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# Import Status of Pet Amphibians in South Korea

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## ABSTRACT

This study investigated the import status of pet amphibians in South Korea from 2023 to 2024 and updated the list of alien amphibian species. Based on quarantine data, 22,572 individuals from 167 species were imported from 14 countries. Among them, 47 species were listed as internationally endangered, with the Dendrobatidae family accounting for the largest share. Although most species originate from tropical rainforests and are unlikely to establish in Korea's ecosystem, their introduction may pose ecological risks through competition or disease transmission. Continuous monitoring is recommended.

**Keywords:** Amphibian, Anura, Caudata, Endangered species, Import status, Pet amphibian

## Introduction

Amphibians are important taxonomic group for biodiversity conservation, and they play a wide range of ecological roles worldwide (Stuart *et al*., 2004). Amphibians are imported for several purposes, such as research, culinary use, pets, and ornamental purposes (Schlaepfer *et al*., 2005; Schloegel *et al*., 2009). Globally, a total of 1,215 amphibian species (representing approximately 17% of all known amphibians) are traded either as captive-bred or wild-caught individuals (Hughes *et al*., 2021).

The recent increase in the importation of ornamental amphibians into South Korea is closely associated with the diversification of the pet industry and increased demand for rare and exotic companion animals. In addition to traditional pets such as dogs and cats, amphibians are gaining popularity among pet owners due to their distinctive morphological characteristics and relatively low maintenance requirements (Carpenter *et al*., 2014). In particular, many amphibian species are preferred in urban settings, because they can be housed in limited spaces and maintained under relatively simple husbandry conditions (Rowley *et al*., 2016).

Amphibians kept as pets may escape from captivity to the wild ecosystem or by being accidentally or deliberately released by private owner. This may contribute to an increased risk of spreading of non-native and invasive species (Measey *et al*., 2012; Prestridge *et al*., 2011). If released into the wild, these species may disrupt native ecosystems by competing with indigenous species, acting as predators or serving as vectors for pathogens (Picco & Collins, 2008). A notable concern is the chytrid fungus *Batrachochytrium dendrobatidis*, the causative agent of chytridiomycosis, a highly infectious disease associated with the decline in global amphibian population (Fisher & Garner, 2007; Martel *et al*., 2014; Nguyen *et al*., 2017; Schloegel *et al*., 2009). Given the prevalence of *B. dendrobatidis* worldwide, serious attention should be given to the possibility of its introduction to South Korea via amphibian imports.

To mitigate such risks, the South Korean government has designated 57 amphibian species as "species of con-

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cern" under the national invasive species monitoring and control framework (ME, 2024). Aside from the partial data derived from online pet store inventories (Koo *et al*., 2020), comprehensive information on the importation status of ornamental amphibians remains scarce. Hence, there is an urgent need for a systematic investigation on the current status of exotic amphibian imports and their potential ecological implications.

Therefore, this study aimed to examine the import trends of ornamental amphibians in South Korea and contribute to the revision and update of the national inventory of alien amphibian species introduced via the pet trade.

## Case Report

To examine the import status of pet amphibians in Korea from 2023 to 2024, the import (and export) quarantine statistics provided by the National Fishery Products Quality Management Service (NFQS, 2025) were used. As quarantine measures for imported amphibians have been enforced in Korea beginning in 2023, data from 2023 to 2024 were extracted and analyzed (MOF, 2022).

Taxonomic classification and international conservation status (e.g., endangered species) of imported amphibians were determined using the Global Biodiversity Information Facility (GBIF) and Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) databases (CITES, 2025; GBIF, 2025).

## Discussion

### Status of amphibian imports to South Korea

A total of 167 species of pet amphibians were imported into Korea, accounting for 13.7% of the 1,215 amphibian species traded internationally (Hughes *et al*., 2021). Among the 22,572 individual amphibians imported, the order Anura accounted for the highest number with 126 species and 14,245 individuals, followed by Caudata with 39 species and 8,290 individuals, and then Gymnophiona with 2 species and 37 individuals (Table 1, Supplementary Table 1).

There has been a 48.2% increase in the number of Anura species compared to the 85 sold through domestic online pet shops, and a 5.4% increase compared to the 37 Caudata species previously recorded (Koo *et al*., 2020).

The number of imported species decreased from 118 species (14,726 individuals) in 2023 to 98 species (7,846 individuals) in 2024, indicating a 14.0% reduction in species and a 46.7% reduction in the number of individuals (Table 1). Additionally, Anura decreased slightly in species diversity from 84 species in 2023 to 82 species in 2024 (2.4% decrease), but the number of individuals increased by 1.9% from 7,054 to 7,191.

The overall decline in amphibian imports in 2024 compared to 2023 is primarily attributed to a significant reduction in Caudata, which reduced by 50.0% in species and 91.4% in the number of individuals (Table 1). It is presumed that the sharp decline in Caudata imports compared to Anura imports may be due to the more demanding requirements for maintaining their captive environments, such as precise humidity and temperature control; however, it is difficult to draw definitive conclusions based on only two years of data.

The ornamental amphibians imported into Korea originated from 14 countries: Canada, Germany, the United States, the Czech Republic, Japan, Madagascar, Hungary, Malaysia, Taiwan, China (Hong Kong), Peru, Togo, Indonesia, and Colombia. Among these countries, Canada was the leading source, exporting 37 species to Korea, followed by Germany (30 species), the United States (29 species), the Czech Republic (28 species), Japan (22 species), Madagascar (20 species), and Hungary (17 species). These seven countries collectively accounted for 78.5% of the total amphibian species imported into Korea (Fig. 1).

### Major species

*Cynops pyrrhogaster* (2,238 individuals) was the most frequently imported species among the imported amphibians, followed by *Cynops ensicauda* (2,207 individuals), *Ceratophrys cranwelli* (1,894 individuals), *Cynops orientalis* (1,605 individuals), *Hymenochirus boettgeri* (1,200 individuals), and then *Pyxicephalus adspersus* (1,130 individuals). Over 1,000 individuals were imported for each of these six species (three from the order *Caudata* and three from the order *Anura;* Fig. 2, Supplementary Table 1;

**Table 1.** Annual import status of pet amphibian in Korea (2023-2024)

| Order | 2023 | | 2024 | |
|---|---|---|---|---|
| | Number of species | Number of individuals | Number of species | Number of individuals |
| Anura | 84 | 7,054 | 82 | 7,191 |
| Caudata | 32 | 7,635 | 16 | 655 |
| Gymnophiona | 2 | 37 | - | - |
| Total | 118 | 14,726 | 98 | 7,846 |

-, not available.

GBIF, 2024a; 2024b; 2024c; 2024d).

Of the total amphibian species imported, 47 species (28.1%) were listed as internationally threatened species under the CITES, and this is a substantial increase of 80.8% compared to 2019 (Koo *et al*., 2020). These included 43 species from the order Anura and 4 species from the order Caudata (Supplementary Table 1). All of these species were categorized under CITES Appendix II, and they include species that are not currently threatened with extinction but may become so unless international trade is strictly regulated (CITES, 2025). Notably, the family Dendrobatidae (poison dart frogs), with 30 species, has the highest number of members in the order Anura. These frogs are generally small in size and are highly popular in the international pet trade due to their striking coloration and fascinating behavior (Gorzula, 1996; Kaczmarski & Kolenda, 2018; Prestridge *et al*., 2011; Ruland & Jeschke, 2017). Pet amphibians may escape from enclosures or be intentionally or accidentally released into the natural environment by private owners. Although most imported species originate from equatorial and tropical rainforest regions, such as Brazil, Colombia, Peru, and Madagascar, and are less likely to establish populations in the temperate ecosystems of Korea, their introduction could still lead to ecological disturbances through competition with native species for food and habitat or transmission of pathogens (Picco & Collins, 2008). Of a particular concern is the global amphibian trade, which has been identified as a major driver of the spread of infectious diseases caused by *B. dendrobatidis* and *Batrachochytrium salamandrivorans*, posing serious threats to both wild and captive populations (Fisher & Garner, 2007; Martel *et al*., 2014; Nguyen *et al*., 2017).

All imported amphibians have the potential to become invasive alien species, similar to *Lithobates catesbeianus*, highlighting the importance of continuous management to prevent their release into natural ecosystems. It is also essential to strengthen both online and offline surveillance systems to detect and deter the illegal trade of such species (Koo *et al*., 2020). The first step in this manage-

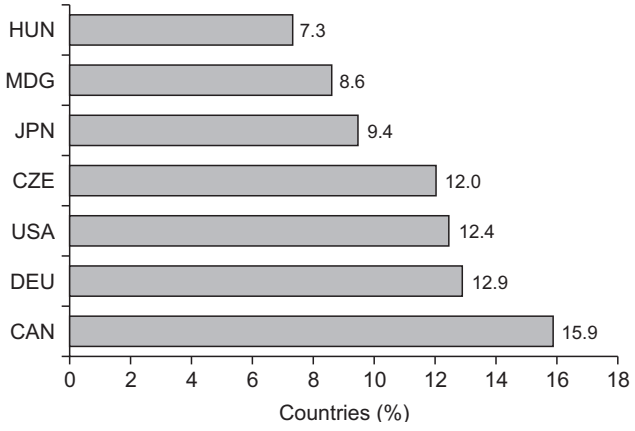


**Fig. 1.** Major importing countries of pet amphibian. HUN, Hungary; MDG, Madagascar; JPN, Japan; CZE, the Czech Republic; USA, the United States; DEU, Germany; CAN, Canada.

*Cynops pyrrhogaster*

*Cynops ensicauda*

*Pyxicephalus adspersus*

*Ceratophrys cranwelli*

**Fig. 2.** Major imported species of pet amphibian. Source: GBIF (2024a; 2024b; 2024c; 2024d).

ment effort is to maintain an up-to-date list of introduced alien species. This list can be used to revise both the voluntary import restriction list (i.e., white list) and the current inventory of 25 alien amphibian species (NIE, 2021), thereby supporting targeted monitoring to assess the potential establishment and spread of these species within Korea's ecosystems. Furthermore, it can serve as a valuable resource for monitoring the trade of internationally threatened species and for facilitating global cooperation in managing invasive alien species.

## Author Contributions

Study design: Youngjun Park; Data collection: Youngjun Park, Doyoung Chae, and Mingyo Jeong; Analysis and manuscript preparation: Youngjun Park.

## Conflict of Interest

The authors declare that they have no competing interests.

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**Supplementary Table 1.** Import status of pet amphibian list in Korea (2023–2024)

| Order | Family | Scientific name | 2023 | 2024 | Total | Importing country | Cites |
|---|---|---|---|---|---|---|---|
| Anura | Alytidae | *Alytes muletensis* | 40 | | 40 | DEU | |
| Anura | Aromobatidae | *Allobates zaparo* | | 6 | 6 | CAN | II |
| Anura | Arthroleptidae | *Leptopelis flavomaculatus* | 50 | 200 | 250 | TGO | |
| Anura | Bombinatoridae | *Bombina maxima* | 1 | | 1 | DEU | |
| Anura | Brevicipitidae | *Breviceps adspersus* | 70 | 400 | 470 | DEU, TWN | |
| Anura | Bufonidae | *Atelopus spumarius* | 32 | 6 | 38 | CAN, USA | |
| Anura | Bufonidae | *Bufo gargarizans* | 440 | | 440 | JAN | |
| Anura | Bufonidae | *Incilius alvarius* | 12 | | 12 | CAN | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Anura | Bufonidae | *Melanophryniscus klappenbachi* | 16 | | 16 | DEU | |
| Anura | Bufonidae | *Phrynoidis asper* | | 30 | 30 | MYS | |
| Anura | Bufonidae | *Rentapia flavomaculata* | | 55 | 55 | CZE, DEU | |
| Anura | Bufonidae | *Rentapia hosii* | | 29 | 29 | USA | |
| Anura | Bufonidae | *Rhaebo guttatus* | 12 | | 12 | USA | |
| Anura | Bufonidae | *Sclerophrys regularis* | 500 | 200 | 700 | TGO | |
| Anura | Centrolenidae | *Hyalinobatrachium fleischmanni* | 30 | 100 | 130 | USA | |
| Anura | Ceratobatrachidae | *Cornufer guentheri* | 15 | | 15 | CAN | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Anura | Ceratophryidae | *Ceratophrys cranwelli* | 571 | 1,323 | 1,894 | TWN | |
| Anura | Ceratophryidae | *Ceratophrys stolzmanni* | 290 | | 290 | JAN, TWN | |
| Anura | Ceratophryidae | *Ceratophrys ornata* | 53 | | 53 | TWN | |
| Anura | Ceratophryidae | *Ceratophrys cornuta* | | 38 | 38 | TWN, DEU | |
| Anura | Ceratophryidae | *Ceratophrys cranwelli X cornuta* | | 20 | 20 | TWN | |
| Anura | Ceratophryidae | *Chacophrys pierottii* | 85 | 95 | 180 | JAN, TWN | |
| Anura | Ceratophryidae | *Lepidobatrachus laevis* | 224 | 160 | 384 | MYS, TWN | |

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|---|---|---|---|---|---|---|---|
| Anura | Dendrobatidae | *Adelphobates galactonotus* | | 29 | 29 | HUN | II |
| Anura | Dendrobatidae | *Ameerega bassleri* | 2 | 13 | 15 | CAN | II |
| Anura | Dendrobatidae | *Ameerega bilinguis* | | 6 | 6 | COL | II |
| Anura | Dendrobatidae | *Ameerega ingeri* | | 6 | 6 | COL | II |
| Anura | Dendrobatidae | *Ameerega pepperi* | 4 | | 4 | CAN | II |
| Anura | Dendrobatidae | *Ameerega silverstonei* | 4 | | 4 | CAN | II |
| Anura | Dendrobatidae | *Andinobates daleswansoni* | | 4 | 4 | CAN | II |

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|---|---|---|---|---|---|---|---|
| Anura | Dendrobatidae | *Dendrobates tinctorius* | 271 | 386 | 657 | CAN, CZE, DEU, HUN, USA | II |
| Anura | Dendrobatidae | *Dendrobates auratus* | 32 | 178 | 210 | CAN, CZE, DEU, HUN | II |
| Anura | Dendrobatidae | *Dendrobates leucomelas* | 75 | 85 | 160 | CAN, CZE, DEU, HUN | II |
| Anura | Dendrobatidae | *Dendrobates truncatus* | | 4 | 4 | CAN | II |
| Anura | Dendrobatidae | *Epipedobates anthonyi* | 11 | 28 | 39 | CAN | II |
| Anura | Dendrobatidae | *Epipedobates tricolor* | 6 | | 6 | CAN | II |
| Anura | Dendrobatidae | *Oophaga pumilio* | 86 | 52 | 138 | COL, DEU, HUN | II |

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|---|---|---|---|---|---|---|---|
| Anura | Dendrobatidae | *Oophaga histrionica* | 2 | 15 | 17 | CAN, HUN | II |
| Anura | Dendrobatidae | *Oophaga lehmanni* | 3 | 6 | 9 | CAN, HUN, USA | II |
| Anura | Dendrobatidae | *Oophaga sylvatica* | | 5 | 5 | CAN | II |
| Anura | Dendrobatidae | *Phyllobates terribilis* | 91 | 101 | 192 | CAN, DEU, HUN | II |
| Anura | Dendrobatidae | *Phyllobates vittatus* | 17 | 20 | 37 | CAN, DEU | II |
| Anura | Dendrobatidae | *Ranitomeya sirensis* | 8 | 108 | 116 | CAN, HUN | II |
| Anura | Dendrobatidae | *Ranitomeya imitator* | | 91 | 91 | CAN, HUN | II |
| Anura | Dendrobatidae | *Ranitomeya reticulata* | 11 | 55 | 66 | CAN | II |

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|---|---|---|---|---|---|---|---|
| Anura | Dendrobatidae | *Ranitomeya amazonica* | | 42 | 42 | CAN | II |
| Anura | Dendrobatidae | *Ranitomeya variabilis* | | 39 | 39 | CAN, HUN | II |
| Anura | Dendrobatidae | *Ranitomeya fantastica* | 16 | 20 | 36 | CAN | II |
| Anura | Dendrobatidae | *Ranitomeya uakarii* | 12 | 20 | 32 | CAN, HUN | II |
| Anura | Dendrobatidae | *Ranitomeya benedicta* | | 24 | 24 | CAN, HUN | II |
| Anura | Dendrobatidae | *Ranitomeya vanzolinii* | | 21 | 21 | CAN, HUN | II |
| Anura | Dendrobatidae | *Ranitomeya summersi* | | 10 | 10 | CAN, HUN | II |
| Anura | Dendrobatidae | *Ranitomeya flavovittata* | | 3 | 3 | HUN | II |

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|---|---|---|---|---|---|---|---|
| Anura | Hemiphractidae | *Gastrotheca riobambae* | 14 | | 14 | CZE, USA | |
| Anura | Hemisotidae | *Hemisus marmoratus* | 124 | | 124 | TGO | |
| Anura | Hylidae | *Boana crepitans* | 17 | | 17 | CAN | |
| Anura | Hylidae | *Boana punctata* | 5 | | 5 | PER | |
| Anura | Hylidae | *Dendropsophus leucophyllatus* | 24 | | 24 | USA | |
| Anura | Hylidae | *Dendropsophus ebraccatus* | 12 | | 12 | CAN, USA | |
| Anura | Hylidae | *Dendropsophus marmoratus* | 7 | | 7 | USA | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Anura | Hylidae | *Sphaenorhynchus lacteus* | | 1 | 1 | USA | |
| Anura | Hylidae | *Trachycephalus resinifictrix* | 382 | 195 | 577 | CZE, DEU, HUN, JPN | |
| Anura | Hylidae | *Triprion spinosus* | 2 | | 2 | DEU | |
| Anura | Hyperoliidae | *Afrixalus dorsalis* | 50 | | 50 | TGO | |
| Anura | Hyperoliidae | *Heterixalus punctatus* | | 12 | 12 | MDG | |
| Anura | Hyperoliidae | *Heterixalus andrakata* | | 10 | 10 | MDG | |
| Anura | Hyperoliidae | *Heterixalus betsileo* | | 3 | 3 | MDG | |
| Anura | Hyperoliidae | *Hyperolius concolor* | 150 | 300 | 450 | TGO | |

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|---|---|---|---|---|---|---|---|
| Anura | Mantellidae | *Boophis rappiodes* | | 30 | 30 | MDG | |
| Anura | Mantellidae | *Boophis madagascariensis* | | 14 | 14 | MDG | |
| Anura | Mantellidae | *Boophis albipunctatus* | | 10 | 10 | MDG | |
| Anura | Mantellidae | *Boophis goudoti* | | 10 | 10 | MDG | |
| Anura | Mantellidae | *Boophis ankaratra* | | 4 | 4 | MDG | |
| Anura | Mantellidae | *Boophis viridis* | | 3 | 3 | MDG | |
| Anura | Mantellidae | *Mantella baroni* | 161 | 90 | 251 | MDG | II |
| Anura | Mantellidae | *Mantella nigricans* | 89 | 10 | 99 | MDG | II |
| Anura | Mantellidae | *Mantella aurantiaca* | 29 | 30 | 59 | MDG | II |
| Anura | Mantellidae | *Mantella pulchra* | 10 | 31 | 41 | MDG | II |
| Anura | Mantellidae | *Mantella betsileo* | | 10 | 10 | MDG | II |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Anura | Mantellidae | *Mantella madagascariensis* | 4 | | 4 | MDG | II |
| Anura | Megophryidae | *Leptobrachium hendricksoni* | | 90 | 90 | MYS | |
| Anura | Megophryidae | *Megophrys nasuta* | | 76 | 76 | MYS | |
| Anura | Microhylidae | *Dyscophus insularis* | 49 | | 49 | MDG | II |
| Anura | Microhylidae | *Dyscophus guineti* | 21 | | 21 | MDG | II |
| Anura | Microhylidae | *Kaloula pulchra* | 27 | | 27 | IDN | |
| Anura | Microhylidae | *Kaloula baleata* | | 1 | 1 | CAN, IDN | |
| Anura | Microhylidae | *Phrynomantis bifasciatus* | 120 | | 120 | TGO | |
| Anura | Microhylidae | *Scaphiophryne spinosa* | 19 | 20 | 39 | MDG | II |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Anura | Microhylidae | *Scaphiophryne marmorata* | 4 | 5 | 9 | MDG | II |
| Anura | Microhylidae | *Scaphiophryne brevis* | | 5 | 5 | MDG | |
| Anura | Pelodryadidae | *Ranoidea caerulea* | 306 | 30 | 336 | CAN, CZE, DEU, TWN | |
| Anura | Pelodryadidae | *Ranoidea genimaculata* | 26 | | 26 | USA | |
| Anura | Pelodryadidae | *Ranoidea splendida* | 10 | | 10 | HKG | |
| Anura | Phyllomedusidae | *Agalychnis callidryas* | 380 | 200 | 580 | CAN, DEU, USA | II |
| Anura | Phyllomedusidae | *Agalychnis moreletii* | 160 | | 160 | CZE, USA | II |

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|---|---|---|---|---|---|---|---|
| Anura | Phyllomedusidae | *Agalychnis dacnicolor* | 60 | 5 | 65 | CZE, DEU | |
| Anura | Phyllomedusidae | *Cruziohyla craspedopus* | 65 | 2 | 67 | CZE, USA, PER | |
| Anura | Phyllomedusidae | *Cruziohyla sylviae* | 12 | 13 | 25 | CZE | |
| Anura | Phyllomedusidae | *Phyllomedusa sauvagii* | 221 | 90 | 311 | USA, PER | |
| Anura | Phyllomedusidae | *Phyllomedusa bicolor* | 128 | | 128 | CZE | |
| Anura | Phyllomedusidae | *Pithecopus hypochondrialis* | 61 | 50 | 111 | CAN, DEU, USA | |
| Anura | Phyllomedusidae | *Phyllomedusa tomopterna* | 13 | 16 | 29 | HKG | |

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|---|---|---|---|---|---|---|---|
| Anura | Phyllomedusidae | *Phyllomedusa burmeisteri* | 20 | | 20 | PER | |
| Anura | Phyllomedusidae | *Phyllomedusa vaillantii* | 5 | | 5 | USA, PER | |
| Anura | Phyllomedusidae | *Phyllomedusa tarsius* | 2 | | 2 | USA, PER | |
| Anura | Pipidae | *Hymenochirus boettgeri* | 150 | 1,050 | 1,200 | CZE, IDN | |
| Anura | Pipidae | *Pipa pipa* | 5 | | 5 | CZE | |
| Anura | Pipidae | *Pipa parva* | 3 | | 3 | CAN | |
| Anura | Pyxicephalidae | *Pyxicephalus adspersus* | 600 | 530 | 1,130 | TWN | |
| Anura | Ranidae | *Pulchrana picturata* | | 18 | 18 | MYS | |
| Anura | Ranidae | *Odorrana narina* | 15 | | 15 | JAN | |

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|---|---|---|---|---|---|---|---|
| Anura | Rhacophoridae | *Buergeria buergeri* | 30 | | 30 | JAN | |
| Anura | Rhacophoridae | *Buergeria choui* | 20 | | 20 | JAN | |
| Anura | Rhacophoridae | *Buergeria japonica* | 20 | | 20 | JAN | |
| Anura | Rhacophoridae | *Nyctixalus pictus* | | 40 | 40 | MYS | |
| Anura | Rhacophoridae | *Rhacophorus bipunctatus* | | 25 | 25 | MYS | |
| Anura | Rhacophoridae | *Rhacophorus nigropalmatus* | | 5 | 5 | MYS | |
| Anura | Rhacophoridae | *Rhacophorus reinwardtii* | | 5 | 5 | MYS | |
| Anura | Rhacophoridae | *Theloderma asperum* | | 61 | 61 | MYS | |

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|---|---|---|---|---|---|---|---|
| Anura | Rhacophoridae | *Theloderma leporosum* | | 6 | 6 | MYS | |
| Anura | Rhacophoridae | *Zhangixalus arboreus* | 194 | | 194 | JPN | |
| Anura | Rhacophoridae | *Zhangixalus schlegelii* | 120 | | 120 | JPN | |
| Anura | Rhacophoridae | *Zhangixalus prominanus* | | 52 | 52 | JPN | |
| Anura | Rhacophoridae | *Zhangixalus owstoni* | 10 | | 10 | MYS | |
| Anura | Rhacophoridae | *Zhangixalus viridis* | 4 | | 4 | JPN | |
| Anura | Rhacophoridae | *Zhangixalus duboisi* | 2 | | 2 | JPN | |

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|---|---|---|---|---|---|---|---|
| Caudata | Ambystomatidae | *Ambystoma tigrinum* | 378 | 68 | 446 | CZE | |
| Caudata | Ambystomatidae | *Ambystoma mavortium* | | 60 | 60 | CZE, DEU | |
| Caudata | Ambystomatidae | *Ambystoma opacum* | 56 | | 56 | USA | |
| Caudata | Ambystomatidae | *Ambystoma maculatum* | | 25 | 25 | DEU | |
| Caudata | Ambystomatidae | *Ambystoma texanum* | | 9 | 9 | CAN, CZE, USA | |
| Caudata | Amphiumidae | *Amphiuma means* | 10 | | 10 | USA | |
| Caudata | Hynobiidae | *Hynobius nigrescens* | 16 | | 16 | CZE | |
| Caudata | Hynobiidae | *Hynobius retardatus* | 10 | | 10 | JPN | |

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|---|---|---|---|---|---|---|---|
| Caudata | Hynobiidae | *Hynobius nebulosus* | | 5 | 5 | JPN | |
| Caudata | Hynobiidae | *Hynobius yiwuensis* | 3 | | 3 | HKG | |
| Caudata | Plethodontidae | *Eurycea guttolineata* | 10 | | 10 | CZE | |
| Caudata | Plethodontidae | *Plethodon mississippi* | 9 | | 9 | USA | |
| Caudata | Plethodontidae | *Aneides lugubris* | | 5 | 5 | JPN | |
| Caudata | Plethodontidae | *Isthmura bellii* | 2 | | 2 | USA | |
| Caudata | Plethodontidae | *Pseudotriton ruber* | 2 | | 2 | USA | |
| Caudata | Salamandridae | *Cynops pyrrhogaster* | 2,238 | | 2,238 | HKG | |
| Caudata | Salamandridae | *Cynops ensicauda* | 2,207 | | 2,207 | JPN | |
| Caudata | Salamandridae | *Cynops orientalis* | 1,605 | | 1,605 | HKG | |

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|---|---|---|---|---|---|---|---|
| Caudata | Salamandridae | *Triturus marmoratus* | 187 | 86 | 273 | CZE, HKG, TWN | |
| Caudata | Salamandridae | *Salamandra salamandra* | 227 | 37 | 264 | JPN | |
| Caudata | Salamandridae | *Neurergus crocatus* | 72 | 65 | 137 | DEU | |
| Caudata | Salamandridae | *Ichthyosaura alpestris* | 100 | | 100 | CZE | |
| Caudata | Salamandridae | *Pleurodeles waltl* | 90 | 10 | 100 | CZE | |
| Caudata | Salamandridae | *Tylototriton shanorum* | 100 | | 100 | CZE | II |
| Caudata | Salamandridae | *Triturus pygmaeus* | 3 | 90 | 93 | USA | |
| Caudata | Salamandridae | *Neurergus strauchii* | 10 | 65 | 75 | HKG | |
| Caudata | Salamandridae | *Notophthalmus viridescens* | | 75 | 75 | HKG | |

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|---|---|---|---|---|---|---|---|
| Caudata | Salamandridae | *Cynops fudingensis* | 54 | | 54 | CZE | |
| Caudata | Salamandridae | *Cynops cyanurus* | 50 | | 50 | CZE, DEU | |
| Caudata | Salamandridae | *Triturus cristatus* | 50 | | 50 | JPN | |
| Caudata | Salamandridae | *Tylototriton shanjing* | 50 | | 50 | DEU | II |
| Caudata | Salamandridae | *Neurergus derjugini* | 10 | 25 | 35 | JPN | |
| Caudata | Salamandridae | *Pachytriton changi* | 30 | | 30 | CZE, DEU, JPN | |
| Caudata | Salamandridae | *Pachytriton brevipes* | 27 | | 27 | CZE, DEU, JPN | |
| Caudata | Salamandridae | *Tylototriton verrucosus* | 10 | 10 | 20 | DEU | II |

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|---|---|---|---|---|---|---|---|
| Caudata | Salamandridae | *Tylototriton vietnamensis* | | 20 | 20 | DEU | II |
| Caudata | Salamandridae | *Triturus karelinii* | 6 | | 6 | CZE, DEU | |
| Caudata | Salamandridae | *Triturus carnifex* | 3 | | 3 | DEU | |
| Caudata | Sirenidae | *Siren lacertina* | 10 | | 10 | USA | |
| Gymnophiona | Dermophiidae | Dermophis mexicanus | 6 | | 6 | USA | |
| Gymnophiona | Typhlonectidae | Typhlonectes natans | 31 | | 31 | DEU, USA, PER | |

CAN, Canada; CZE, the Czech Republic; COL, Colombia; DEU, Germany; HUN, Hungary; HKG, Hong Kong; IDN, Indonesia; JPN, Japan; MDG, Madagascar; MYS, Malaysia; PER, Peru; TGO, Togo; TWN, Taiwan; USA, the United States.