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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

36th meeting
Strasbourg, 15-18 November 2016

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Follow-up of Recommendation No. 176 (2015) on the prevention and control of the *Batrachochytrium salamandrivorans* chytrid fungus

- REPORTS BY THE PARTIES -

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ARMENIA / ARMÉNIE

NATIONAL REPORT

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 km2) 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
Total		**4207/2**

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 են (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 (*Bufotes 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 Bern 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, Bufotes 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 „Euopean 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 ordert o 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 Bern 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.

BELGIUM / BELGIQUE

Follow-up of Recommendation No. 176 (2015) on the prevention and control of the *Batrachochytrium salamandrivorans* chytrid fungus

Report of Belgium (draft) – September 2016

1. STAGES OF INVASION OF BSAL IN WILD POPULATION OF SALAMANDERS AND NEWTS

Batrachochytrium salamandrivorans (Bsal) was first discovered in 2013 on indigenous dead salamanders in the Eastern part of Belgium (Walloon Region), closed to the Netherlands and Germany. Further discovery of contamination of dead salamanders occurred respectively in the same region in 2014 and 2015. In April 2016 four Bsal positively tested salamanders were found dead in Dinant (70 km from the originally contaminated area).

In Flanders, two newts were found dead in 2015 in a pond near Antwerp. Both were Bsal infected. No other case has been found in Flanders.

In Brussels, no case has been found up until now.

2. MEASURES TAKEN AT REGIONAL LEVEL

- In Belgium the three Regions are competent for nature conservation, the federal authority being competent for the import, export and transit of non-indigenous species. Wallonia and Flanders implement passive and active surveillance on their territory in a view of preventing further spread of the pathogen and to mitigate it where feasible.
- Those measures are already or are expected to be coupled with a regular monitoring of salamanders (*salamandra salamandra*) and crested newt.

In Flanders, a monitoring methodology [1]for the Fire salamander (*Salamandra salamandra*) has been set up. The aim of the monitoring is to obtain a population trend estimate on a Flemish scale. Animals are counted by means of a transect count. Since the Fire salamander occurs in less than 60 sites, all populations are monitored. The 35 forests or forest complexes are visited annually. Data are registered through a data portal.

In Wallonia, similar methodology is expected to be applied but on 20 sites across the region as it has the highest population of *salamandra salamandra* in Belgium.

Brussel monitors all its population of salamanders which is the smallest one in Belgium (one population on 2 sites).

- Strict biosecurity rules apply and a hygiene protocol applies to field work. See detailed information in annexes (in French & Dutch).

2.1 Passive surveillance

A passive surveillance applies in both Flanders and Wallonia since the pathogen was first discovered in Belgium.

Passive surveillance includes the following measures :

- general communication and awareness campaign to the press, the general public and to different sectors concerned like NGO's, hunters, universities, walking clubs, etc, …;

[1] https://www.inbo.be/nl/publicatie/monitoringsprotocol-vuursalamander (available in Dutch)

- in case a citizen discovers a dead salamander for which no other lethal cause is possible (a car for example), he can call a number where he receives instruction to handle the case :
  - In Wallonia: http://biodiversite.wallonie.be/fr/11-05-2016-la-salamandre-tachetee-en-peril-appel-a-la-collaboration-de-tous.html?IDC=3419&IDD=4878
  - In Flanders : www.natuurenbos.be/wildedierenziekten
  - In Brussels : XXX?
- dedicated regular communication is made to the Nature & Forests agents in order for them to recognize sick or dead salamanders;
- dead salamander discovered should be put in a plastic bag and stored in the freeze;
- a public officer (or a citizen itself in Flanders) brings the animal to the University of Ghent for further analysis;
- when a salamander or newt is tested positive, information through biosafety rules apply in the area of infection.

2.2 Active surveillance

In order to monitor Bsal transmission in wild population of salamanders, active surveillance programs are currently implemented.

In Flanders, the program, which also encompasses active surveillance for *Batrachochytrium dendrobatidis (Bd)*, started in February 2015 and will end up in January 2018. It covers all population of salamanders in Flanders. Current analysis does not reveal any new discovery of the pathogen till now.

In Wallonia, after the detection of the pathogen, a monitoring for pathogen occurrence in 2 infected sites in the East of Belgium was done by the University of Ghent and the University of Liège. Results ? XXX

A one-year program has started in August 2016 in 25 forests across Wallonia. The objective is to collect sample from at least 5 adults salamanders per site (dead or alive).

3. MEASURES AT FEDERAL LEVEL

A draft Royal Decree on the imposition of a temporary ban on the import, export and transit of certain non-native genera of salamander and newt has been notified on 19 May 2016 to the European Commission in accordance with Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical standards and regulation.

Belgium received observations from the European Commission that are currently analyzed by the federal authority.

4. NATIONAL PLAN

Beside all actions currently implemented, a four-year national plan aiming at coordinating actions at the level of the 3 Regions is to be submitted for approval to the Ministers of Environment in 2016.

This plan is prepared by a national working group composed by representative of federal experts in animal health, federal and regional experts in environment, the University of Ghent and NGO's actively involved in the monitoring and surveillance of Bsal.

This plan will formalize a coordinated approach for addressing Bsal. Its current structure addresses the following issues :

- Major Findings (Bsal : Origin and pathogen characteristics / Diagnosis)
- Overview of population of salamanders and newts in Belgium
- Role of salamanders and newts in the ecosystem

- Stages of invasion of Bsal in wild population of salamanders and newts
    - ✓ In Belgium
    - ✓ In the European Union
- Stages of invasion of Bsal in captive population of salamanders and newts
    - ✓ In Belgium
    - ✓ In the European Union
- Legislation applicable
- Disease surveillance in Belgium
    - ✓ Passive surveillance of Bsal
    - ✓ Active surveillance of Bsal
    - ✓ Monitoring of wild and captive population of salamanders and newts
- Disease management in Belgium
    - ✓ In the field
    - ✓ In captive population of salamanders and newts
- Trade restrictions (tbc)
- Conservation and recovery
- Communication
- Recommended Research Topics
- Assessment of the plan
- Estimated budget and roadmap
- Bibliography

Annually an assessment of the plan is expected in order to reevaluate the relevancy of its actions, as new information becomes available.

Annexe I - le protocole d'hygiène au niveau de la Région wallonne

Inventaires faunistiques - appel à précautions !

A. La Chytridiomycose

Depuis plusieurs années, un champignon est connu comme étant pathogène pour une série d'espèces de batraciens de par le monde, Batrachochytrium dendrobatidis (B.d.). Maintenant répandu sur une bonne partie de la planète, il a notamment fait disparaître 40 % des espèces dans certaines régions d'Amérique centrale. Il semble toutefois que la virulence de la souche présente en Wallonie est assez faible ; cette situation pourrait néanmoins évoluer, au gré de possibles mutations.

Bien que déjà mise en évidence en Wallonie, cette maladie n'a jamais été recherchée à large échelle. Il est possible, voire probable, qu'elle soit assez répandue, à l'instar de sa répartition en Flandre et aux Pays-Bas où 5 % de 2700 animaux analysés se sont révélés positifs.

B. Nouvelle menace spécifique à la salamandre tachetée et aux tritons

En automne 2013, une équipe universitaire de Gand a identifié un nouveau pathogène, proche parent du premier, le Batrachochytrium salamandrivorans (B.s.). Ce champignon, plus spécifique aux salamandres mais aussi transmissible aux tritons est responsable de la quasi disparition de la population hollandaise de salamandres tachetée (chute de 96 % en 3 ans).

Voir en particulier www.sosvuursalamander.nl ou l'écho des rainettes sur la salamandre : http://www.natagora.be/fileadmin/Rainne/Echo_des_rainettes/EchodesRainettes13.pdf).

En décembre 2013, la présence de ce champignon a été découverte dans un bois du côté d'Eupen. En avril 2014, elle a été confirmée dans un deuxième site wallon à proximité du barrage de Robertville. Si des mesures de précaution ne sont pas prises, il semble évident qu'on n'en soit qu'aux prémices d'une épizootie (épidémie animale) qui pourrait toucher les salamandres et les tritons à l'échelle de toute la Wallonie, ainsi que des régions voisines.

L'extrême virulence de ce pathogène doit inciter à la plus grande prudence afin de tenter d'éviter une propagation large et incontrôlable de la maladie.

Le mode de dispersion de Batrachochytrium salamandrivorans est encore incertain. Le champignon peut probablement être déplacé par des matériaux (chaussures, pneus de véhicules en particulier…) qui ont été en contact avec le champignon via de la boue.

De façon générale, la prudence doit être de mise lors de la visite de sites hébergeant des salamandres et tritons, en particulier lors de visites de plusieurs sites ou sous-sites successivement.

C. Mesures de précaution à appliquer lors de la visite de plans d'eau où se reproduisent des amphibiens (risque de propagation de *Batrachochytrium*).

Il est important de désinfecter tout le matériel ayant été en contact avec l'eau ou avec de la boue sur un site de reproduction d'amphibiens avant de visiter un nouveau site. Pour les personnes qui se déplacent fréquemment dans les milieux occupés par la salamandre (bois et forêts), il est également nécessaire de veiller à désinfecter ou sécher ses bottes avant l'accès au site pour éviter tout risque d'introduction d'un pathogène dans le site.

Comment nettoyer ce matériel ?

- épuisettes, nasses, bottes :

- enlever tous les résidus végétaux, les dépôts de boue et autres sédiments ;

- désinfecter à l'aide **d'une pulvérisation abondante au Virkon** (solution avec 1% de Virkon) ou d'alcool à 70 °;

- laisser sécher 5 minutes ;

- rincer en s'assurant que l'eau de rinçage ne prend pas la direction d'une eau de surface. Si les matériaux ne peuvent être nettoyés sur place, les mettre dans des sacs ou des bacs en plastique et les ramener chez soi. L'usage de plusieurs jeux de matériel de terrain peut grandement faciliter la vie des observateurs visitant plusieurs sites la même journée.

- mains : Pour la manipulation d'amphibiens, travailler à mains nues en désinfectant ses mains avec un gel de solution alcoolique en quittant un site ; ou utilisation de gants en vinyle jetables.

Bien faire attention que le produit de pulvérisation ne soit pas en contact avec les amphibiens. Ne jamais jeter la solution désinfectante dans la nature mais l'évacuer dans un réseau d'égouttage relié à une station d'épuration.

Remarquons qu'un séchage complet et prolongé du matériel suffit pour prévenir la dispersion de la chytridiomycose, toutefois, le protocole de désinfection permet d'éviter également la dispersion des ranavirus qui sont capables de résister pendant plus de 200 jours à la dessiccation.

REM : la solution de Virkon perd ses propriétés après quelques semaines (elle perd de sa couleur rosée) et doit alors être renouvelée. Il est conseillé d'en préparer une quantité limitée correspondant à 2-3 semaines d'utilisation (environ 1 l).

Afin d'éviter tout risque de propagation via les pneus des véhicules, il est préférable de parquer son véhicule sur un espace en dur plutôt que sur un chemin de terre friable ou sur le bas-côté.

D. Mesures de précaution à appliquer lors de la visite de massifs infectés par B.sal.

Désinfection à la sortie du massif contaminé, à l'aide de Virkon, des bottes ou de tout élément ayant été au contact avec le sol.

E. Participation au suivi de la maladie

Lors de la découverte de salamandres mortes (hors causes apparentes comme le trafic routier ou la noyade causée par d'autres amphibiens), il vous est demandé :

- de désinfecter vos bottes au sortir de la zone où vous avez trouvé les animaux ; à défaut, laisser sécher vos bottes/chaussures pendant une semaine avant de les porter à nouveau en forêt.
- De se désinfecter les mains après la manipulation ;
- de mettre chaque individu dans un sac plastique individuel ;
- d'accompagner chaque sachet de la mention du lieu précis, de la date de la découverte et du nom de l'observateur accompagné de ses coordonnées (étiquette ou papier) ;
- de mettre les sachets dans un congélateur en attendant leur acheminement vers l'université de Gand qui réalisera les analyses ;
- de prévenir Marc Herman, Inspecteur général au DEMNA qui assure la collecte et le transfert des échantillons : marc.herman@spw.wallonie.be .

Annexe II


S. Pirotte

Des cadavres de Salamandre ont été découverts dans cette forêt. La cause de leur mort est un champignon sans danger pour l'homme et les autres animaux de la forêt, mais très virulent pour les salamandres, qui meurent quelques semaines après avoir été infectées.

Pour **éviter la propagation de la maladie** dans d'autres forêts, **merci de rester sur les chemins** et de **laisser sécher vos chaussures une semaine** avant de les réutiliser en forêt.

Mehrere tote Salamander sind in diesem Waldstück aufgefunden worden. Ihr Tod ist auf einen Pilz zurückzuführen, der für den Menschen und die anderen Waldtiere zwar keine Gefahr darstellt, aber für den Salamander äußerst infektiös ist. Die Salamander sterben wenige Wochen nach der Infektion.

Um die weitere Verbreitung dieser Krankheit zu vermeiden, möchten wir Sie bitten, **auf den Wegen zu bleiben** und **Ihre Schuhe vor der nächsten Benutzung im Wald während einer Woche trocknen zu lassen**.

In dit bos werden reeds meerdere dode salamanders aangetroffen. Zij sterven wegens de aanwezigheid van een schimmel. Die schimmel is zonder gevaar voor de mens, en eveneens voor de andere dieren in het bos, maar vormt een levensgevaarlijke bedreiging voor de salamanderpopulatie. Salamanders sterven immers binnen een paar weken na besmet te zijn geraakt.

Om te voorkomen dat deze ziekte zich naar andere bossen verspreidt, wordt u vriendelijk verzocht **de paden niet te verlaten** en **uw schoenen één week te laten drogen voor** u ze opnieuw draagt om boswandelingen te maken.

www.sosvuursalamander.nl

Wallonie

Annexe III - le protocole d'hygiène au niveau de la Région flamande (en néerlandais)

Agentschap voor Natuur en Bos

WILDEDIERENZIEIEN

Preventie van de verspreiding van chytridiomycose bij de vuursalamander

VEILIGHEIDSVOORSCHRIFTEN VELDWERKZAAMHEDEN

Amfibieënpopulaties kennen wereldwijd een dramatische terugval en zijn in hun voortbestaan bedreigd. De infectieziekten chytridiomycose en ranavirose spelen hierbij een sleutelrol. Er zijn geen aanwijzingen dat deze infectieziekten schadelijk zijn voor de mens. De ziekteverwekker van chytridiomycose is de schimmel *Batrachochytrium dendrobatidis*, de ziekteverwekker van ranavirose zijn ranavirussen. Deze ziekteverwekkers komen ook in België voor. Wat de impact is op de Belgische amfibiepopulaties is vooralsnog onbekend.

Recent (december 2013) werd in België ook de aanwezigheid van *Batrachochytrium salamandrivorans* vastgesteld. Deze recent beschreven schimmel bracht de vuursalamander in Nederland op de rand van uitsterven. Het voorkomen van deze schimmel in België is zorgwekkend gezien de potentiële negatieve impact op de Belgische vuursalamanderpopulaties.

Hoe *Batrachochytrium salamandrivorans* zich verspreidt tussen locaties kon nog niet worden achterhaald. Vermoedelijk kan de schimmel verspreid worden door verplaatsingen van materialen (fuik, schepnet, laarzen, …) die in contact zijn gekomen met de schimmel, door het verspreiden van besmet water of door verplaatsingen van besmette amfibieën. Omdat menselijke activiteiten potentieel een bron van verspreiding van de sporen van de schimmel zouden kunnen vormen is het noodzakelijk dat er bij veldwerkzaamheden in en rond bosgebieden en poelen volgens een veiligheidsprotocol gewerkt wordt om overdracht van besmetting tussen bosgebieden en poelen te voorkomen.

Hieronder wordt aangegeven hoe **op een veilige manier** veldwerkzaamheden moeten worden uitgevoerd zonder dat de verspreiding van deze schimmel en andere pathogenen in de hand worden gewerkt. Deze **bioveiligheidmaatregelen** dienen genomen te worden bij **ALLE OPEENVOLGENDE veldwerkzaamheden in verschillende amfibieënhabitats in en rond bosgebieden en poelen, ongeacht of zij gericht zijn op activiteiten met betrekking tot fauna en flora of niet.** Het opvolgen van eenvoudige desinfectiemaatregelen voor kleding en veldmaterialen is immers zeer effectief in het verlagen van het verspreidingsrisico van de schimmel.

ALGEMENE BIOVEILIGHEIDSMAATREGELEN

Hanteer amfibieën alleen als het echt noodzakelijk is.
Amfibieën moeten altijd op de vangstlocatie worden losgelaten.
Als handen in contact komen met water of met amfibieën is het aangeraden wegwerphandschoenen (poederloos) te dragen. Gebruik hiervoor uitsluitend vinylhandschoenen want latexhandschoenen kunnen sterfte veroorzaken bij amfibieën. Indien geen wegwerphandschoenen worden gedragen, dienen de handen bij het verlaten van een locatie ontsmet te worden met een ontsmettende handgel.
Alle materialen die tussen verschillende locaties gebruikt worden, moeten worden gereinigd en ontsmet.
Als u het water in bent gelopen, of contact hebt gemaakt met water of modder, moeten schoenen, laarzen, waadpak, ... grondig worden gereinigd en ontsmet.
Er is nog geen bewijs dat de schimmel verspreid wordt door autobanden, maar het is wel goed om de auto iets verderop op een verhard pad te zetten en niet op (zachte modderige) ondergrond.
Dode en/of zieke amfibieën waarvan de doodsoorzaak niet op het eerste gezicht kan worden vastgesteld, vormen een hoog risico. Hanteer ze dus enkel met handschoenen.

Hoe materiaal ontsmetten?

- ✓ verwijder plantenresten, modderkluiten etc.
- ✓ spoel met water
- ✓ desinfecteer op onderstaande wijze, op ruime afstand van het oppervlaktewater:
  - maak een 1% Virkon® oplossing en spuit deze oplossing met een handsproeier op alle veldmaterialen, wacht tot de materialen volledig gedroogd zijn alvorens u de materialen weer gebruikt
  - let op dat Virkon zeker niet in direct contact komt met amfibieën, door bijvoorbeeld bakjes die gesproeid worden met Virkon waar vervolgens amfibieën in verzameld worden vooraleer staalname of meting gebeurt. In dergelijk geval moet het materiaal na ontsmetting eerst nagespoeld worden
- ✓ gooi nooit de gebruikte reinigende oplossing in de natuur
- ✓ was handen met een ontsmettende handgel
- ✓ ben je niet in staat om materiaal op de locatie schoon te maken, neem het dan mee in plastic zakken en doe het thuis
- ✓ een verhitting van 30 minuten bij 60°C (dit betekent wel dat het materiaal zelf gedurende 30 minuten 60°C warm moet zijn, dus opwarmtijd werd niet meegerekend) is eveneens een goede manier om materiaal te ontsmetten

ADVIES VOOR CONCRETE ACTIES

Bij **paddenoverzetacties** wordt door elke vrijwilliger per locatie 1 set materiaal (= laarzen, emmer) gebruikt die niet op een andere locatie mag worden gebruikt. Na de werkzaamheden op een locatie worden de handen ontsmet met een ontsmettende handgel of worden de vinyl wegwerphandschoenen verwijderd.

Bij **educatieve projecten** mag slechts 1 zoetwaterlocatie per dag bezocht worden en het materiaal dat hierbij gebruikt wordt, wordt nadien grondig gereinigd en ontsmet.

Bij **inventarisatie van amfibieën** wordt per locatie het materiaal gereinigd en ontsmet alvorens naar een andere locatie wordt gegaan, of er wordt per locatie een aparte set materiaal (schepnet, fuik, emmer, laarzen) gebruikt. Na ontsmetting dient het materiaal volledig te drogen alvorens opnieuw te gebruiken.

Bij **alle inventarisaties en werkzaamheden in amfibieënhabitats** met materiaal dat wordt gebruikt voor kanalen, rivieren, beken en stilstaand water, moet alle materiaal grondig gereinigd en ontsmet worden voor én na de werkzaamheden in amfibieënhabitat.

Neem bij het aantreffen van dode amfibieën waar de doodsoorzaak niet meteen duidelijk is (vb predatie, verkeerslachtoffers, verdrinking) contact op met de UGent: meldpuntziekeamfibieën@ugent.be. Intacte kadavers zonder traumatische doodsoorzaak (dus géén aangereden amfibieën of kadavers die zijn aangepikt door dieren) die bovendien relatief vers zijn, worden best ingezameld voor analyse.

➔ Verpak in dat geval het dier in een dubbele plastic zak en stockeer het in de diepvries. Op www.natuurenbos.be/wildedierenziekten vind je de fiche terug die dient ingevuld te worden om het kadaver te laten onderzoeken, evenals de contactgegevens van de UGent die de analyses in opdracht van het ANB uitvoert.

Een kadaver kan naar de UGent worden gebracht door de particulier zelf of kan worden afgezet bij een particuliere dierenarts waar vervolgens een koerier van Diergezondheidszorg Vlaanderen in opdracht van ANB het kadaver komt ophalen. Let wel, enkel kadavers vergezeld van de volledig ingevulde fiche worden aangenomen voor analyse.

Het ANB financiert het transport door Diergezondheidszorg Vlaanderen en eveneens de medewerking van de dierenarts (kostenstaat dierenarts zie www.natuurenbos.be/wildedierenziekten).

Voor meer informatie of bij vragen kan je terecht op www.natuurenbos.be/wildedierenziekten en bij muriel.vervaeke@lne.vlaanderen.be

Deze veiligheidsvoorschriften werden door ANB opgesteld in februari 2014 op basis van het RAVON-advies in Nederland en in samenwerking met:


Agentschap voor
Natuur en Bos


Hyla
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CZECH REPUBLIC / RÉPUBLIQUE TCHÈQUE

THE PREVENTION AND CONTROL OF THE *BATRACHOCHYTRIUM SALAMANDRIVORANS* CHYTRID FUNGUS IN THE CZECH REPUBLIC: NATIONAL REPORT

As regards the implementation of the Recommendation of the Standing Committee of Bern Convention No. 176 (2015) on the prevention and control of the *Batrachochytrium salamandrivorans* (*Bsal*) chytrid fungus, it is namely the surveillance and preparation of action plans for disease control that were initiated in the Czech Republic.

The activities are facilitated by active collaboration of the Ministry of the Environment of the Czech Republic with research institutions that provide necessary know-how and technical facilities, particularly the Faculty of Environmental Sciences, Czech University of Life Sciences in Prague (Dr. Jiří Vojar and Dr. Milič Solský) and the Faculty of Veterinary Hygiene and Ecology, University of Veterinary and Pharmaceutical Sciences Brno (Dr. Vojtech Baláž). Next, possible collaboration in surveillance of the disease within exotic Caudates was discussed with the State Veterinary Administration, which is aware of the present threat and plans to conduct stricter controls of imported amphibians. For detailed description of specific activities, see below.

Monitoring of the pathogen

The Czech Republic is a country with relatively high species diversity of Caudate amphibians, lying in the proximity of previously proven *Bsal* occurrence in Germany. Furthermore, the country, and especially the capital city, Prague, hosts a lively and numerous community of exotic pet keepers or pet shops and large exotic pet fairs take place on regular basis. Surroundings of such large cities could represent areas with high risk of disease spill-over from captive exotic amphibians to wild populations of native amphibians. Therefore, Prague was selected as the first focal area for *Bsal* surveillance efforts in wild population of Caudate amphibians. The monitoring was established during September 2015. Until now, 118 swab samples of wild adults of *Salamandra salamandra* were collected from about 10 localities within the Prague's urban area (with negative results) and 32 samples of *Lissotriton vulgaris* from one locality situated in the city centre of Prague (the DNA analysis of the samples has not yet been made). Furthermore, about 200 individuals of at least 20 species across the Czech Republic from different types of captive collections (zoos, pet trades, and private breeders) were sampled. Part of these samples (45) has been already analysed, fortunately with negative results, i.e. they are *Bsal* free.

In summary, approximately 350 samples were collected for the *Bsal* surveillance, with over 150 already analysed for the presence of the pathogen. None of the sample analyses gave positive result. Additionally, further screening for *Bsal* that will use at least 60 samples from wild population and at least 100 samples from captive amphibians is planned, and the sum of processed samples will thus pass 500 by the end of the year 2016.

Raising public awareness

Initiatives to raise public awareness were focused on following target groups that can play important role in the spread of the disease:

- ***Pet keepers and breeders***

Main breeders of amphibians in the country were contacted and mutual cooperation was established, including checking the health status of kept amphibians, especially of newly imported animals. A workshop was organised to provide the breeders with information on the disease. Special attention is paid to the urgent need to prevent any spill-over of the pathogen from captive amphibian collections to wild populations.

- ***Experts in the field of nature conservation***

The topic of amphibian diseases was presented during the annual meeting of experts involved in mapping and population surveillance of amphibians and reptiles, organised by the Nature Conservation Agency of the Czech Republic. The presentation focused on the need of using various options of disinfection and quarantine procedures in order to minimise the risk of spread of pathogens on sites visited during fieldwork.

- ***Professionals and general public***

The case and present situation concerning the *Bsal* surveillance was presented on local scientific conferences, as part of classes on both universities involved, during special meetings, etc. It is previewed that various public media will be involved with the aim of increasing awareness about the disease, including publishing an article in local popular science magazine during the autumn 2016.

Action plan

An action plan for *Bsal* prevention and control was prepared thanks to joined effort of all subjects involved.

The main aim of the prepared methodology is to deal with amphibian conservation in a complex way, following the Recommendation No. 176. It will provide guidelines and procedures that will effectively help with prevention and control of amphibian diseases in practical conservation. The methodology shall be designed as universally useful in disease control and with the aim of dealing not only with *Bsal*, but also with other important emerging pathogens e.g. *Batrachochytrium dendrobatidis* or Ranaviruses.

Specific (partial) goals:

1) Establishing information sharing and awareness raising mechanisms among state nature conservation bodies (mainly ME CR, NCA CR), public administration offices (regional and municipal authorities), customs, Czech Environmental Inspectorate (CEI), research organisations, amphibian keepers and breeders (zoos, animal rescue centres, private owners, pet shops and other vendors, etc.) as well as professionals and general public. These will include, among others, dedicated website, lectures and presentations, contact with public media or dissemination of information brochures.

2) Performing continual systematic surveillance of *Bsal* in the Czech Republic in wild and captive populations of amphibians (especially of rare and endangered species in zoos, private collections, etc.) that will be linked with detection of other emerging pathogens, if their presence is suspected.

3) Setting up of a mobile lab for fast pathogen detection in field conditions to be used in cases of observed unexpected mortalities in both wild populations and captive collections (linking several methods of disease detection including specialised autopsies, histological examination and molecular based analyses). This shall also include the development, testing and implementation of fast and reliable detection methods.

4) Development of procedures to deal with critical situations caused by pathogen emergence and mass mortality events in wild populations. Such procedures will involve preparation of facilities and staff training for ex-situ temporary keeping of animals from affected population allowing proper quarantine and veterinary treatment as well as studying the disease. Such ex-situ populations will provide source of animals for future re-introduction efforts in case of local extinction. In addition, it will include guidelines for the treatment of sick animals in captivity.

EUROPEAN UNION / UNION EUROPÉENNE

FOLLOW-UP OF RECOMMENDATION NO. 176 (2015) ON THE PREVENTION AND CONTROL OF THE *BATRACHOCHYTRIUM SALAMANDRIVORANS* CHYTRID FUNGUS

NATIONAL REPORT BY THE EUROPEAN UNION

As a follow-up to this Recommendation, the European Commission has been exploring possibilities for various potential policy responses, including for improved controls on imports of amphibian species infected by this pathogen (Bsal).

Member States can currently regulate imports from non-EU countries from an animal health point of view with national rules under Council Directive 92/65/EEC. However, intra-EU trade of salamanders is harmonized and cannot be restricted with national rules.

As regards applying biosafety to field work, movement controls in infected areas and raising awareness for this issue, the Commission promoted these on several fora to the Member States (e.g. to the veterinary experts of the Committee on PAFF[2], to the Chief Veterinary Officers of the Member States) where they agreed to these and signalled appropriate follow-up.

The European Parliament and the Council adopted a regulation on transmissible animal diseases (Regulation (EU) 2016/429, the so-called “Animal Health Law”) which entered into force in April, 2016. The new regulation will allow for measures to be adopted for wild animal species. However, it will be applicable only in 5 years, from April 2021, and the assessment of many diseases and their possible subsequent listing for their control will be done in the coming years. A mandate for the relevant scientific opinion on Bsal has already been sent to the European Food Safety Authority (EFSA). It also includes a request for a technical assistance by EFSA staff with shorter deadline to explore the relevance of possible EU safeguard measures under the current animal health rules.

The Commission services are also exploring other possibilities to restrict imports of amphibian species into the EU. In particular, whether such imports could be restricted through including these exotic amphibian species in the Annexes to the Wildlife Trade Regulations.

The Directorate-General for the Environment has commissioned a study to review the risk posed by importing Asiatic species of salamanders and newts into the EU[3]. This report was presented for information to the meetings of the wildlife trade Scientific Review Group on the 27th of June, and also to the Group of Experts of the Competent CITES Management Authorities on 28th of June, 2016.

In parallel, the European Parliament has requested the European Commission to carry out a pilot project on mitigating new infectious amphibian diseases in the EU. On the 30th of June, 2016, a call for tender entitled "Mitigating a new infectious disease in salamanders to counteract a loss of European biodiversity" was published for a service contract of three years duration. The work to be undertaken through this contract will identify the current extent and spread of the disease in Europe, establish an early warning system, develop emergency action plans for the short term and provide proof of concepts for sustainable long-term mitigation measures.

The deadline for the receipt of the tenders has passed and now the Commission services are carrying out the selection procedure of the contractor.

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[2] http://ec.europa.eu/food/animals/health/regulatory_committee/index_en.htm

[3] http://ec.europa.eu/environment/cites/pdf/reports/Review%20of%20risk%20posed%20by%20importing%20Asiatic%20salamanders%20into%20the%20EU%20public.pdf

FRANCE / FRANCE

RECOMMANDATION N° 176 (2015) DU COMITÉ PERMANENT, ADOPTÉE LE 4 DÉCEMBRE 2015, SUR LA PRÉVENTION ET LE CONTRÔLE FACE AU CHAMPIGNON CHYTRIDE *BATRACHOCHYTRIUM SALAMANDRIVORANS*

Rapport des autorités françaises

ETAT DES LIEUX EN FRANCE SUR LA CHYTRIDIOMYCOSE

Deux champignons aquatiques pathogènes assez proches, *Batrachochytrium dendrobatidis* et *Batrachochytrium salamandrivorans*, provoquent chez les amphibiens une infection parasitaire inquiétante, la chytridiomycose, qui finit par entraîner la mort des animaux. L'infection se transmet dans l'eau par des cellules flagellées.

Batrachochytrium dendrobatidis est présent en France, mais les seules mortalités qui lui sont attribuées sont observées dans des lacs isolés d'altitude des Pyrénées.

Batrachochytrium salamandrivorans **n'a pas à ce jour été détecté en France**. Originaire d'Asie du sud-est et particulièrement pathogène et virulent, il est identifié en 2013 en Europe et progresse rapidement. Il ne semble affecter que les salamandres et les tritons, alors que les grenouilles et crapauds testés sont résistants. Il est responsable de mortalité massive de ces espèces aux Pays-Bas (la Salamandre tachetée est particulièrement impactée : 96% en déclin). Il a été repéré en Allemagne et en Belgique et identifié le 2 mai 2016 sur la commune de Dinant en Belgique à seulement 16 km de la frontière française (Givet).

I. LA FRANCE S'EST INVESTIE SUR LA PRÉSERVATION DES AMPHIBIENS ET SUR LES MALADIES ÉMERGENTES QUI LES AFFECTENT.

La protection des amphibiens en France

Les amphibiens sont des espèces particulièrement menacées. Selon la Liste rouge des espèces menacées en France actualisée en 2015, 8 espèces d'amphibiens sur 35 sont menacées sur le territoire métropolitain. La tendance d'évolution des populations est au déclin pour 60 % des amphibiens.

Les causes de ce déclin sont la perte ou l'altération de leurs habitats et un certain nombre de maladies. Ce peut être des infections bactériennes, des infections fongiques, des infections virales ou des infections dues à des protozoaires.

Rappel sur la protection réglementaire des amphibiens en France et sur les plans nationaux d'actions en leur faveur

Conformément au code de l'environnement (articles L. 411-1 et R. 411-1 à R. 411-5), des arrêtés interministériels imposent des mesures de protection de nombreuses espèces de la faune et de la flore sauvages en raison d'un intérêt scientifique particulier ou des nécessités de la préservation du patrimoine biologique.

L'arrêté du 19 novembre 2007 fixe les listes des amphibiens et des reptiles protégés sur l'ensemble du territoire et les modalités de leur protection. Dans cet arrêté, les mesures de protection sont variables selon les espèces : protection des œufs, des nids et des individus et/ou des sites de reproduction et des aires de repos des animaux, interdiction de perturbation intentionnelle des animaux.

Figurent en particulier parmi les espèces protégées en France au moins toutes les espèces d'amphibiens et de reptiles qui sont mentionnées à l'annexe IV de la directive européenne (n° 92/43 du 21 mai 1992) concernant la conservation des habitats naturels ainsi que de la faune et de la flore sauvages.

En outre, les espèces de vertébrés protégées menacées d'extinction et dont l'aire de répartition excède le territoire d'un département font l'objet de l'arrêté du 9 juillet 1999. Font partie de ces espèces, pour les reptiles, le Pélobate brun, le Crapaud vert, la Grenouille des champs et l'Emyde Lépreuse. Pour ces espèces, les dérogations à leur protection stricte sont accordées par le ministre chargé de la protection de la nature.

S'il y a destruction d'espaces les abritant, particulièrement pour des travaux d'intérêt public, des mesures de compensation doivent être appliquées (déplacement d'individus, création d'habitats spécifiques…).

Dans le cadre de la stratégie nationale pour la biodiversité et dans l'objectif de maintenir une bonne qualité écologique de son territoire, notamment par la sauvegarde des espèces les plus menacées, un outil complémentaire au dispositif législatif et réglementaire protégeant les espèces a été institué (article L.414-9 du Code de l'environnement) : ce sont les plans nationaux d'actions (PNA) en faveur des espèces menacées, qui accompagnent et hiérarchisent les actions de conservation développées sur le terrain, généralement pour une durée de cinq ans.

Trois plans nationaux d'actions (PNA) sont mis en œuvre en France sur des espèces d'amphibiens (Sonneur à ventre jaune, 2011, Crapaud vert, 2014, Pélobate brun, 2014).

Une action spécifique est consacrée à la prévention des maladies infectieuses et émergentes et notamment la chytridiomycose. Une plaquette d'information conjointe aux 3 PNA prévoit d'informer les acteurs concernés, le grand public, mais aussi les personnes réalisant des suivis de populations d'amphibiens ou participant à des actions de gestion des habitats. Ces personnes sont en effet susceptibles de favoriser la propagation des chytrides et doivent respecter un protocole de désinfection.

Les actions de surveillance et de prévention des maladies affectant les amphibiens menées en France

Les experts scientifiques (Laboratoire d'écologie alpine, Centre d'Ecologie Fonctionnelle et Evolutive-Centre National de la Recherche Scientifique, Société herpétologique de France) se sont précocement inquiétés de la diffusion rapide des champignons pathogènes *Batrachochytrium dendrobatidis* et *Batrachochytrium salamandrivorans* dans les populations d'amphibiens et notamment de salamandres et de tritons.

Il s'est agi prioritairement de connaître la répartition de la chytridiomycose sur le territoire français et les facteurs de risque. Un programme d'études et de surveillance des maladies des amphibiens a été initié en 2008 par le Parc naturel régional Périgord-Limousin et le Laboratoire d'écologie alpine. Il a été intégré au programme de recherche européen *Risk Assessment of Chytridiomycosis to European Amphibians* (RACE) lancé en 2009 qui vise à faire un point épidémiologique sur la maladie en Europe à partir de nombreux prélèvements biologiques effectués sur toutes les espèces d'amphibiens.

Un certain nombre de structures gestionnaires d'espaces naturels ont été sollicitées dans le cadre de ces programmes et se sont impliquées pour réaliser des prélèvements sur le terrain avec participation aux frais d'analyses : un parc national, un parc naturel régional[4], des réserves naturelles, des conservatoires, des conseils généraux, des associations de protection de la nature. Des études épidémiologiques ont été menées (Pyrénées, Alpes, Jura, …) mais très localisées. Les recherches sont en cours par un consortium de laboratoires français, allemands, anglais, espagnols et suisses.

Dans cette démarche de surveillance des maladies des amphibiens, un site WEB dédié à la chytridiomycose a été développé en 2010 (« www.alerte-amphibien.fr », http://www.alerte-

[4] Parc national du Mercantour, Parc naturel régional Périgord-Limousin

amphibien.fr/chytridiomycose.html). D'une part il permet la déclaration d'observation d'animaux malades ou morts avec une fiche de signalement à compléter et, dans le cas de mortalités importantes, de faire procéder à des analyses[5]. D'autre part le site propose, en termes de prévention, un protocole d'hygiène qui vise à limiter la dissémination de la chytridiomycose lors d'interventions sur le terrain http://www.alerte-amphibien.fr/images/file/Protocole%20chytridiomycose%20Dejean%20et%20al.pdf. Ce protocole répond au point 1 de la recommandation n°176.

L'Office National des Forêts (ONF), gestionnaire des forêts et d'espaces naturels publics, a mobilisé ses équipes de terrain pour assurer une veille sanitaire sur cette maladie, notamment dans le nord-est de la France depuis l'alerte de l'été 2016. Une large diffusion du protocole d'hygiène cité ci-dessus a été faite ; il est d'ores et déjà disponible sur l'intranet de l'ONF et est en cours de mise en ligne sur son site Internet. Il s'appuie par ailleurs sur les réseaux naturalistes, parmi lesquels le réseau « herpétofaune » (dans le cadre notamment d'une convention cadre et de conventions annuelles avec la Société herpétologique de France). Outre cette action de surveillance et de prévention dans les espaces qu'il gère, l'ONF est animateur des trois plans nationaux d'actions mentionnés dans l'encadré ci-dessus. Il prévoit de produire dans les prochains mois le guide relatif aux maladies des amphibiens annoncé dans les PNA Pélobate brun et Crapaud vert : http://www.onf.fr/pnaa/sommaire/pnaamphibiens-2/etat-natio/20150317-161502-423078/@@index.html et http://www.onf.fr/pnaa/sommaire/pnaamphibiens-2-2/etat-natio/20150317-160745-156023/@@index.html.

II. LE VECTEUR PRINCIPAL SOUPÇONNÉ DES CHAMPIGNONS PATHOGÈNES EST TRÈS PROBABLEMENT LE COMMERCE INTERNATIONAL D'ANIMAUX DE COMPAGNIE. LA MALADIE PEUT ÉGALEMENT AVOIR ÉTÉ INTRODUITE PAR CERTAINES ESPÈCES EXOTIQUES VECTRICES NON INFECTÉES.

L'action menée au niveau de l'Union européenne et des conventions internationales, en termes de stratégie sur la santé animale et en termes de commerce des animaux sauvages

Le Conseil environnement de l'Union européenne examine actuellement l'inscription du champignon *Batrachochytrium salamandrivorans* dans la liste des maladies du Règlement (UE) 2016/429 du Parlement Européen et du Conseil du 9 mars 2016 relatif aux maladies animales transmissibles et modifiant et abrogeant certains actes dans le domaine de la santé animale («législation sur la santé animale»), mais le Règlement ne sera applicable que le 21 avril 2021.

La Convention sur le commerce international des espèces de faune et de flore sauvages menacées d'extinction (CITES) s'est saisie du problème, notamment lors des comités scientifiques et comités d'experts. Il s'agit de restreindre les possibilités d'importation de salamandres et de tritons en inscrivant ces espèces risquant de faire entrer le champignon à l'annexe B de la CITES listant les espèces interdites d'importation. Les parties tendent à l'inscription de toutes les espèces d'urodèles d'Asie dans l'annexe B mais le commerce ne serait pas stoppé pour autant.

Le Conseil environnement de l'Union européenne examine l'inclusion des espèces responsables de l'introduction du champignon dans les espèces listées dans les annexes du Règlement (CE) nº 338/97 du Conseil du 9 décembre 1996 relatif à la protection des espèces de faune et de flore sauvages par le contrôle de leur commerce, portant notamment application uniformément dans l'ensemble des pays de l'UE de la CITES. Mais la révision des annexes ne sera possible qu'en 2017.

Les autorités françaises soutiennent en tout état de cause ces démarches.

Les actions menées en France en matière de faune sauvage captive et de commerce des animaux sauvages

En ce qui concerne la faune sauvage captive, une information sur les risques sanitaires pour les populations d'amphibiens a été faite en septembre 2016 au réseau des parcs zoologiques accueillant

[5] Environ 400 signalements de mortalité ont été collectés depuis 2010. Les analyses sont en cours. Le site a permis de découvrir les mortalités de grenouilles rousses causées par un virus dans les lacs de montagne du Mercantour.

des spécimens de ces espèces de même qu'à la filière professionnelle de la vente et de présentation au public. Il leur a été demandé à cette occasion de faire remonter au ministère chargé de l'environnement des informations sur l'importance du commerce de ces animaux afin de mieux connaître les risques d'introduction de cette maladie grave des amphibiens sur le territoire français par le biais de cette activité, ainsi que tout autre élément sur la maladie.

Le vecteur « espèces exotiques envahissantes » en France

On peut citer comme porteur sain de la chytridiomycose la Grenouille taureau qui est inscrite sur la liste des espèces exotiques envahissantes de la Commission européenne prise en application du Règlement (UE) n 1143/2014 du Parlement européen et du Conseil du 22 octobre 2014 relatif à la prévention et à la gestion de l'introduction et de la propagation des espèces exotiques envahissantes.

Le programme LIFE, volet nature et biodiversité, « Control Stratégies Of Alien invasive Amphibians in France (CROAA) 2016-2022 » porté par la Société Herpétologique de France vise à identifier une stratégie optimale pour lutter contre les amphibiens exotiques envahissants. C'est la direction régionale de l'environnement, de l'aménagement et du logement Nouvelle Aquitaine (ex Aquitaine-Limousin-Poitou-Charentes) qui coordonne le financement Etat. Il concernera 2 autres régions (Centre-Val de Loire et Pays de la Loire) et contribuera à mettre en œuvre en France le Règlement européen.

L'information et la sensibilisation sur la chytridiomycose

Les Directions régionales du ministère chargé de l'environnement les plus proches de la Belgique et de l'Allemagne (Grand Est et Hauts de France) ont été alertées sur la proximité de la maladie et sur la facilitation à obtenir des autorisations de ramassage des animaux morts pour établir un diagnostic en cas de découverte.

Les études sur la biologie, l'épidémiologie et l'atténuation de *Batrachochytrium salamandrivorans* et sur la biologie de la conservation des salamandres et des tritons d'Europe, notamment pour améliorer les connaissances sur la démographie et la dynamique des populations

Des études sur les chytrides sont menées non seulement en métropole, mais aussi en Outre-mer, notamment en Guyane française.

Toutefois, il est certain que face à la menace du pathogène qui affecte plus spécifiquement les Salamandridés (salamandres et tritons), de nouvelles études et dispositions doivent être prises.

La coordination avec les pays voisins

Le 44e Congrès de la Société herpétologique de France aura lieu en Belgique (deuxième congrès herpétologique franco-belge), ce sera aussi l'occasion d'échanger avec les experts belges sur ce sujet.

Un plan d'actions relatif à la chytridiomycose

Il n'y a aucun moyen d'atténuation des effets et de traitement des amphibiens contre cette infection. Il convient toutefois de retarder, voire d'empêcher l'apparition de la maladie en France.

Un plan d'actions est en cours de rédaction au sein du ministère chargé de l'environnement, qui répondra au point 7 de la recommandation n°176. Il reprendra un certain nombre des actions citées dans ce rapport et visera une large information des acteurs concernés et du public. Il devrait être finalisé avant la fin de l'année 2016.

GERMANY / ALLEMAGNE

National report on German measures to implement Recommendation No 176 (2015) of the Bern Convention

Trier University and the Technische Universität Braunschweig organised an initial round table on 2 February 2015 which allowed all nature conservation authorities, biological stations and environmental associations active in the border region of the Netherlands, Belgium and Germany to meet with scientists and the Federal Agency for Nature Conservation (BfN) at the offices of the BfN in Bonn.

The participants discussed and finally agreed on the first strategy on education, training and preventive measure for the whole of North Rhine-Westphalia. For instance, fire salamander populations in the Northern Eifel (NRW) and the Southern Eifel (Rhineland-Palatinate) were examined for Batrachochytrium salamandrivorans (Bsal), and a systematic monitoring of larvae was introduced. This region borders on the sites the Netherlands and Belgium where Bsal had been found before.

Also in 2015, skin swabs were taken for further testing from more than 300 fire salamanders of 16 populations in the Eifel region. Two swabs from animals found at two sites in the area of the Hürtgen Forest near Düren (Northern Eifel) tested positive. Tests were continued in 2016 (Northern and Southern Eifel, and nationwide random tests); at 21 sites, 200 fire salamanders and more than 50 newts (of all four species occurring in Germany) were tested for Bsal with skin swabs. The number of sites with positive test results increased two five, all located in the Northern Eifel region close to the sites were animals had tested positive before. In addition to fire salamanders, specimen of the alpine newt, the smooth newt and the palmate newt tested positive for Bsal.

The intensive monitoring of larvae showed that, compared to previous years, no or only small numbers of fire salamander larvae were found along the many creeks monitored in the Northern and Southern Eifel. Whether there is a connection to the spread of Bsal in the Eifel region can only be surmised at present. Monitoring of larvae is a long-term measure to record local population trends. It also facilitates registering short-term, extreme losses in populations.

As a consequence of the decline in fire salamander populations in the Netherlands and Belgium, a first study on the spread of the fungus affecting wild salamander populations in Germany (Eifel region) was published (Spitzen-van der Sluijs et al. 2016).

In January 2015, a project was launched on the development and testing of conservation strategies for amphibians in Central Europe in view of the new lethal amphibian pathogen Batrachochytrium salamandrivorans (Bsal) in Germany. The project is carried out by the universities of Braunschweig and Trier together with the KARCH in Switzerland and it is funded by the German Federal Environmental Foundation (DBU). The aim of this pilot project is to draw up a comprehensive concept for registering and combating Bsal that will produce quick results. The project will be running for three years and relies mainly on the following three practical approaches:

(i) A large-scale screening of amphibian, and in particular salamander, populations across Germany to determine the spread of Bsal. This is intended as a first step towards setting up a systematic and coordinated monitoring network to record loss of amphibians in Germany including the testing of privately kept salamanders. These tests revealed the first case of an animal in captivity carrying Bsal (Sabino-Pinto et al. 2015). It is important to stress that Bsal has proven to be lethal to all currently known species of fire salamanders (S. salamandra, S. algira, S. infraimmaculata und S. corsica).

(ii) In regions where a spread may be expected or is already occurring (the Eifel, for example), samples will be taken and examined to facilitate a comparison between the period before and after

an expected infection and potential mass mortality rates. This would make it possible to identify resistant specimens and the properties that make them immune to the fungus.

(iii) Compiling a comprehensive collection of samples of skin bacteria from amphibians to be tested for their anti-Bsal properties.

In February 2015, the Trier University published a protocol on hygiene to prevent the spread of pathogens (in particular of Bsal, Batrachochytrium dendrobatidis, Ranavirus) among amphibian populations (https://www.lanuv.nrw.de/fileadmin/lanuv/natur/dokumente/anhang_1_hygieneprotokoll_amphibien.pdf). The protocol is to serve as a guideline in particular for the work of field biologists and for tests carried out under the research project mentioned above. The aim is to establish good practice, for example completely drying and disinfecting the soles of boots or equipment when examinations in semiaquatic habitats have been carried out in the field. The protocol addresses all field biologists carrying out mapping activities in humid habitats (in particular mapping of amphibians in line with the Habitats Directive, but also of dragonflies or habitat types).

In 2015, the Federal Agency for Nature Conservation revised the assessment criteria for national amphibian monitoring under the Habitats Directive and included a note on observing rules for hygiene. North Rhine-Westphalia, so far the only German Land where Bsal was found in a natural environment, also adopted and published the rules for hygiene and announced that they apply to tendered work and services contracts and research projects.

The working group Urodela of the German society for herpetology and terrariatology (Deutsche Gesellschaft für Herpetologie und Terrarienkunde - DGHT) published standard rules for animal owners on how to deal with Bsal (http://www.agurodela.de/Bsal_Halterempfehlung.htm) and a position paper with recommended measures regarding Bsal. This work was coordinated with the authorities and universities involved.

On 23 May 2016, a second round table took place at the offices of the Federal Agency for Nature Conservation. There, representatives from the Federal Environment Ministry, the scientific community, nature conservation authorities of the Länder, biological stations and expert associations discussed open issues on the occurrence and spread of Bsal as well as necessary additional protection measures.

More extensive measures at both national and European level are required to protect amphibians native to Europe and Germany in particular.

Article 13 (1) of the act on animal health (Tiergesundheitsgesetz, TGG) already includes a ban on, for example, the movement within the single market or the import of sick animals or specimen suspected to be ill. The provision applies to all animals and thereby also to all animal diseases that are exclusively transmitted among wild animals. The Federal Ministry of Agriculture notified the customs authorities with information on Bsal accordingly.

In order to keep the disease from spreading further across the EU, Germany considers it necessary to put a stop to the import of animals transmitting the disease into the EU, as proposed by the Environment Council in Luxemburg on 20 June 2016.

Germany calls for the inclusion of Bsal in the list of transmissible animal diseases in the new EU regulation on animal health (Regulation (EU) 2016/429), insofar as the prerequisites for this are met and as soon as the regulation enters into force in April 2021. Suitable and targeted instruments to combat the spread of diseases exist under both national and EU legislation on transmissible animal diseases (bans on import into the EU, limited movement within the EU, monitoring etc.).

In order to bridge the period until the new EU Regulation on transmissible animal diseases enters into force, Germany calls for an immediate ban on imports of all Asian salamander species by listing them in Annex B of Regulation (EC) No 338/97 on the protection of species, as long as no adequate measure have been taken in line with EU animal health legislation. Germany also calls for a restriction of movement within the EU in line with Article 9 (6) of Regulation (EC) No 338/97.

GEORGIA / GÉORGIE

REPLY BY THE MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES PROTECTION OF GEORGIA

Regarding this issue, please be informed that we do not have any specific studies undertaken on this issue yet. However we have contacted scientists working on the salamanders and they do not have any indication of this type of fungus. At the same time they have not observed rapid drop of population which should be present in case of fungus distribution.

Unfortunately this is what we can say at the moment. However scientists are warned of possible threat and asked to inform us in case of any suspicion.

LIECHTENSTEIN / LIECHTENSTEIN

OFFICE OF ENVIRONMENT
PRINCIPALITY OF LIECHTENSTEIN

Your letter	Reference	Contact	Vaduz
07.06.2016	9383	muol	19.07.2016

FOLLOW-UP OF RECOMMENDATION NO. 176 (2015) IN LIECHTENSTEIN

In Liechtenstein the species “fire salamander” is historically absent. The following newt species are present in Liechtenstein: *Salamandra atra, Ichthyosaura alpestris, Triturus cristatus* and *Lissotriton vulgaris*.

The “*batrachochytrium salamandrivorans*” chytrid fungus was not observed so far in Liechtenstein and in areas near to our country. Biosafety rules to field-work are applied and the trapping of native newts requires a respective license. Licenses will only be granted if the field-workers comply with certain biosafety rules, such as letting dry out all materials, which were in contact with water before moving to the next water site.

There is currently no pet trade company located in Liechtenstein. So the risk of introduction of the fungus by pet trade is very small. However, trade by internet cannot be fully excluded. Therefore Liechtenstein has an amphibian monitoring system and every year all important spawn sites are reviewed. Thus a disease outbreak would be detected very fast.

For further questions, please contact me by e-mail (oliver.mueller@llv.li).

Yours faithfully

Oliver Müller
Section Nature and Landscape

MALTA / MALTE

FOLLOW-UP OF RECOMMENDATION NO. 176 (2015) IN MALTA

With reference to Recommendation No. 176(2015) on the prevention and control of the *Batrachochytrium salamandrivorans chytrid* fungus Malta does not have any measures to report on, this in view that we do not have any native salamanders and newts in our Islands and the concerned Recommendation principally lays down preventive measures to counter pathogens effecting such amphibians.

Ms Bonnie Farrugia

for/Mr Darrin T. Stevens, NFP Bern Convention

THE NETHERLANDS / PAYS-BAS

MONITORING OF THE CURRENT STATE OF THE RECOMMENDATION NO. 176 (2015) ON THE PREVENTION AND CONTROL OF THE *BATRACHOCHYTRIUM SALAMANDRIVORANS* CHYTRID FUNGUS IN THE NETHERLANDS

September 14th 2016

The current decline of the fire salamander (*Salamandra salamandra*) in the Netherlands is 99.9%, and there is still no sign of recovery of the affected population. During the past year we have not seen a further spread of the fungus in the Netherlands. The current infected species are *Lissotriton vulgaris* (smooth newt), *Ichthyosaura alpestris* (alpine newt) and the fire salamander.

In response to the voluntary moratorium on the import of Asian newts as proclaimed by the OFI (Ornamental Fish International), the import of Asian newts and salamanders has largely stopped. All large importers that are members of OFI have temporarily stopped this import (www.ofish.org; *OFI recommends an immediate temporary moratorium on trade of firebelly and paddletail newts*). Currently there is not much risk of the introduction of *B. salamandrivorans* via this route, however, this is a voluntary moratorium and several importers have indicated that as soon as there is a demand for these species, they will start the import again. Also, smaller and perhaps private importers remain unnoticed and they might still import possibly infected animals. Concerns are that these smaller importers/private collectors will meet the demand for (Asian) newts and salamanders during the moratorium. From previous years, it is known that especially during spring the demand for salamanders increases in the Netherlands.

But we can conclude that for this moment the self-regulatory mechanism of the major parties associated with the newt and salamander trade works.

With regard to the listed recommendations we note the following:

1. Although no universal biosafety rules have been imposed on to field-work, visitors of breeding sites, nor in the animal trade, several biosafety measures have been taken:
   - There is a field-protocol for people who conduct fieldwork with regard to reptiles, amphibians and fish. This is mandatory for people who work for RAVON (Reptile, Amphibian and Fish Conservation the Netherlands), but there is no national standard which currently is, or can be imposed on people who go out in the field.
   - The zoos that provide accommodation for the remaining native fire salamanders have strict biosafety rules. Other – private – collections/wholesalers/shops have not.
   - Recently Ghent University (Pasmans/Martel Wildlife Diseases research group) has conducted research that contributes to these protocols. This work will be published shortly (Van Rooij et al., in prep.).
   - The Dutch government is contacting the largest nature conservation organisations to raise awareness of the fungus disease in amphibians and to discuss the implementation of this protocol.
2. There is no science-based pre-import risk screening
   - This is a global issue and should be tackled with the traders in the countries of origin and at the European level
   - It is currently not feasible nor is it legal to preventively screen imported animals when they arrive in the Netherlands

3. There are no official restrictions on trade in The Netherlands, however due to the American ban on salamander/newt import, the import of newts and salamanders in the Netherlands has (nearly) come to a standstill as well. This is voluntary and therefore it is likely to be temporary. Currently, the relevant partners are carefully considering the pros and cons and work towards a convenant.
   - We'd like to refer to the conclusions and recommendations of the attached paper by Auliya and co-authors on the global amphibian trade (Biodiversity & Conservation, 2016).
4. There is a long-term monitoring program put in place that uses the approach of 'Early Warning' and 'Rapid Response' in detecting novel outbreaks.
5. There is a long-term monitoring program for the high-risk species.
6. Human-induced spreading is not effectively reduced, but see 1-3.
7. An Action Plan has been written and is kept up-to-date to respond adequately to new insights that in the future might favour the repopulation of the fire salamander in the Netherlands
8. A long-term research project has been awarded to contribute to the knowledge on the pathways, modes of spread and the impact of the fungus on native salamander and newt populations
9. See 8
10. An awareness campaign started in 2016 firstly aiming at the professionals who work in the field (for example for the monitoring of butterflies, water plants or birds). This campaign will be repeated spring 2017.

REFERENCES

Auliya M, García-Moreno J, Schmidt BR, Schmeller DS, Hoogmoed MS, Fisher MC, Pasmans F, Henle K, Bickford D, Martel A. 2016. The global amphibian trade flows through Europe: the need for enforcing and improving legislation. Biodiversity and Conservation:1-15.

Spitzen-van der Sluijs A, Martel A, Asselberghs J, Bales EK, Beukema W, Bletz MC, et al. Expanding distribution of lethal amphibian fungus *Batrachochytrium salamandrivorans* in Europe. Emerg Infect Dis. 2016 Jul [14-09-2016]. http://dx.doi.org/10.3201/eid2207.160109

POLAND / POLOGNE

Report on the measures taken in Poland to implement the Recommendation No. 176 (2015) on the prevention and control of the *Batrachochytrium salamandrivorans* chytrid fungus

General Directorate for Environmental Protection, 2016

We kindly inform the Standing Committee that in Poland *Batrachochytrium salamandrivorans* chytrid fungus hasn't been detected yet.

It is worth mentioning that, according to national law, i.e. art. 120 para. 1 of the Act of 16 April 2004 on Nature Conservation, it is prohibited to introduce alien species of animals, plants or fungi to the environment and to move them within this environment.

As regards introducing restrictions on import, transport and trade of salamander and newts, as a preventive measure against spread of *Batrachochytrium salamandrivorans*, there is a permit required for conducting these activities (art. 56 para. 1 and 2 of the Act of 16 April 2004 on Nature Conservation), however only in relation to native species, which are all under species protection.

Poland takes also into account, that the import to UE of infected salamander and newts may be hampered as a result of actions undertaken under the CITES Convention.

SERBIA / SERBIE

REPORT ON IMPLEMENTATION OF THE RECOMMENDATION NO. 176 (2015) ON THE PREVENTION AND CONTROL OF THE *BATRACHOCHYTRIUM SALAMANDRIVORANS* CHYTRID FUNGUS IN THE REPUBLIC OF SERBIA

Regarding the Recommendation No 176 (2015) on the Standing Committee on the prevention and control of the *Batrachochytrium salamandrivorans* chytrid fungus, we would like to inform Secretariat of the Bern Convention that some prevention and control measures and official procedures have been started and they are in progress in Serbia.

1. The Current Legal Framework, as following:

- The National Strategy on Biological Diversity (2011-2018)
- The Law on Nature Protection (Off Jour of RS, No 36/09 , 88/2010, 91/2010-corr and 14/16)
- The Animal Welfare Law (Off Jour of RS, No 41/09)
- Rulebook on proclamation and protection of strict protected and protected wild flora and fauna and fungi (Off. Jour of RS No 5/10),

In Europe, up to date, *Batrachochytrium salamandrivorans* chytrid fungus was found on tailed amphibian species: Common Fire Salamander (*Salamandra salamandra*), Smooth Newt (*Lissotriton vulgaris*) and Alpine Newt (*Ichthyosaura alpestris*). All the given species in our country are on ANNEX I (Strictly protected wild species of plants, animals and fungus), Rulebook on proclamation and protection of strictly protected and protected wild species of plants, animals and fungus („Official gazette of RS", no. 5/10 and 47/11).

It was supposed that *Batrachochytrium salamandrivorans* chytrid fungus was introduced into the areas of Europe by pet trading or via imports of tailed amphibian pets from Asia. According to the available literature, the main transmitter of this fungal disease, fatal for European tailed amphibians are the Asian species:*Hypselotrriton cyanurus, Cynops pyrrhogaster and Paramesotriton deloustali.*

According to the 75. meeting of CITES scientific working group that took place in Brussels on 7 March 2016 and that the ban of import of tailed amphibians from Asia is one of major recommendation of the Standing Committee, number 176 (2015) for prevention and control *Batrachochytrium salamandrivorans* chytrid fungus, since the Institute for nature conservation of Vojvodina province issues negative opinions for import of tailed amphibians from Asia.

During 2015 year, Institute for nature conservation of Vojvodina province issued 5 positive opinions for import of 150 individuals of species *Cynops orientalis*.

This is in total 750 individuals of species *Cynops orientalis* which is very similar to *Cynopspyrrhogaster* species and there is the possibility that the other species is identified as the main transmitter of *Batrachochytrium salamandrivorans* chytrid fungus. It is indicative that the last three demands for import was done just before the adoption of recommendation number 176 submitted to the competent Ministry on 16.11.2015 year. Applicant for all 5 requests to import was company Tropski svet d.d. Novi Sad.

During 2016 year Institute for nature conservation of Vojvodina province issued one opinion for import 150 individuals species *Cynops orientalis*. In this time the Institute issued negative opinion with explanation: we wish to note that import of tailed amphibians from Asia, specially *Cynops orientalis* species which is the potential danger to autochthon species tailed amphibians and as this species is the transmitter of this fungal disease *Batrachochytrium salamandrivorans* chytrid fungus. Since this fungal disease can cause the extinction of all populations of individuals of species, the import of those species must be banned permanently.

Another measure of detection of this fungal disease is observation of tailed amphibians during the field work and asses the areas for conservation. Until today where were no dead individuals of amphibians nor live with symptoms of disease. Also, during the issuing permits for research on strictly protected species of amphibians, the Institute issues these permits, in case of detection of disease or death of individuals can be transported to the competent institution.

Prevention and control of the *Batrachochytrium salamandrivorans* chytrid fungus procedure should be introduced very soon through the legal system in all territory of the Republic of Serbia.

References:

1. Report provided by the Institute for Nature Conservation of Vojvodina Province, Novi Sad

2. Report provided by the Institute for Nature Conservation of Serbia

Coordinated by Snezana Prokic,MSc
Focal Point for Bern Convention Belgrade,10th August 2016.

SLOVAK REPUBLIC / RÉPUBLIQUE SLOVAQUE

Bern Convention – follow-up of the Recommendation of the Standing Committee No. 176 (2015) on the prevention and control of the Batrachochytrium salamandrivorans chytrid fungus – period 2015 – 2016

National report – Slovak Republic

Prepared by: Mr. Viliam Vongrej, Mrs. Ivana Havranová and Mrs. Michaela Mrázová from the State Nature Conservancy of the Slovak Republic and Mrs. Jana Durkošová from the Ministry of the Environment of the Slovak Republic

Current situation

So far there are no records of *Batrachochytrium salamandrivorans* (*Bs*) occurrence in the Slovak Republic.

Activities at the national level

Selected wildlife species of amphibians are subject of monitoring activities carried out by the State Nature Conservancy of the Slovak Republic or contracted external experts. The monitoring is aimed mainly on species and habitats of the Community interest. Data on amphibian as well as on other species are collected within a new information and monitoring system (www.biomonitoring.sk) where results of other researches are recorded, too.

Research of amphibians is carried out also by other scientific institutions (Slovak Academy of Sciences, universities, museums, etc.), which also gives possibility to identify *Bs*.

The State Veterinary and Food Institute registers no case of *Bs* identification but the chance of finding *Bs* is low, since herp keepers rarely contact this institute in case of animal mortality. Findings of non-indigenous amphibian species escaped from captivity or introduced into the nature are possible but so far there are no reports of such cases.

There is a danger of a potential risk of transfer of *Bs* in case of import / trade with exotic amphibian species (terrarium breeding). Most of these animals come to Slovakia through pet trade from neighboring countries and goods is under the customs control only in case of import from countries outside of the European Union.

October 2016

UNITED KINGDOM / ROYAUME-UNI

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

UK ACTION TO SEPTEMBER 2016 - DRAFT REPORT

The UK Government takes very seriously the threat posed by Chytrid fungus and supports measures to prevent its spread to protect our native wildlife. A Wildlife Disease Surveillance Partnership of government and key research and conservation groups works to raise awareness and ensure that systems are in place in the event of any outbreak. Notably, the Institute of Zoology (IoZ) undertakes research, detection and provides advice on *Batrachochytrium salamandrivorans*.

Biosecurity guidance has been promoted in published material such as: a Disease Alert on *B. sal* published by the Government, conservation and trade organisations; and an advisory letter from the IoZ. Biosecurity training, including how to take swabs for disease testing from amphibians, has been cascaded to members of recording groups.

The UK supports measures to restrict movement of amphibians into and across the EU to reduce the risk of transmission of *B. Sal*.

The UK continues to monitor for any threats to our native amphibians. The release of non-native animals into the wild in the UK is prohibited and we work with the trade to alert it to any threats which may infect private collections.

The first recorded case of *Batrachochytrium salamandrivorans* in the UK affected a captive animal. *B. sal* has since been detected in several other collections of captive amphibians. It has not been found in the wild, or in archived samples of wild amphibians.

Newt mortality incidents are investigated (and *B. Sal* is monitored) in GB. There are no regional high risk areas in GB. Salamanders not endemic to the UK.