibians**

<b>Latin name</b>	<b>Common name</b>	<b>Protection category</b>	<b>Red list assessment 2008</b>	<b>Red list assessment 2017</b>	<b>Habitats Directive assessment 2013</b>
<i>Bufo bufo</i>	common toad	III	LC	LC	
<i>Bufo viridis</i>	European green toad	I	CR	RE	Unfavourable-Bad (declining)
<i>Epidalea calamita</i> ( <i>Bufo calamita</i> )	natterjack toad	I	EN	EN	Unfavourable-Bad
<i>Lissotriton vulgaris</i> ( <i>Triturus vulgaris</i> )	smooth newt	III	LC	LC	
<i>Pelobates fuscus</i>	common spadefoot	II	VU	EN	Unfavourable-Inadequate (improving)
<i>Pelophylax kl. esculentus</i> ( <i>Rana esculanta</i> )	edible frog	III	NE	LC	
<i>Rana arvalis</i>	moor frog	III	LC	NT	Favorable
<i>Rana lessonae</i>	pool frog	III	NE	LC	Favorable
<i>Rana temporaria</i>	common frog	III	LC	LC	Favorable
<i>Triturus cristatus</i>	great crested newt	II	VU	VU	Unfavourable-Inadequate (improving)

NCA states that for the protected species, where deemed necessary, special species action plans are compiled. These action plans give an overview of the biology of the species, main threats and plan actions for their research, conservation and monitoring in detailed manner for 5 years and in more general manner for long term time scale. Action plans also contain concrete actions planned and a budget for the first 5 years. Such action plans have been compiled and adapted for the natterjack toad and great crested newt, spadefoot toad and sand lizard. Compiled and soon to be adopted are action plans for the brown frogs (*Rana arvalis*, *Rana temporaria*), green frogs (*Pelophylax kl. esculentus*, *Rana lessonae* and green toad.

Based on state biodiversity monitoring program there is yearly monitoring in 13 locations for natterjack toad, 17 locations for common spadefoot toad and 22 locations for great crested newt. There is also yearly monitoring of sand lizard in 5 locations.

There have also been county based amphibian inventories carried out in 12 out of 15 counties in Estonia, last 3 counties (Hiiumaa, Saaremaa and Pärnumaa) to be carried out in coming years. As our knowledge was lacking in sand lizard distribution and status- 2 years of inventories were carried out with the help of Dutch expert Jöran Janse prior to compiling the species action plan.

A study to ascertain the presence of *Batrachochytrium dendrobatidis* and *Batrachochytrium salamandrivorans* was conducted in 2014-2016 in Estonia. Altogether 315 skin swab samples taken from different localities all over Estonia were analyzed. Six species of Estonian amphibians (*Lissotriton vulgaris*, *Pelobates fuscus*, *Epidalea calamita*, *Rana arvalis*, *R. temporaria*, *Pelophylax lessonae*) tested positive for *Batrachochytrium dendrobatidis*. Positive samples were found from different locations in Estonia. *Batrachochytrium salamandrivorans* was not detected in any of the samples. Although *Batrachochytridium dendrobatidis* is present in many locations in mainland Estonia and on at least six amphibian species, the characteristic mass mortality events of acute infection of *Batrachochytridium dendrobatidis* have not been detected so far.



## CONSERVATION ACTIONS

Based on actions foreseen in the species action plans each year there are actions financed by the state budget. The main tasks have been restoring breeding sites or digging of new water bodies for amphibian breeding. As small waterbodies traditionally used for cattle, washing water, garden water or flax have been neglected, many small waterbodies have overgrown with tall vegetation (mainly *Salix* sp.) or have needed to be cleaned of mud. Also the introduction of fish to small waters is serious problem and there have been actions to eradicate fish by draining and cleaning the ponds.

For the natterjack toad there have been each year voluntary based work camps to clear the overgrowing coastal meadows. These camps are very popular and have been happening for more than 15 years. Organisation of these camps has been supported by the state budget.

For the past years there has been effort to increase breeding success by supportive breeding of eggs and tadpoles of the natterjack toad to metamorphosed toadlets in rearing centre at Matsalu NP, to reduce the predation and mortality.

We have also created an ex-situ population of a small island population of Estonian natterjack toads in Copenhagen zoo. These animals have successfully been breeding since 2013 and egg-strings or toadlets have been annually brought to Estonia, to rise them in the rearing centre and to be released back to their natal island.

When looking at the species status in latest (2017) red list assessments (see table 1 and 2) it is clearly visible that species for which large scale habitat restoration has been carried out their status is mostly stable, but threatened species where such actions have not been done or have been done in small scale have deteriorated.

One of the biggest concerns is the mortality of amphibians on roads during their spring and autumn migration. Although the conflict sites on main roads are detected, Estonia has not managed yet to construct high quality amphibian migration tunnels for the main locations where the migration routes cross the roads. So far amphibian fences and tunnels have been built for four locations on main routes in Estonia. However, three of these efforts have been unsuccessful. Therefore voluntary campaigns collecting and helping amphibians cross the roads safely have been organized since 2012 each spring. These campaigns have also been successful in raising public awareness and mapping the places where the tunnels are most urgently needed.

## LIFE PROJECTS

Besides state and voluntary organised actions there have been several large LIFE projects focusing to the amphibians.

For the **natterjack toad** there have been 3 projects entirely or partly focusing on that species:

- 2001-2004 Coastal Meadows - Boreal Baltic Coastal Meadow Preservation in Estonia (LIFE00 NAT/EE/007083)
- 2001-2005 Häädemeeste - Restoration and management of the Häädemeeste wetland complex (LIFE00 NAT/EE/007082)
- 2005-2012 BALTCOAST - Rehabilitation of the Baltic coastal lagoon habitat complex (LIFE05 NAT/D/000152)

These projects have focused on the restoration of the coastal meadows (initiation of grazing and mowing) the very important habitat of the natterjack toad in Estonia. Also small shallow breeding waters have been restored on coastal meadows through these projects.

One of Estonias' most successful LIFE projects (voted to the list of Best LIFE Nature Projects 2009) was the project „Protecting the **Great Crested Newt** in the Eastern Baltic“ carried out in 2004-2008, which included international corporation, sharing of knowledge and habitat restoration and management.

The Great Crested Newt is in Estonia in its' distributions' northern range. The main area of distribution is in hillocks of South-East of Estonia and also one locality in Pandivere upland more to the north.

The species is very selective of its' habitat and is present only in mosaic landscapes with good quality water bodies, and good foraging and hibernation sites. As the species has poor migratory ability the good quality terrestrial and aquatic components should be within 50 m of each other. More info on the habitat requirements of great crested newt in the Estonia and also Denmark and Lithuania can be seen in "[Protection of the Great Crested Newt Best Practice guidelines](#)".

The project adjusted the Danish habitat management and restoration techniques to the regional and local conditions found in Finland and Estonia.

The project concentrated on the restoration and protection of a network of suitable habitats, targeting 95-97% of the species' populations in Estonia and Finland. The main action was to ensure there were enough ponds for breeding. As of December 2008, 240 ponds had been created in Estonia and 21 restored in Finland, as well as 12 'demonstration ponds' in different habitat types in Denmark. Before the habitat management and pond reconstruction started *T. cristatus* was present in less than 25% of ponds in the project areas. No relocation (assisted migration) was carried out in Estonia. Monitoring of water bodies created by the project in spring 2008 showed that 127 (>50%) ponds surveyed in Estonia had been colonised by the newt, and this increasing colonisation trend has continued.

A further aim of the project was to use the experience gained to produce a best practice guidelines and country or county wide action plans for the great crested newt were created in participating countries.

DragonLIFE 2010-2015 - Securing *Leucorrhinia pectoralis* and *Pelobates fuscus* in the northern distribution area in Estonia and Denmark (LIFE08NAT/EE/000257)

The aim of this project is to protect small and isolated populations of yellow-spotted whiteface (*Leucorrhinia pectoralis*) and an amphibian species, common spadefoot toad and to preserve and restore small freshwater bodies that these semi-aquatic species need to complete their complex life-cycles.

The lack of suitable wetlands and freshwater bodies is the main reason why the populations of the project's target species, have declined considerably in the second half of the 20th century in Estonia and Denmark.

At the same time yellow-spotted whiteface and common spadefoot toad can be considered as so called umbrella species to a large number of aquatic and semi-aquatic species that inhabit these small, clean, fish-free freshwater bodies (e.g. *Triturus cristatus*, *Aeshna viridis*, *Leucorrhinia albifrons*, *Graphoderus bilineatus*, *Dytiscus marginalis*, *Dytiscus latissimus*).

The main task of the project has been the restoration or creation of breeding ponds for the target species. These ponds are colonized quite quickly. In June and July 2014, ponds restored by the project from 2010 to 2013 were inventoried. Common spadefoot toad was breeding in 23 ponds (36% of all restored/created ponds), and these ponds offer breeding sites for other species such as *Rana arvalis*, *R. temporaria*, *R. lessonae*, *Triturus vulgaris*. The first results of 2015 inventories show increase in *Pelobates*- for example in Piirisaare island common spadefoot tadpoles were present in 5 out of 10 restored ponds (2014 in 3 ponds).

Very important has also been the publication of field keys of amphibians and dragonflies in Estonian, as this has led to more citizen science interest and reporting on these species. The project has also compiled leaflet on removing of alien species from ponds. [More information on the project and all publications available on the project site as pdf-s.](#)

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**“THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA” /  
« EX-RÉPUBLIQUE YOUGOSLAVE DE MACÉDOINE »**

The [National Report from “the former Yugoslav Republic of Macedonia”](#) can be found on the meeting website.