# First evidence-based record of the European green toad *Bufotes viridis* (Laurenti, 1768) (Amphibia, Bufonidae) in Luxembourg

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**Abstract.** This paper presents the first evidence-based record of the European green toad *Bufotes viridis* (Laurenti, 1768) (Amphibia, Bufonidae) in Luxembourg. Further investigation is needed to clarify whether the species has established a breeding population in the country.

**Keywords.** Amphibians, *Bufotes viridis*, colonisation, dispersal, geographic distribution, conservation.

## 1. Introduction

The European green toad *Bufotes viridis* (Laurenti, 1768) (Amphibia, Bufonidae) is a species of bufonid toad whose distribution in Europe ranges from north-eastern France and western Germany in the west to western Russia in the east, and from the southern tip of Sweden in the north to Corsica (France), Italy including Sardinia, and Greece including Crete in the south (Podloucky & Vences 2022). Populations in Germany and north-eastern France are at the western distribution limit of the species and are thus patchier (Podloucky & Vences 2022). Italian and Corsican populations are sometimes considered a different species, namely *Bufotes balearicus* (Boettger, 1880); however, their taxonomy needs further clarification.

## 2. Materials and methods

The observations reported in the present paper are fortuitous.

On 16 April 2026, during a conservation management intervention in Mondorf-les-Bains in the south of Luxembourg, one of the authors (AK) found an adult bufonid toad on a footpath within the wellness, fitness and spa complex Mondorf Domaine Thermal (LUREF: 88227 E, 63021 N). The specimen was photographed and released. On a subsequent visit to the site on 21 April 2026, AK found a dead adult bufonid toad floating in a fountain close to the location of the first finding (LUREF: 88205 E, 63052 N); the carcass was recovered and photographed. The photographs were compared based on the spot patterns of the toads, both visually and using Artificial Intelligence, namely Copilot (Microsoft 2026) and ChatGPT (OpenAI 2026).

Taxonomy and nomenclature follow Frost et al. (2006) and Dubois & Bour (2010).

## 3. Results

Comparison based on the spot patterns showed that the bufonid toads found on 16 April 2026 (Fig. 1a) and 21 April 2026 (Fig. 1b) in Mondorf-les-Bains were in fact the same individual, which was identified as a European green toad. The carcass is conserved in the collection of the National Museum of Natural History of Luxembourg (specimen number MNHNL197032).

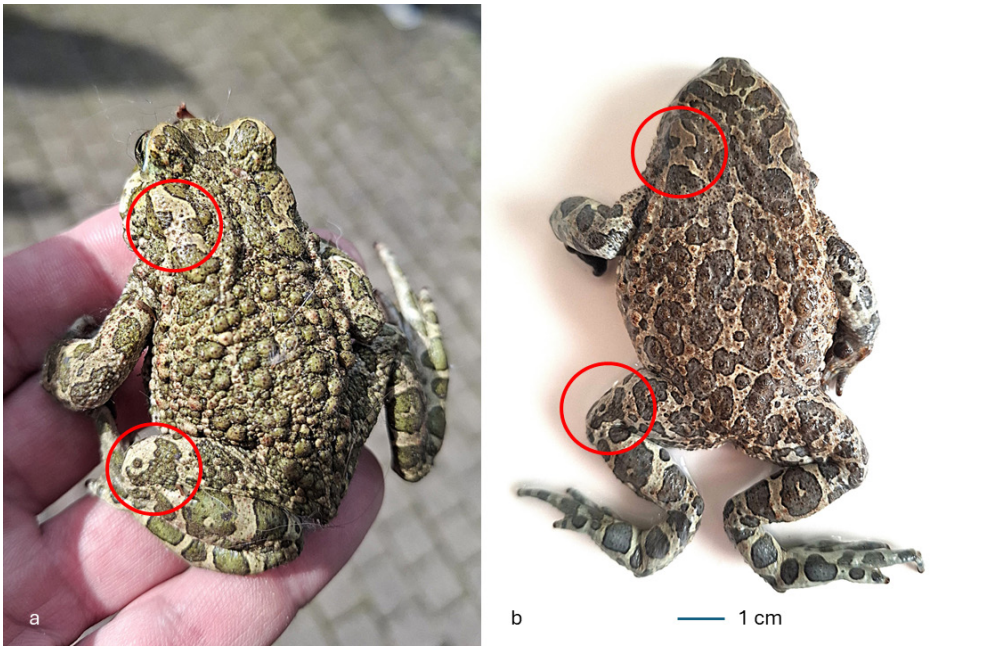



Fig. 1. Adult European green toad *Bufotes viridis* (Laurenti, 1768) (Amphibia, Bufonidae) (a) observed alive on 16 April 2026 and (b) found dead on 21 April 2026 in Mondorf-les-Bains, Luxembourg. Photos: Alexander Kristiansen. The circled skin areas in both photographs demonstrate that they show the same specimen.

## 4. Discussion

The possible presence of the European green toad in Luxembourg has been subject to some speculation for the past century. While de la Fontaine (1870) and Ferrant (1922) did not list the species as occurring in Luxembourg, Hecht (1930) first mentioned the European green toad for this country and stated that it could possibly be observed here, given its presence near Conz (today: Konz) in neighbouring Germany. Nowadays, this German population seems to be extinct (Podloucky & Vences 2022). The species is then cited by Hoffmann (1958) as occurring in Luxembourg, but concrete evidence such as locations or regions of presence or any other information is lacking. Nöllert & Nöllert (1992) exclude the Benelux States in the distribution of the European green toad, while for France, they mention presence only in the departments Bas-Rhin and Haut-Rhin. In the first Atlas of the amphibians of Luxembourg, Proess (2003) does not include the species as present in the country but only refers to the aforementioned statement by Hoffmann (1958). Duguet & Melki (2003) show the species as absent from both Luxembourg and Belgium, while being present in the French departments Moselle (bordering Luxembourg), Bas-Rhin, Haut-Rhin and Doubs. Anonymous (2014), not covering Luxembourg, confirms the presence of the European green toad in the French department Moselle, where the species seems to be expanding (Berna et al. 2025), although the population located closest to the Luxembourg border, in the commune of Cattenom, was probably introduced (Vacher et al. 2024). Proess (2015) considers previous mentions of the European green toad for Luxembourg as doubtful and concludes that there is no evidence that the species had been present in the previous 150 years during which amphibians had been the subject of scientific research in the country. This situation did not change with the publication of the second Atlas of the amphibians of Luxembourg (Proess 2016).

In conclusion, and to our best knowledge, the current paper presents the first evidence-based record of the European green toad in Luxembourg. Although it cannot be asserted how the individual found in Mondorf-les-Bains arrived there, the species' appearance in that area is not totally unexpected but rather represents a plausible expression of regional dispersal dynamics. Considering the proximity of the European green toad breeding population in the commune of Cattenom around 14 km as the crow flies from Mondorf-les-Bains and other records across the border in France, and given the ecological profile of the European green toad as a mobile pioneer species associated with open and anthropogenic habitats and capable of medium-range dispersal (Podloucky & Vences 2022), natural dispersal seems to be the most likely origin of the individual detected in Mondorf-les-Bains. Further investigation and targeted surveys in the south-eastern region of the country are needed to clarify whether the European green toad has possibly established a breeding population in Luxembourg that may have remained undetected to date.


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