



TRADE AND KEEPING OF LIVE EXOTIC REPTILES AND AMPHIBIANS

Need for a sustainable herpetofauna supply chain

The trade and keeping of live reptiles and amphibians is currently facing important emerging issues with regard to wildlife conservation, animal welfare and health. Professionals, the herpetology community and pet owners should commit to making the entire supply-chain of reptiles and amphibians more sustainable.

Emerging wildlife diseases

Trade in exotic species may introduce pathogens affecting native fauna. Scientific research suggests that trade in amphibian species has contributed to the introduction of two deadly fungi with a dramatic impact on native species: *Batrachochytrium dendrobatidis* (Bd) and *Batrachochytrium salamandrivorans* (Bsal). Those infectious and deadly skin diseases have led to dramatic decline of amphibian populations and even mass mortalities worldwide. Viruses like ranavirus are also threat for the survival of amphibians. The trade (for food, fish, bait and pet industry) has been recognised as an important introduction route.



Dead European Salamander infected by Bsal

The origin of chytrid fungi is to be found in South-East Asia, according to scientific research, and has been spread through the trade. Bd has caused the decline of 500 amphibian species and the extinction in the wild of at least 90 species. Bsal has caused the decline of native European salamanders in four EU countries.

In the US, a snake fungal disease *O. ophiodiicola* has been emerging since 2006 and has lethally impacted numerous species of native snakes across the country. It is currently unclear whether the skin infection is an alien or native pathogen to the US. The disease has not been yet reported in wild European snakes, save for two cases involving grass-land snakes in the UK (2015) and in Switzerland (2018). The origin of the fungus and its spread is currently unknown. It is possible that *O. ophiodiicola* may be transmitted between wild and captive snakes, as some suspect cases in Canada and in the US involved ball pythons (*Python regius*), common boas/red tail boas (*Boa constrictor imperator*) and emerald tree boas (*Corallus caninus*).

Animal-welfare challenges related to the supply chain of herpetofauna

The supply chain covers the entire process of a good through production, distribution and final consumption. In the context of the trade in exotic species, it should be understood as covering all stages from capture from the wild/from breeding facilities to the final pet owner. It covers transport, husbandry and breeding issues. The entire animal supply chain has an important role to play with regard to improving standards for animal welfare.

In a view of recent developments in ethology, animal welfare and ethics, modern legal doctrine and systems question whether an animal has yet to be considered as a good by civil law. The Treaty on the Functioning of the European Union and several national laws already recognise animals as sentient beings with specific biological needs. It should be noted, however, that this new legal status has no impact on the legal regime of goods, which remains applicable to animals.



Vietnamese *Shinisaurus crocodilurus* (CITES II)

Animal welfare in herpetofauna is complex to assess because high species diversity requires both broad and specific understanding of both amphibian and reptile biology, diseases and behaviour. Of particular interest is that more and more scientific studies are carried out in order to better understand the behaviour of reptiles. A recent study on the reptilian brain, for example, demonstrates a capability for complex behaviours in reptiles, just as in mammals.

Because reptile and amphibian behaviour is complex to understand and not well studied, the husbandry of herpetofauna may be complex as well. Difficulties in recognising signs of disease or pain may result in serious harm to animals, including death. Professionals specialising in herpetofauna veterinary medicines advise regular health checks, with at least one annually. According to the American Veterinary Medical Association, fewer than 8% of households that owned reptiles had veterinary expenditures in 2011.

“The welfare and health of reptiles and amphibians removed directly from the wild, packed and shipped overseas are generally recognised to be seriously compromised by the process and losses and suffering are significant”. British Veterinary association (2015)

Amphibians and reptiles are known to be sensitive to heat, cold, dehydration, stress, malnutrition, improper nutrient intake and toxins caused by an improper environment (substrate or water). According to veterinary practice, inappropriate husbandry is the first cause of illness and death for captive reptiles and amphibians with 90% of veterinary care concerned in the US.

Recommendation

- **Professionals in the EU (breeders, exporters, importers, wholesalers or pet shops) and pet owners are pivotal actors in the supply chain and should commit to implementing a sustainable supply chain for the trade in reptiles and amphibians, taking into account wildlife conservation, animal welfare and biosecurity aspects.**

In order to do so, consider establishing a European code of conduct for all professional actors involved in the supply-chain. This code (i.e. self-regulation) would complement and facilitate the implementation of existing legislation; such a code should include following commitments:

In relation with the commercial activity:

- **Ban the import and trade of all wild-caught reptiles and amphibians;**
- **Work as far as possible in a closed circuit at European level by giving priority to EU captive-bred specimens available within the EU;**
- **Avoid working with exporters and intermediaries which do not offer sufficient guarantees in terms of compliance, animal welfare and wildlife conservation. In that respect, ensure self-control of the supply-chain and consider setting up a professional label guaranteeing the sustainability of the trade or due diligence system;**
- **Set up and follow standard operating procedures concerning waste treatment and biosafety – promote clean trade;**

- **Promote specialist veterinary supervision and care throughout the whole chain;**
- **Promote enforcement of current legislation by providing information on relevant applicable legislation;**
- **Invest in scientific knowledge relating to conservation, spread of disease, animal-welfare and husbandry.**

In relation to pet owners:

- **Provide general information on the legal status of each animal traded within the European Union and the state of its range;**
- **Provide general information on current threats faced by wild and captive reptiles and amphibians (conservation in the wild, emerging diseases and animal welfare). Provide advice to the herp community on how to tackle those threats;**
- **Provide information on the potential risks for each species traded (public health, e.g. salmonella);**
- **Provide information on threats to our ecosystems (infections, invasive alien species);**
- **Provide contact information for specialised veterinary care;**
- **Provide welfare and husbandry advice for each species traded, including by providing information on the average life span in captivity of those species;**
- **Advise that animals should only be bought from registered pet shops;**
- **Advise being very careful with e-commerce and to avoid buying an animal via social media;**
- **Advise new owners to make regular vet checks.**

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This fact sheet is part of a set of a series of six covering the trade in exotic animal species. They are focused on illegal importation of meat into the European Union (including bushmeat) and the legal or illegal trade in reptiles and amphibians. They were developed on a collaborative way between the FPS Health and a group of experts. They were issued during the "Towards a sustainable wildlife trade" One World One Health recommendations event organized on 3 and 4 December 2019 by the FPS Health and the Belgian Biodiversity Platform.



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