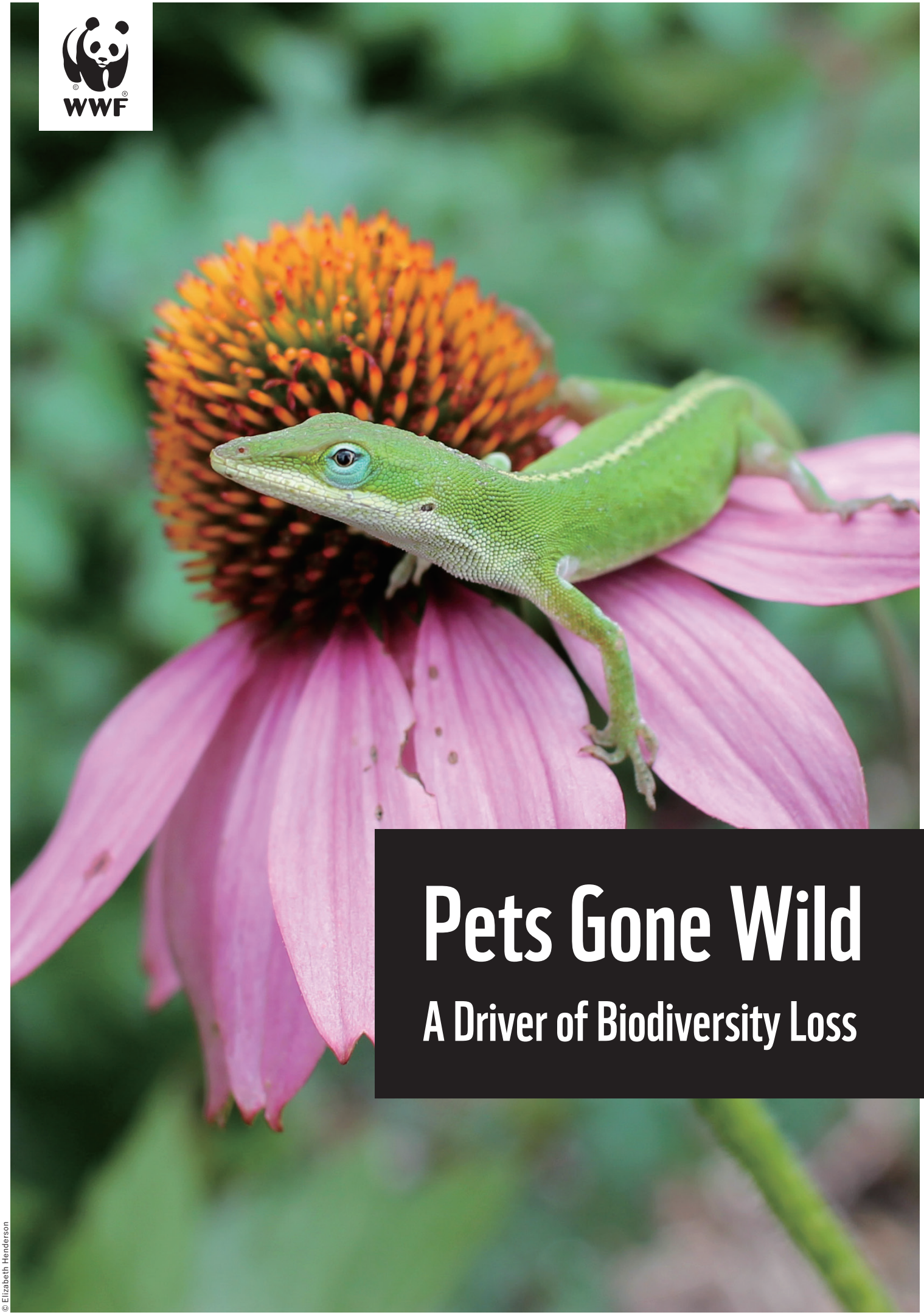
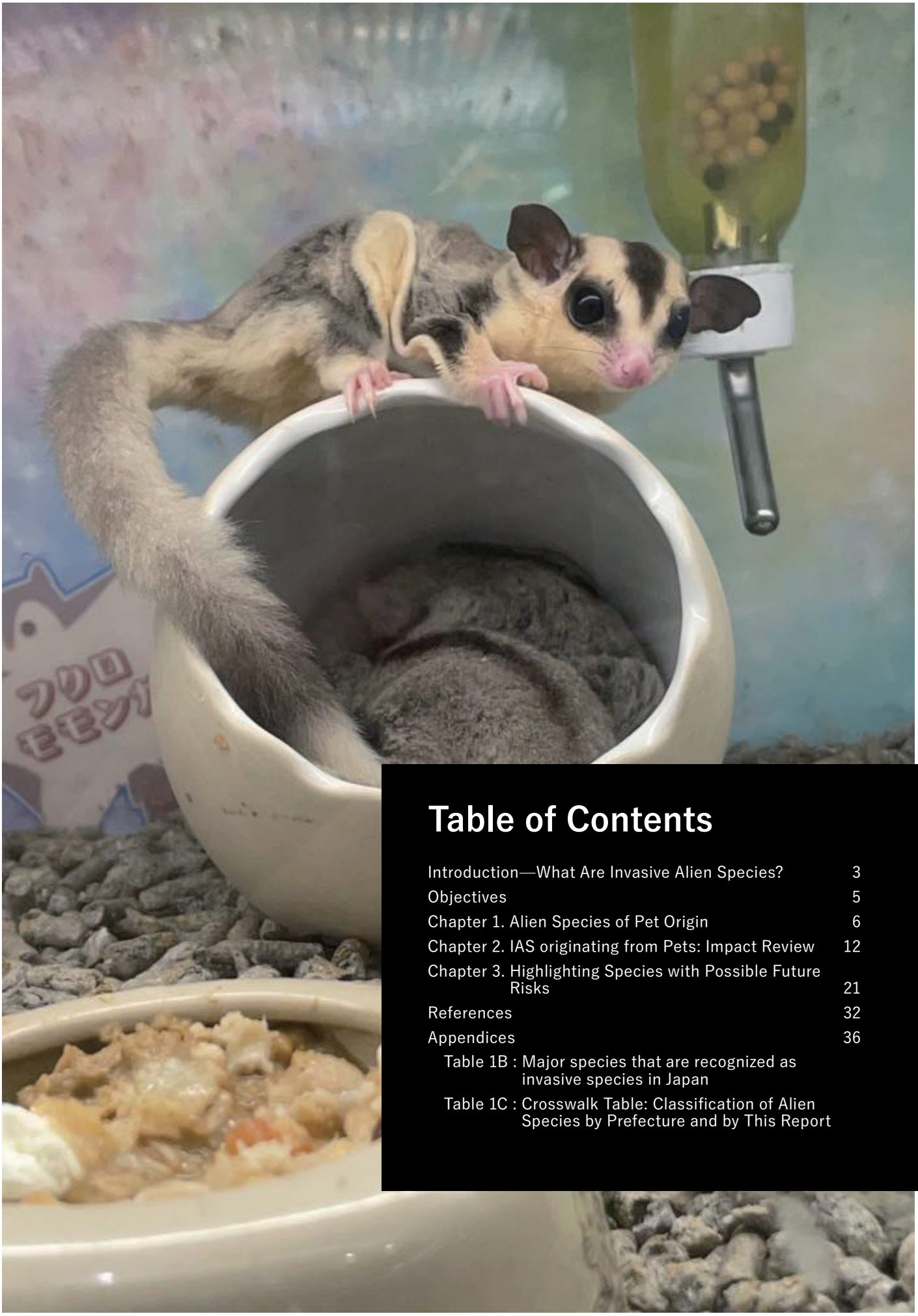


Pets Gone Wild

A Driver of Biodiversity Loss



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Introduction—What Are Invasive Alien Species?

More than 20 years have passed since the enactment of Japan's Act on the Prevention of Adverse Ecological Impacts Caused by Designated Invasive Alien Species (IAS Act). Since then, the terms "alien species" and "invasive species" have become widely recognized (Ministry of Environment; MoE, 2011). Alien species are fauna and flora transported, either intentionally or unintentionally, beyond their indigenous geographic range through human activities and subsequently established in new environments. Such species are not limited to those originating overseas; even native Japanese species can be considered alien when introduced into regions outside their natural distribution. Among alien species, those that adversely affect native biodiversity, ecosystems, or human livelihoods are categorized as invasive alien species (IAS).

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) identifies IAS as one of the five leading direct drivers of biodiversity loss worldwide (IPBES, 2019). The number and impacts of IAS are projected to grow (IPBES, 2023). In line with findings from IPBES global assessments, the Kunming-Montreal Global Biodiversity Framework (GBF), adopted at the 15th Conference of the Parties to the Convention on Biological Diversity (CBD), includes preventing the introduction and spread of IAS as a core target (CBD, 2022). In Japan's National Biodiversity Strategy 2023 - 2030 (MoE, 2023), measures addressing IAS—aligned with the GBF targets—are identified as key action goals. The document underscores the national importance of this issue, as evidenced by the use of the term "alien species" 73 times in the text.

The strategy specifies two concrete policy instruments for advancing IAS management:

(1) the Action Plan for the Prevention of Damage from Alien Species (hereafter, "Action Plan") and
(2) the revision of the List of Invasive Alien Species Affecting Ecosystems.

In March 2025, the second edition of the Action Plan was published (MoE et al., 2025). According to the Basic Policy for the Prevention of Damage by Designated IAS stipulated under Article 3 of the IAS Act, the Action Plan is a medium-term national strategy to counter invasive alien species in Japan (Figure 1A). The second edition addresses unfinished elements from the 2015 version. It strengthens datasharing and monitoring frameworks among diverse stakeholders, enhances prioritization processes, clarifies response approaches for alien species of domestic origin and genetic disturbance issues, and articulates each stakeholder group's roles and actions.

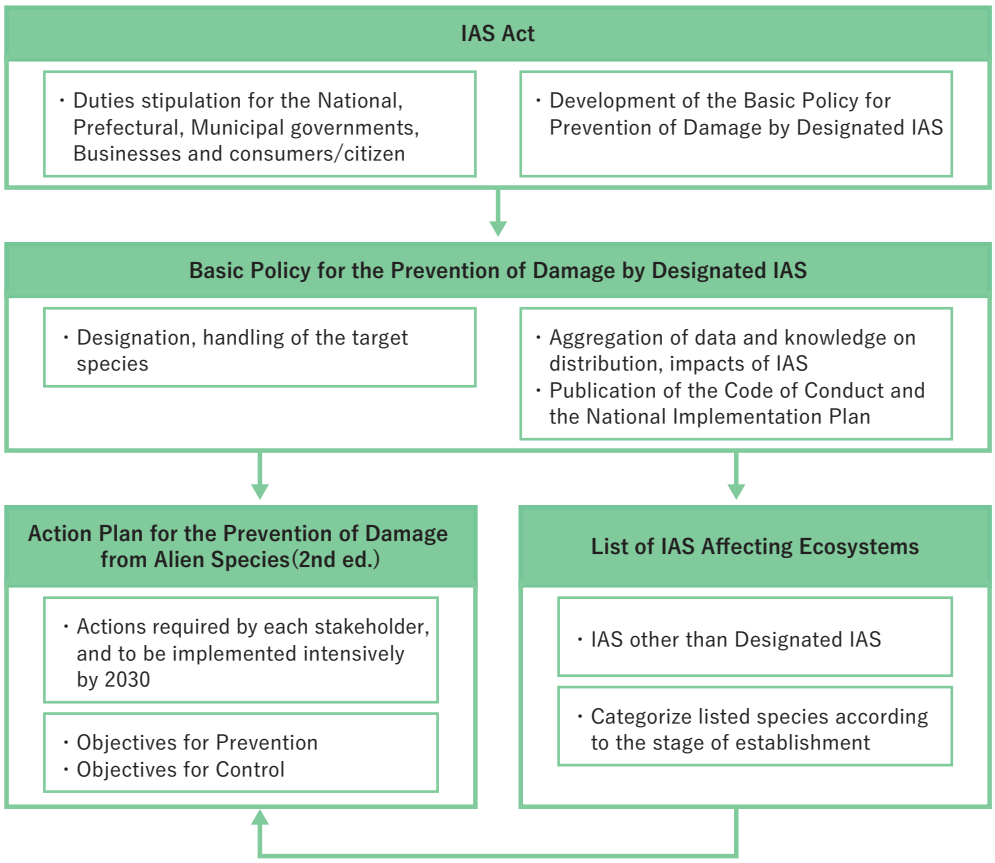


Fig 1A : Relationship among the IAS Act, the Basic Policy for Prevention of Damage by Designated IAS, the Action Plan, and the List of IAS.

Source: Action Plan for Preventing Damage by IAS, 2nd Edition (MoE et al., 2025)

Objectives

The 2015 edition of Japan's "List of Invasive Alien Species Affecting Ecosystems," currently under revision for publication in March 2026, includes 200 plant and 229 animal species. These species have reached Japan through diverse pathways. However, this report focuses on introduced species that were once kept as pets or for exhibition. Collectively referred to as alien species of pet origin, they share the distinctive characteristic of being imported, transported, sold, and kept alive throughout the supply chain.

Previous studies in Europe have shown that intentional release has been a leading pathway for the establishment of vertebrate alien species (Hulme et al., 2008). The scope of this analysis was limited to mammals, birds, and reptiles, as they represent major groups in both the international and domestic pet markets and are subject to business regulatory oversight under Japan's Act on the Welfare and Management of Animals (Act No. 105 of 1973)—focusing on species whose negative ecological or social impacts in Japan are already evident. Additionally, species recorded in the domestic pet trade were compared against major global IAS databases to identify taxa that may pose future risks of introduction, establishment, and expansion in Japan.

As Japan imports a wide variety of live wild animals for pet ownership and exhibition, understanding how this trade connects to the introduction and establishment of alien species is essential. This report aims to contribute to discussions on how Japan can better manage wildlife trade and use it to achieve national and global biodiversity recovery goals.

Chapter 1. Alien Species of Pet Origin

From Pets to Pests

The year 2025 marked the 20th anniversary of the enactment of Japan's IAS Act. Public awareness of alien species expanded in the 1990s, and the term now broadly refers to species introduced into Japan through human activities—intentional or otherwise—largely since the Meiji era. Alien species include those from overseas as well as native Japanese species that become alien when introduced to regions outside their natural distribution (MoE, 2012).

Multiple cases have documented unintentional introduction when insects, frogs, or reptiles are transported within cargo (MoE, 2012). For example, the invasive Red-necked Longhorn Beetle *Aromia bungii* has been introduced via imported wood materials (Saitama Biodiversity Center, 2024), while the land flatworm causing catastrophic impacts on endemic land snails in the Ogasawara Islands arrived through contaminated soil (Forestry and Forest Products Research Institute, 2006).

Intentional introductions have historically been for hunting and fishing (e.g., green pheasant *Phasianus colchicus karpowi* and largemouth bass *Micropterus salmoides*), fur production (e.g., nutria *Myocastor coypus*), pet ownership and exhibition, display in zoos or interactive facilities, and pest control (e.g., mongoose). Activities involving release into natural environments, such as hunting or pestcontrol introductions, can have immediate and severe impacts on native wildlife.

Although animals kept as pets or for exhibition purposes are generally held in controlled environments, their living conditions across all stages—from import and breeding to sale and ownership—create a higher inherent risk of escape. When owners can no longer manage them, abandoning them in the wild is common. Japan's report on animal cruelty and abandonment (MoE, 2022) documents many cases—primarily involving dogs and cats, but also rabbits, raccoon dogs, chickens, canaries, and hamsters. Abandonment has involved not only private owners but also zookeepers and pet shop employees.

Table 1A presents the proportion of animal species in the 2015 edition of Japan's List of IAS Affecting Ecosystems for which pet-related advertisements or exhibition use had been confirmed as of November 2025, or for which pet or exhibition use was referenced in the National Institute for Environmental Studies (NIES) Invasive Species Database <https://www.nies.go.jp/biodiversity/invasive/index.html> or documented in the literature. Over 40% of the listed mammal species are kept as pets, compared with over 80% of bird species and over 90% of reptile species.

Table 1A : Proportion of listed IAS used as pets or for exhibitions

	Listed taxa	Pets	Exhibition[2]
Mammals	41 taxa	17 taxa[1] 41.5%	18 taxa
Birds	15 taxa	12 taxa 80%	3 taxa
Reptiles	26 taxa	25 taxa 96%	N/A

1 If raccoon dogs (*Nyctereutes procyonoides*) are included, the total is 18 taxa (43.9%). However, it is uncertain whether raccoon dogs used or traded as pets in Japan correspond to the populations on the IAS list for the islands of Okushiri and Yakushima.
2 The numbers represent taxa displayed in zoos and similar facilities (excluding taxa used as pets). For domestically introduced alien species, the habitat ranges in the IAS list were not considered; counting was based solely on whether the taxa are used in such facilities.

Introduction Drivers

To better understand the broader influence of pet-related use on the emergence of alien species, information was compiled from the national List of Invasive Alien Species Affecting Ecosystems, the NIES Invasive Species Database, and prefectural alien species lists (Appendix Table 1B). Data from 37 prefectures were examined. The effort required to review the data varied considerably, as some prefectures merely listed designated IAS verified within their territory, whereas others —often with support from external experts—developed independent evaluation criteria and produced their own comprehensive lists of alien species.

Because classification methods varied across prefectures, species were reclassified into one of the following four unified categories for comparison: (1) established alien species requiring management; (2) established alien species with no confirmed impacts or only minor impacts; (3) unestablished or status-unknown alien species requiring preventive measures; and (4) others (Appendix Table 1C).

As shown in Appendix Table 1B, for species introduced into Japan or transported to other regions within the country, including domestically introduced alien species, mammals were most commonly introduced for exhibition (22 taxa), followed by the pet trade (20 taxa). Eight taxa were introduced for fur, seven taxa were for livestock purpose, six for hunting, five for pest control (e.g., venomous snake eradication), three for other purpose, and 15 taxa were classified as unintentional or unknown (Figure 1B).

Among birds (67 taxa), the pet trade was the most common purpose (51 taxa), followed by exhibition (42 taxa), hunting or hunting dog training (7 taxa), livestock (6 taxa), consumption (2 taxa), ceremonial release (2 taxa), and labour (1 taxon) (Figure 1C).

Reptiles followed a similar pattern as birds and mammals: of the 80 taxa listed, 61 were introduced for the pet trade, 35 for exhibition, 10 arrived unintentionally through transport pathways, such as cargo, eight were associated with consumption, two for pest control, and eight were categorized as unknown (Figure 1D).

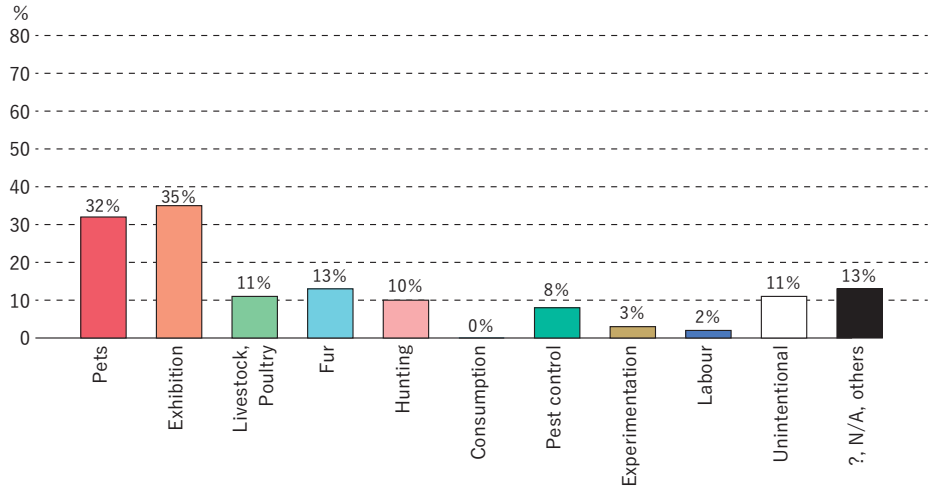


Fig 1B : Reasons for the Importation and Introduction of Animal Taxa that Have Become Alien Species (Mammals)

Because some taxa were used for multiple purposes, the combined percentages add up to more than 100%.
For example, the domestic rabbit was introduced for fur, meat, and pet purposes.

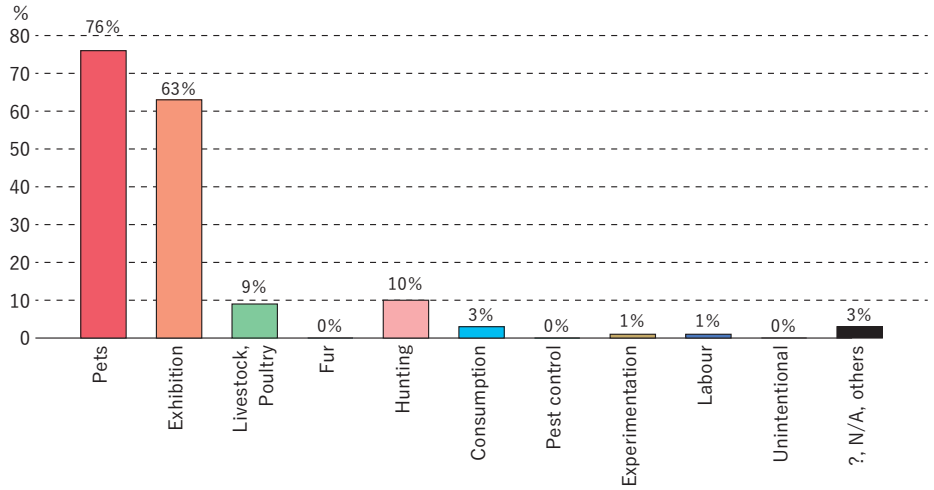


Fig 1C : Reasons for the Importation and Introduction of Animal Taxa that Have Become Alien Species (Birds)

Because some taxa were used for multiple purposes, the combined percentages add up to more than 100%.

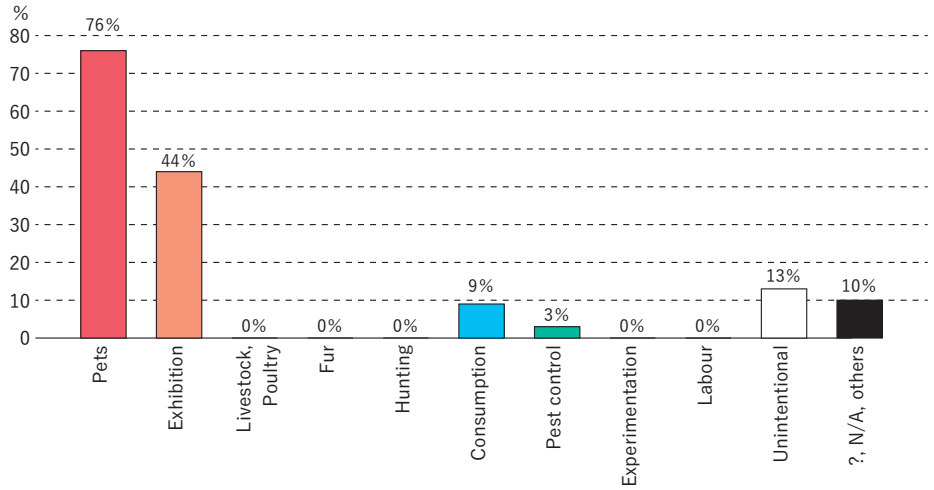


Fig 1D : Reasons for the Importation and Introduction of Animal Taxa that Have Become Alien Species (Reptiles)

Because some taxa were used for multiple purposes, the combined percentages add up to more than 100%.

In the case of mammals, the leading pathway for the establishment of alien species has been escape or abandonment from exhibition facilities. For birds and reptiles, pet-related releases—cage escape, accidental release, or intentional abandonment—are the primary pathways. These results align with global findings, including statistical evidence showing a strong correlation between commercial success in the pet market and invasion risk (Gippet & Bertelsmeier, 2021), as well as research demonstrating that the exotic pet trade has contributed to the emergence of many IAS worldwide (Lockwood et al., 2019).

Establishment

The mere introduction of a species—whether intentional or unintentional—into Japan or regions outside its original domestic range does not, in itself, result in the emergence of an IAS. Once released or escaped into the natural environment, individuals must first *establish* themselves in the recipient habitat. Establishment requires that the introduced species successfully secure an ecological niche within the new environment. This process is influenced by a range of factors, including physical conditions (such as temperature and humidity), the availability of food resources and shelter, and the presence or absence of predators and pathogens. The “niche opportunity” concept is an effective approach for assessing the likelihood of establishment (Washitani, 2007).

Where human changes to the environment have degraded or collapsed the communities that previously occupied these niches, the niche opportunities available to introduced species can expand substantially (Washitani, 2007). Establishment, defined by the Ministry of the Environment as “the process by which a population becomes capable of producing viable offspring on a continuing basis,” requires both survival and successful reproduction. Except for a small number of parthenogenetic species—such as the Brahminy blindsnake *Indotyphlops braminus*, now established on the Izu Islands—most species require reproductive partners. Consequently, many individuals must be released or escape into the wild before a self-sustaining population can emerge.

Research has demonstrated that propagule pressure—the number of individuals introduced and the frequency of introduction events—strongly affects the likelihood of establishment (Simberloff, 2009).

For alien species that originated as pets, both trade volume and duration are the critical components of the risk of establishment. Species such as the common raccoon *Procyon lotor* (Chapter 2), Pallas’s squirrel *Callosciurus erythraeus*, and Chinese hwamei *Garrulax canorus*, as well as the red-eared slider *Trachemys scripta elegans* (Wakao, 2025), designated as a Conditioned IAS, were imported in large quantities over several decades. Repeated escapes, accidental releases, and abandonments during this period likely resulted in their eventual establishment as invasive populations.

Alien species and infectious diseases

A significant adverse impact of alien species on human society is the transmission of zoonotic diseases—diseases shared between humans and animals (MoE, 2023). During the COVID-19 pandemic, global awareness and concern over the risks of disease spread associated with wildlife —particularly the trade in live wild animals—increased dramatically (UNEP-WCMC & JNCC, 2021; Wikramanayake et al., 2021). Although international wildlife trade has since rebounded, suggesting that risk awareness has not been fully translated into behavioral change, zoonotic diseases remain a serious public health concern. For this reason, Appendix Table 1B also includes information on the presence or absence of pathogens shared with humans or livestock. However, no independent disease surveillance was conducted; the information available is limited to records in the NIES database, prefectural alien species lists, and published literature; therefore, the resulting dataset is incomplete.

Among mammal species, 19 (29%) were reported to carry pathogens shared with other animals, and 21 (32%) were associated with zoonotic diseases. Documented examples include rabies, sarcoptic mange, leptospirosis, and toxoplasmosis.

Among bird species, 13 (19%) were reported to carry pathogens capable of infecting other animals and humans. Most records pertained to psittacosis and avian influenza. Given that all bird species are considered potentially susceptible to avian influenza viruses—albeit to varying degrees (Wallensten, 2007)—all avian alien species may act as potential sources of infection.

Among reptiles, only the common leopard gecko *Eublepharis macularius* was documented to share pathogens with other animals (1.3%). In this case, a fatal protozoan pathogen, *Cryptosporidium*, has been reported as a potential threat to *Goniurosaurus kuroiwae splendens*, an endangered gecko endemic to Tokunoshima Island. Among zoonotic diseases, 4 turtle species (5%) were associated with salmonellosis. Because reptiles are known to carry *Salmonella* at high prevalence rates of 50% - 90% (Ministry of Health, Labour and Welfare, 2013), the risk should be considered widespread across reptile taxa, similar to the avian influenza risk in birds.

Alien species influence infectious disease dynamics through two main pathways. The first is the introduction of novel pathogens or vectors into new regions, together with the alien species themselves. A well-documented example is the introduction of *Echinococcus multilocularis* into Hokkaido through early-20th-century importation of foxes and rodents for fur farming (Hayashi et al., 2023). The second pathway involves alien species altering ecological community structures, thereby changing the behavior and transmission patterns of pathogens already present. Research has shown that both mechanisms increase the risk of disease spread (Burkett-Cadena et al., 2021; Watari, 2025). Watarai (2025) emphasized that invasive species issues must be considered from ecosystem, economic, and public health perspectives.

Climate change is expected to amplify these risks further. As global warming progresses, the potential distribution ranges and active periods of disease vectors, such as mosquitoes and ticks, are expected to expand (NIES, 2022; Ryan et al., 2019), heightening the likelihood of vector-borne disease transmission. From a public health standpoint, further increases in disease risk caused by alien species must be avoided. Reflecting this concern, the second edition of Japan's Action Plan designates "parasite and infectious disease control through invasive species management" as Action 6, requiring coordinated action from all relevant stakeholders (MoE et al., 2025).

Chapter 2. IAS originating from Pets: Impact Review

A few of the invasive species introduced as pets have caused significant damage to ecosystems, the economy, society, and human well-being. The impacts caused by two prominent cases, namely common raccoons *Procyon lotor* and green anoles *Anolis carolinensis*, are examined in this chapter to underscore the negative consequences of IAS. Additionally, the Burmese python *Python bivittatus* in the U.S. is presented as a case study in the column section.

Common Raccoons

Common raccoons are native to North and Central America but have been introduced into 31 countries, mostly in Asia and Europe (GBIF, 2023b).

The earliest record of the introduction of common raccoons into Japan dates to 1962, when individuals escaped from a zoo in Aichi Prefecture (Agetsuma-Yanagihara, 2004). Significant numbers are reported to have been imported into Japan, especially after 1977, when the Japanese animated TV series “Rascal the Raccoon” gained widespread popularity. People were charmed by their cute appearance and began keeping them as pets, only to realize they could become aggressive as they grew, leading to many owners releasing them. It is now confirmed that common raccoons have been introduced into all but one prefecture in Japan (MoE, 2025).

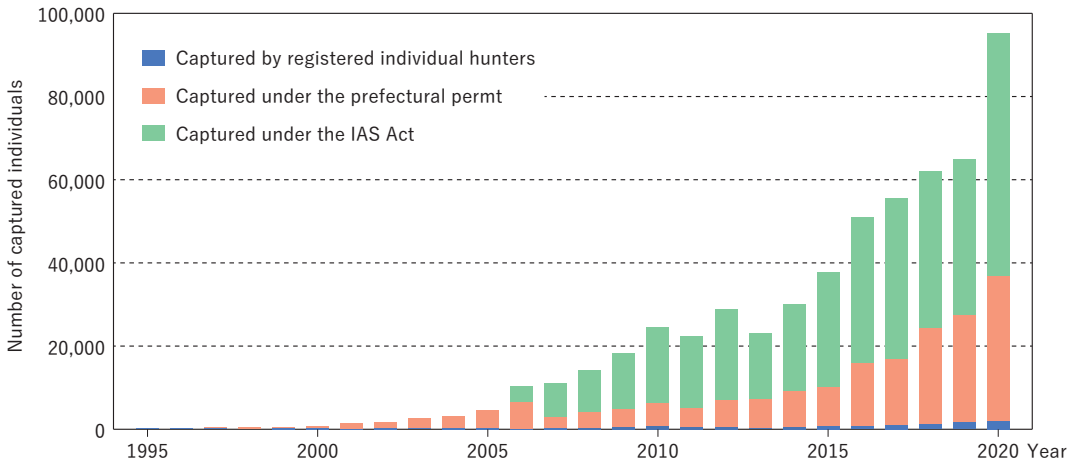


Figure 2A : Changes in the Number of Captured Common Raccoons

Data source: “Statistics on Wildlife Management” made available on the website of the Ministry of Environment (MoE, 2020).

Common raccoons were classified as Designated IAS under the IAS Act when the law was enacted in 2005, making it illegal to import, sell, move, keep, breed, or release them into the wild. The Japanese government and municipalities nationwide have been striving to capture the species for several decades, with a clear trend of increasing capture events, as shown in Figure 2A. Although it is difficult to determine whether this trend shows the success of effective capture or that the number of individuals in the wild has increased, there is no doubt that the species is far from eradication.

Ecosystem Impact

Common raccoons are known to disrupt Japan's native ecosystem in two main ways: predation and competition with native species.

Predation of native species

Common raccoons are opportunistic omnivores, preying on a wide range of fauna, including amphibians, fish, crustaceans, insects, birds' eggs and nestlings, small mammals, and reptile eggs. Although they have adapted to living in city and suburban areas, they prefer their natural wetland environments, where species with conservation risk also occur (Timm et al., 2016).

The raccoon preys on Japanese endemic species (Kuriyama et al., 2021; Kuriyama & Numata, 2020; MLIT & MoE, 2015; The Crayfish Research Group in Sapporo, 2025), some of which are identified in "Japan's Red List/Red Data Book" by the Japanese Ministry of Environment, as shown in Table 2A. There is a lack of evidence that common raccoons directly push a species toward extinction; however, as some of the species preyed on are native in small, limited areas, concerns remain over the future impacts of the presence of raccoons in these regions.

Table 2A : Endemic Species Predated by Common Raccoons

Name of the Species	Japan's Red List/Red Data Book
Abe's salamander *Hynobius abei*	Critically Endangered（CR）
Japanese Crayfish *Cambaroides japonicus*	Vulnerable（VU）
Tokyo Salamander *Hynobius tokyoensis*	Vulnerable（VU）
Setouchi Salamander *Hynobius setouchi*	Vulnerable（VU）
Yamato Salamander *Hynobius vandenburghi*	Vulnerable（VU）
Japanese Clouded Salamander *Hynobius nebulosus*	Vulnerable（VU）
Black-spotted Frog *Pelophylax nigromaculatus*	Near Threatened（NT）
Sapporo Snail *Euhadra brandtii sapporo*	Near Threatened（NT）
Ezo Salamander *Hynobius retardatus*	Data Deficient（DD）

Competition with native species

Invasive species also disrupt local ecosystems by creating competition with native species (Catford et al., 2018). Reports suggest possible competition for habitat and prey between common raccoons and Japanese raccoon dogs *Nyctereutes viverrinus*, including the Hokkaido raccoon dog subspecies *Nyctereutes viverrinus albus*, which is endemic to Hokkaido prefecture; however, no direct evidence indicates that common raccoons pose a significant threat to Japanese raccoon dogs (Ikeda et al., 2004). Potential competition with the Ural owl *Strix uralensis* over nesting sites has also been reported, as both species prefer large tree cavities (Kobayashi et al., 2014).

Impacts on Agriculture and the Economy

While common raccoons have had several adverse impacts, the most well-known negative impact is on agricultural crops, such as sweet corn, rice, strawberries, watermelons, and grapes. The amount of aggregated crop damage across Japan demonstrates a fluctuation pattern, reaching its peak in 2018, followed by a few years of declining damage and increasing afterward, as shown in Figure 2B.

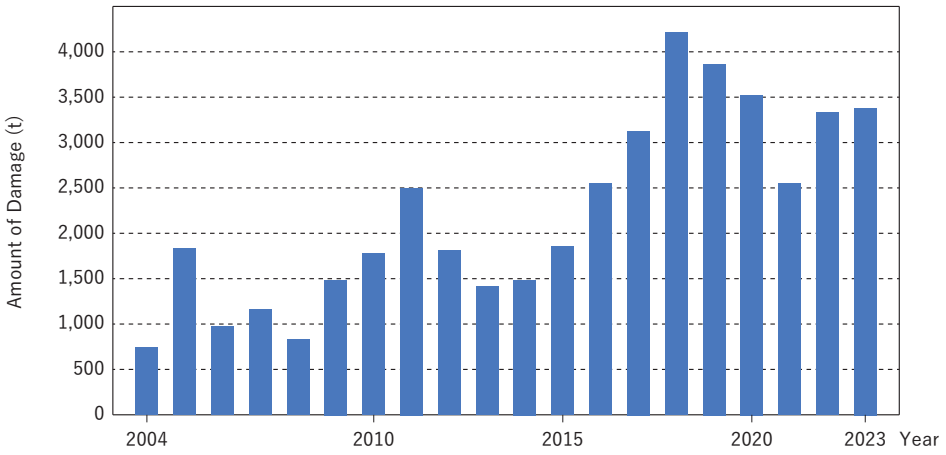


Figure 2B : Changes in the amount of agricultural crop damage

Data source: “Status of Crop Damage” on the website of the Ministry of Agriculture, Forestry and Fisheries Japan (MAFF, 2023)

The economic loss derived from crop damage has shown an overall increasing pattern, reaching its peak in 2023 with JPY 480,000,000 (over USD 3,000,000) in losses, the most recent record available (Figure 2C).

Common raccoons also put significant pressure on the budget of all stakeholders striving to reduce the number of individuals in their jurisdictions. According to the fiscal budget review on invasive species, municipalities that implemented measures to eradicate common raccoons have, on average, spent JPY 20,000 per individual (Ministry of Finance, 2025). By extension,

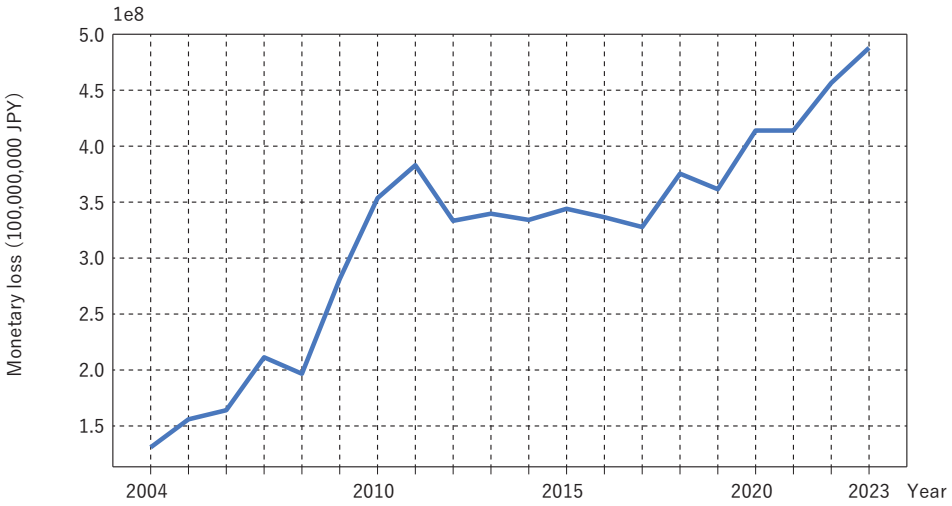


Figure 2C : Monetary Losses Caused by Common Raccoon Crop Damages

Data source: “Status of Crop Damage” on the website of the Ministry of Agriculture, Forestry and Fisheries Japan (MAFF, 2023).

capturing almost 100,000 individuals in 2020 across Japan might have cost up to JPY 1.9 billion (96,049*20,000).

Impact on Human Health

Common raccoons carry various kinds of zoonotic pathogens, some of which have potentially serious human health consequences if transmitted. Pathogens can be transmitted to humans through direct or indirect contact. Table 2B lists the major infectious diseases transmitted by common raccoons to humans, either directly or indirectly via intermediate hosts, such as ticks.

Table 2B : Major zoonotic diseases which Common Raccoons may carry

Transmission Means	Name of the Infectious Disease	Major Symptoms
Direct transmission	Rabies	Fever, headache, fatigue, muscle pain, confusion, hallucinations, sweating, hydrophobia, and difficulty breathing; most cases progress to death.
	Toxoplasmosis	Often asymptomatic, pregnant women may miscarry; immunocompromised individuals may cause encephalitis.
	Echinococcosis	Asymptomatic in early stages; in later stages, abdominal pain, fatigue, and fever; in terminal stages, respiratory failure and impaired consciousness
	Salmonella infection	Fever, abdominal pain, vomiting, diarrhea, and headache
	Campylobacter infection	Abdominal pain, fever, diarrhea, vomiting, headache, chills, and fatigue
	Yersinia infection	Fever, abdominal pain, vomiting, diarrhea, and headache

	Raccoon roundworm larva migrans	Fever, neurological and psychiatric symptoms, visual impairment, encephalitis; in severe cases, it can be fatal.
	Severe acute respiratory syndrome	Fever, cough, chills, and difficulty breathing
	Dermatophytosis (fungal skin infection)	Hair loss, rash, itching, and abscesses
	Scabies	Severe itching and rash
Indirect transmission	Japanese spotted fever	Fever, headache, and fatigue
	Scrub typhus	High fever, headache, rash, and fatigue
	Severe fever with thrombocytopenia syndrome	Fever, abdominal pain, vomiting, diarrhea, and headache; in severe cases, impaired consciousness.
	Japanese encephalitis	High fever, headache, nausea, convulsions, and paralysis; in the worst cases, death.
	Leptospirosis	Fever, headache, muscle pain, chills, and nausea; severe cases may involve jaundice, kidney failure, or heart failure.
	Hepatitis E	Fever, fatigue, loss of appetite, vomiting, and abdominal pain; severe cases may involve jaundice and enlarged liver.
	Campylobacter food poisoning	Diarrhea, abdominal pain, fever, nausea, headache, and fatigue
	Yersinia food poisoning	Diarrhea, abdominal pain, fever, nausea, headache, and fatigue

Created using information on the website of the Tokyo Metropolitan Government Bureau of Environment (Bureau of Environment, Tokyo Metropolitan Government, 2023).

Although rabies Rabies virus and Baylisascariasis *Baylisascaris procyonis* have not been reported among the wild common raccoons in Japan, serious cases have been reported elsewhere. For example, in the U.S. in 2023, a person died from being infected by a rabid raccoon, and 1,085 of 3,760 recorded animal rabies cases involved raccoons (Boutelle et al., 2025). These cases highlight the potential public health risks posed by invasive species that originated as pets.

Damage to Cultural Heritage and Properties

Comprehensive research on damages to historical buildings and artifacts is limited. However, a survey of 489 shrines and temples with Nationally Registered Cultural Properties across Japan found that the common raccoon caused damage to 113 of the 489 (23.1%) samples. Typical damage reported includes excrement, species inhabitation, damage to pillars and walls, and ruined gardens (Yonejima et al., 2018).

Common raccoons can also enter residential houses and may use the attic or underfloor as shelters, causing significant structural damage, potentially costing several hundred thousand JPY to repair and implement measures to prevent future intrusions (Ohba, 2021).

Green Anole

The green anole is native to the southern U.S. but its introduction has been recorded in 10 countries or islands worldwide (GBIF, 2023a). It is a small to medium-sized arboreal diurnal lizard often found in forests and shrublands in subtropical and tropical regions (Frost & Hammerson, 2020). In Japan, the species is established in the Ogasawara Islands and Okinawa Islands, both of which comprise islands of various sizes and are known for their tropical climate.

The first known record of the species in the wild in Japan is in 1966 in Chichi-jima (island) in Ogasawara. The species was possibly introduced from two different pathways: accidental introduction via shipment containers arriving from Guam Island and through escape or release from pet owners on the island. The species is believed to have spread its turf steadily in the 1970s and 1980s owing to the lack of significant predators on the island. The species has been brought to the neighboring islands either intentionally or accidentally in the following decades, resulting in its spread on two other major islands (Haha-jima and Ani-jima) in the Ogasawara archipelago (Suzuki, 2000).

The number of green anoles in the wild likely differs significantly across islands. However, it is estimated that the population density is hundreds to a few thousand individuals/ha, totaling several million individuals in the wild throughout the Ogasawara archipelago (Toda et al., 2009).

The Japanese government has begun a concerted effort to eradicate the species from the area, allocating an estimated JPY 1.2 billion from 2014 to 2022 for species control (JUDGIT, 2025). Ongoing efforts aim to decrease the population.

Ecosystem Impact

The greatest concern about the presence of the green anole is its impact on the native ecosystem in one of the richest environments in Japan. The Ogasawara Islands and parts of the Okinawa Islands were registered as World Natural Heritage in 2011 and 2021, respectively, for their unique ecosystems that host various endemic species.

Predation of native species

Approximately 28% of insects in the Ogasawara Islands are considered endemic (about 379 species) (Kanto Regional Environmental Office, MoE, 2021), some of which are believed to be nearing extinction from green anole predation. Species targeted by green anoles are all diurnal, small to medium-sized, and lack defense mechanisms, such as poisons.

The most prominent case is the Ogasawara holly blue *Celastrina ogasawaraensis*, which was commonly observed in Chichi-jima before 1980 (Takakuwa & Suda, 2004), but has not been seen in the wild since 2020. With no ongoing successful breeding project, it is listed as critically endangered (CR) in “Japan’s Red List/Red Data Book” and is most likely extinct (Nakahama et al.,

2024). The Ogasawara holly blue was put under high predation pressure as they were likely easily caught by the green anoles while the female laid eggs or the male expressed occupying behavior on trees around the forest edges (Karube, 2005; Takakuwa & Suda, 2004).

Four of five endemic dragonfly species, namely, Ogasawara bluet *Indolestes boninensis,* Ogasawara emerald *Hemicordulia ogasawarensis,* Bonin Islands bluet *Ischnura ezoin,* and Ogasawara red dragonfly *Boninthemis insularis*, were pushed to near extinction in Chichi-jima and Haha-jima by the green anoles' predation (Karube, 2009). The first two species are CR, and the latter two are vulnerable (VU) in "Japan's Red List/Red Data Book." They are preyed upon while resting on the tips of branches. It is estimated that only a few hundred individuals of this species remain in satellite islands, making them one of the most endangered dragonfly species in the world.

In addition to species pushed to near extinction by green anoles, many species of native bees, longicorn beetles Cerambycidae, jewel beetles Buprestidae, and weevils *Ogasawarazo spp*. are also believed to have disappeared or decreased their population drastically after the spread of green anoles (Makihara et al., 2004; Takahashi et al., 2014).

Competition with Other Species

A possible competition exists with the native lizard species Ogasawara snake-eyed skink *Cryptoblepharus nigropunctatus* over prey, and its juvenile individuals may be preyed on by green anoles (Toda et al., 2009).

Although the impact is not as severe as in the Ogasawara Islands, green anoles are known to cause competition with the native green grass lizard *Takydromus smaragdinus* and Okinawa tree lizard *Japalura polygonata* in parts of Okinawa where they are established (Okinawa prefecture, 2025).

Indirect effect

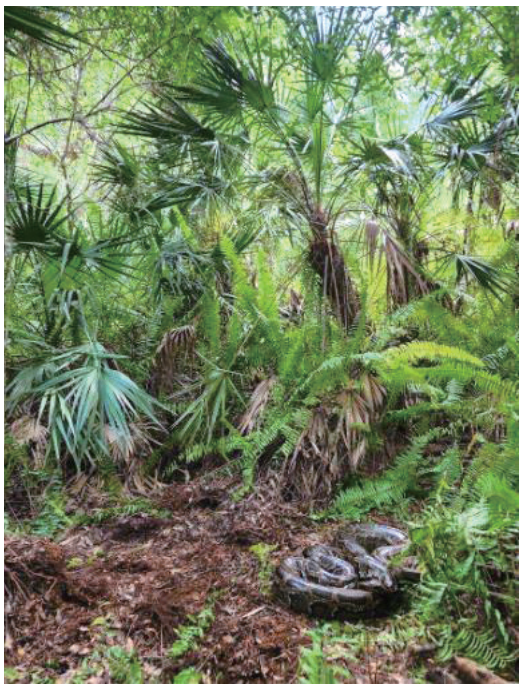
In addition to the direct effect of green anoles on endemic species, they also pose an indirect threat into the native environment. For example, they disrupt the plant ecosystem on the Ogasawara Islands by preying on the endemic honeybee species (a monophyletic clade, *Anthophila*, within the superfamily Apoidea) that play an important role as pollinators, resulting in a cascading declining effect on the successful pollination of native plant species (Abe, 2009).

Endemic honeybees were commonly spotted in the 1970s before the green anoles started to spread into their habitat. However, starting in the 1980s, the endemic bee species in the Chichi and Haha Islands have sharply declined, and five of the nine endemic bee species are becoming more difficult to observe in neighboring islands. As the endemic bee population declines, the proportion of Western honeybee populations increases, possibly resulting in a change in pollination patterns across the Islands. A study shows that Western honeybees prefer alien plants

over native plants, raising concerns about how plant landscapes could change over time.

Column : Burmese Pythons in the US: The Invasive Species Reshaping an Ecosystem

Invasive species are estimated to have caused at least USD 1.22 trillion in economic losses in the U.S. over the last 60 years (Fantle-Lepczyk et al., 2022). Florida is particularly vulnerable to invasive species due to its subtropical climate, long growing season, and limited freezing temperatures, which present ideal conditions for introduced tropical species to survive and sometimes thrive. Of the many nonnative species that have established breeding populations in Florida, Burmese pythons *Python bivittatus* far exceed the rest in terms of the scale of their deleterious impact.



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Burmese pythons are native to Northeastern India, Southern China, Southeast Asia, and the Malay Peninsula. They were first observed in the U.S. in 1979 in the Florida Everglades. Because of their adaptability to various habitats and a generalist diet, they quickly established a breeding population and became an invasive species by 2000 (Campbell & Freedman, 2022; Guzy et al., 2023). Many experts believe their introduction was caused by the release of pets, as they are commonly imported to the U.S. for the pet trade (Willson et al., 2011). In addition to the growing popularity of exotic pets, live animals are increasingly available for sale online. This enables people to obtain exotic pets without knowledge of how to care for the animal properly, how large it may grow, or how long it might live, increasing the risk of these pets escaping or being released (Lockwood et al., 2019).

As a highly prolific species with no natural predators in Florida, a conservative estimate is that tens of thousands of Burmese pythons are now living in the Florida Everglades, despite being introduced less than 50 years ago (USGS, 2025b). The ecological and economic impacts have been extensive. Burmese pythons prey on a wide variety of native species, from American alligators *Alligator mississippiensis*, great blue herons *Ardea herodias*,

and threatened wood storks *Mycteria americana*, to smaller animals such as house wrens *Troglodytes aedon*, shrews, and the endangered Key Largo woodrat *Neotoma floridana smalli* (Guzy et al., 2023). A 2012 study found that bobcat *Lynx rufus* populations have declined by 87.5%, raccoons *Procyon lotor* and opossums *Didelphis virginiana* have declined by approximately 99%, and marsh rabbits *Sylvilagus palustris*, cottontail rabbits *Sylvilagus floridanus*, and foxes *Urocyon cinereoargenteus* and *Vulpes vulpes* are no longer present in the Everglades National Park, coinciding with the introduction of Burmese pythons (USGS, 2025a). In addition to direct predation on and competition with native species that disrupt the healthy functioning of local ecosystems, Burmese pythons also facilitate the spread of pathogens and parasites to native species. They introduced a new lung parasite *Raillietiella orientalis* to the region, which is being transmitted to native snakes with unknown impacts (Miller et al., 2017). Additionally, reduced mammal diversity resulting from Burmese python predation has increased zoonotic Everglade virus infection in vector mosquitoes, thereby elevating the risk of human transmission (Burkett-Cadena et al., 2021).

Since 2022, USD 3 million has been allocated annually to the Florida Fish and Wildlife Conservation Commission to remove invasive pythons from the Everglades. This is an increase from the USD 1 million budget allocated in fiscal year 2020 - 2021 (Florida Office of the Governor, 2020) and does not include the hundreds of millions of dollars spent on research and endangered species recovery for those preyed on by the pythons (USFWS, 2012). In 2012, Burmese pythons were included on the list of Injurious Wildlife under the Lacey Act by the U.S. Fish and Wildlife Service, which prohibits their importation or transport over state lines without a permit. As of 2021, they are prohibited in Florida (Velasco et al., 2022).

There is a wide range of tools and techniques for snake management, including visual and biological surveys, tracking, and trapping to locate and capture pythons. However, each has varying success in population control. A combination of control tools can be effective for reducing python populations in small areas, but scaling up management is challenging due to low detection rates of pythons and the vast, often inaccessible Everglades terrain. Completely eradicating Burmese pythons from the Florida Everglades is unlikely. However, more research is needed on longer-term solutions, such as genetic biocontrol, which show promise for large-scale management, despite potential risks to themselves and to other species (Guzy et al., 2023). In addition to management of the invasive populations, of equal importance is education of snake owners on alternative options to release unwanted pets and enforcing existing regulations to prevent the introduction of additional pythons and other nonnative species.

(written by Sara Grange, WWF-US)

Chapter 3 : Highlighting Species with Possible Future Risks

For the example species described in the previous chapter, eradication becomes increasingly difficult as the species spreads, thereby continuing to impose substantial economic, environmental, and social burdens on stakeholders where it is present.

To minimize the negative impacts of invasive species originating from the pet trade, it is essential to identify species traded in the pet market that have a high potential to become invasive species.

In this chapter, several online datasets on invasive species were used to determine whether species traded in the Japanese pet market are recorded as invasive in other countries, whether they are known to have caused impacts, and whether they pose a risk of becoming invasive in Japan. Although the simple fact that a species recorded as invasive in other countries may not be a useful piece of information on its own, as those species have managed to establish themselves outside their native range, they may have a certain level of competitiveness, adaptability, and fecundity. Moreover, given that the pet trade is known to favor invasive species (Gippet & Bertelsmeier, 2021), it is crucial to assess the invasiveness of traded species in Japan to identify those with potentially higher risks and to develop preventive measures accordingly.

Notably, this work is not a risk assessment of traded species; rather, it is a preliminary study to inform experts and policymakers in the field in designing future research, conducting comprehensive assessments, and implementing policy initiatives.

Methods

To determine whether species traded in the pet market in Japan are recognized as invasive species, the following datasets were used:

Market Data

Species of target taxonomic classes (i.e., mammal, bird, and reptile species) excluding domesticated animals[1], identified at species or subspecies level[2] with records of more than 10 individuals, were extracted from the following two market surveys conducted or led by WWF Japan.

Reptile Trade Fair

A physical spot survey was conducted at a major reptile fair in Japan held at Tokyo Big Site on

[1] Guinea pigs, rabbits, ferrets, and chickens etc.

[2] Species names were recorded at face value, henceforth may include mislabeled species.

October 18 - 19, 2025. This event brings together more than 80 pet shops and breeders to sell exotic animals from many taxonomic groups.

Pet Shops in Major Shopping Malls

Physical spot surveys were conducted at 13 pet shops/cafes operating in one of the largest shopping malls during the period of May - September 2025.

Invasive Species Datasets

Species Invasiveness and Presence in Other Countries/Regions

◯ Country Compendium of the Global Register of Introduced and Invasive Species

The Global Register of Introduced and Invasive Species (GRIIS) is a dataset of validated and verified national and subnational checklists of invasive species for specific geographic units, provided by over 190 countries and made accessible on its website (https://griis.org/dataset/search) and on the GBIF website (https://www.gbif.org/). The compendium aggregates 196 GRIIS country checklists, including reporting country, species occurrence, and invasiveness status, published to promote the accessibility and interoperability of these valuable checklists (Pagad, Bisset, Genovesi, et al., 2022).

The dataset used in this study is “V1_0.csv” (Pagad, Bisset, & McGeoch, 2022).

IAS with Known Impacts

◯ Environmental Impact Classification for Alien Taxa

The Environmental Impact Classification for Alien Taxa (EICAT) classifies alien species into different impact categories by the species impact on the environment, developed and maintained mainly by the IUCN Invasive Species Specialist Group, and its data are made available on the IUCN’s Global Invasive Species Database (GISD: https://www.iucngisd.org/gisd/).

Species of targeted taxonomic groups categorized as having massive (MV), major (MR), moderate (MO), or minor (MN) impact were extracted from the website in December 2025.

◯ InvaCost (Economic Impacts)

InvaCost is the most up-to-date, comprehensive, and standardized dataset of descriptions of economic cost-related records worldwide under IAS (https://invacost.fr/en/accueil/). It was developed by a research group at the University of Paris-Saclay and includes over 13,000 cost-related records extracted from thousands of sources in 14 languages to describe, compare, and analyze the economic impacts of IAS.

The dataset version used in this study is “InvaCost_database_V4.1.xsls” (Diagne et al., 2020).

◯ Global Impacts Dataset of Invasive Alien Species (Impacts on Nature and Human Activities)

The Global Impacts Dataset of Invasive Alien Species (GIDIAS) includes 3,353 IAS and their

impact on nature, nature's contributions to people, and the quality of life, compiled from over 6,700 published sources (Bacher et al., 2025a). It uses the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services conceptual framework to describe and address the impacts of IAS through the lens of interactions between nature and people.

The dataset version used for this study is "GIDIAS_20250417_Excel.xlsx" (Bacher et al., 2025b).

Possibility of Species Becoming IAS in Japan

◯ CABI Horizon Scanning Tool

The CABI Horizon Scanning Tool (HST) is a decision support tool that helps identify potential invasive species that might enter a particular geographic "area at risk" from other "source areas" (https://www.cabi.org/HorizonScanningTool). It uses the CABI compendium datasheets (https://www.cabidigitallibrary.org/journal/cabicompendium/about) to identify species that might become invasive by checking, for instance, whether the species is present in neighboring areas, is traded, or shares similar climates.

The species list was downloaded on January 9, 2026, with "area at risk" set to "Japan" and species taxa set to "vertebrates."

Limitations of Data

In this study, the scope of interest was limited to only three taxonomic classes, i.e. mammal, bird and reptile. However, various nonnative species from other taxa are often traded in Japan (e.g., amphibians, (Kitade & Wakao, 2022)). Additionally, there was a significant discrepancy in the number of individuals recorded in market surveys across the targeted taxonomic classes. Furthermore, the trade market data used in this study were collected from spot surveys rather than long-term monitoring surveys, which may have excluded important species traded in much higher volumes in the Japanese pet market and that require greater assessment of potential invasiveness.

Data included in large datasets collated by experts and government officials and downloaded for this study are relatively reliable. However, comprehensive datasets often take time to be made public, potentially excluding recent data. There is also the possibility that data are skewed toward certain taxonomic groups due to differences in the extent of research on invasiveness.

Results

Combining and extracting applicable records from two spot surveys yielded 148 unique species or subspecies, totaling 4,969 individuals.

Record of Invasiveness

Filtering the GRIIS dataset with "occurrenceStatus": "PRESENT," "establishmentMeans": "ALIEN," and isInvasive": "INVASIVE" for the targeted taxonomic classes resulted in the identification of

251 unique species. Of the 148 species identified in the market survey, 21 were among the 251 species recorded as IAS in 16 unique countries/regions (Table 3A).

Table 3A : Countries that recorded species sold in the Japanese pet market as IAS and present in their territories.

Class	Common name	Scientific name	Number of individuals in market surveys	Countries recording species as IAS
Aves	Rosy-faced Lovebird	*Agapornis roseicollis*	16	Israel
	Monk Parakeet	*Myiopsitta monachus*	11	Chile, Israel, Italy, Mexico, Spain, and United Kingdom
Reptilia	Ball Python	*Python regius*	299	Mexico
	Carpet Python	*Morelia spilota*	116	Mexico
	Red Cornsnake	*Pantherophis guttatus*	104	Bahamas
	Common Leopard Gecko	*Eublepharis macularius*	90	Mexico
	Tokay Gecko	*Gekko gecko*	85	Mexico, United States of America
	Common Green Iguana	*Iguana iguana*	80	Federated States of Micronesia, Fiji, Indonesia, United States of America
	Rainbow Boa	*Epicrates cenchria*	50	Mexico
	Veiled Chameleon	*Chamaeleo calyptratus*	44	Mexico
	Florida Red-bellied Cooter	*Pseudemys nelsoni*	39	Mexico
	Common Water Monitor	*Varanus salvator*	34	Mexico
	Green Tree Python	*Morelia viridis*	33	Mexico
	Savanna Monitor	*Varanus exanthematicus*	29	Mexico
	Giant Madagascar Day Gecko	*Phelsuma grandis*	27	Mauritius
	Nile Monitor	*Varanus niloticus*	22	Mexico, United States of America
	Chinese Softshell Turtle	*Pelodiscus sinensis*	20	Latvia, Thailand
	Black-and-white Tegu	*Salvator merianae*	16	Brazil
	Amur Rat Snake	*Elaphe schrenckii*	11	Sweden
	Chinese Water Dragon	*Physignathus cocincinus*	11	Mexico
	Common Spiny-tailed Iguana	*Ctenosaura similis*	10	United States of America

Impacts on the Environment, Economy, and Human Activities

EICAT

Filtering the dataset for the targeted taxonomic classes[3] identified 72 unique species, one of which, the Monk parakeet *Myiopsitta monachus*, was assessed as having a minor environmental impact and was recorded in the market survey.

Monk parakeets impact the environment through competition over food and habitat with other species, predation of other species, and transmission of diseases to native species.

[3] Notably, only species of class birds were found in the dataset among the targeted classes, excluding mammals and reptiles from the evaluation.

InvaCost

Filtering the dataset of the targeted taxonomic classes and excluding records from Japan[4] identified 157 unique species, five of which, namely, Monk parakeet, four-toed hedgehog *Atelerix albiventris*, common green iguana *Iguana iguana*, California kingsnake *Lampropeltis californiae*, and black-and-white Tegu *Salvator merianae*, were recorded in the market survey.

The estimated total economic cost incurred by these species was USD 6,960,831[5], reported across six countries (Table 3B). The Monk parakeet had the highest recorded cost, at USD 6,048,193.

[4] This section aims is to identify the impacts of invasive species recorded in other countries; thus, records reported by Japan were excluded. The same applies to the other following dataset filtering processes as well.

[5] Column "Cost_estimate_per_year_2017_USD_PPP" was used to calculate this value.

Table 3B : Cost incurred by IAS in other countries that were found in the Japanese pet market.

Class	Common Name	Scientific Name	Recorded Country	Cost ($USD)
Aves	Monk Parakeet	*Myiopsitta monachus*	Mexico	53,420
			Spain	383,254
			United Kingdom	60,824
			United States of America	5,550,695
Mammalia	Four-toed Hedgehog	*Atelerix albiventris*	Spain	2,357
Reptilia	Black-and-white Tegu	*Salvator merianae*	Brazil	5,682
			United States of America	8,641
	California Kingsnake	*Lampropeltis californiae*	Spain	848,031
	Common Green Iguana	*Iguana iguana*	France	47,472
			United States of America	455
Total Cost				$ 6,960,831

GIDIAS

Filtering the dataset for the targeted taxonomic classes and excluding records from Japan identified 232 unique species, three of which—Budgerigar *Melopsittacus undulatus*, Monk parakeet, and chinchilla *Chinchilla lanigera*—were recorded in the market survey[6]. However, no documented impacts were found for chinchilla.

Both Budgerigars and Monk Parakeets adversely affected the local ecosystem by competing with other bird species. Monk parakeets were also recorded as having a negative impact on the energy supply by nesting on electric utility substations and support structures.

Examining the Possibility of Species becoming Invasive in Japan

CABI HST

Filtering the CABI HST dataset for the targeted taxonomy identified 153 unique species. Among the, six were recorded in the market survey: ball python *Python regius*, red cornsnake *Pantherophis guttatus*, California kingsnake, Jackson's three-horned chameleon *Trioceros jacksonii*, Nile monitor *Varanus niloticus*, and common spiny-tailed Iguana *Ctenosaura similis*.

Combined Results

Among the 148 unique species recorded in market surveys, 26 (17.6%) were found in one or more invasive species datasets used for this study. The species recorded in the most datasets was the Monk parakeet, appearing in four datasets, followed by seven other species including Ball Pythons recorded in two datasets; the remaining 18 species were recorded in one dataset (Table 3C).

Among the 26 identified species, the common green iguana and Chinese softshell turtle are categorized as "Invasive Species with the Utmost Caution" in the "List of IAS Affecting Ecosystems," which is not legally regulated but recognized as species with a greater need to take measures due to their known adverse impacts. The common leopard gecko is also categorized as "Other Invasive Species to Prevent Establishment" in the aforementioned list, having been introduced but has no record of establishment yet. Furthermore, Monk parakeets and Budgerigars have been either recorded as established or breeding in the wild in Japan in the past. Although the hedgehog traded in Japan is the four-toed hedgehog *Atelerix albiventris*, hedgehog species in the genus *Erinaceus* are considered "Designated IAS."

[6] Notably, only species of class birds and mammals were found in the dataset among the targeted classes, excluding reptiles from examination.

Table 3C: Species traded in the Japanese pet market found in invasive species-related datasets.

Class	Common name	Scientific name	Recorded datasets
Aves	Monk Parakeet	*Myiopsitta monachus*	GRIIS, EICAT, InvaCost, and GiDIAS
	Budgerigar	*Melopsittacus undulatus*	GIDIAS
	Rosy-faced Lovebird	*Agapornis roseicollis*	GRIIS
Mammalia	Chinchilla	*Chinchilla lanigera*	GIDIAS
	Four-toed Hedgehog	*Atelerix albiventris*	InvaCost
Reptilia	Ball Python	*Python regius*	GRIIS, CABI HST
	Red Cornsnake	*Pantherophis guttatus*	GRIIS, CABI HST
	Common Green Iguana	*Iguana iguana*	GRIIS, InvaCost
	Carpet Python	*Morelia spilota*	GRIIS
	Common Leopard Gecko	*Eublepharis macularius*	GRIIS
	Tokay Gecko	*Gekko gecko*	GRIIS
	California Kingsnake	*Lampropeltis californiae*	InvaCost, CABI HST
	Rainbow Boa	*Epicrates cenchria*	GRIIS
	Nile Monitor	*Varanus niloticus*	GRIIS, CABI HST
	Veiled Chameleon	*Chamaeleo calyptratus*	GRIIS
	Florida Red-bellied Cooter	*Pseudemys nelsoni*	GRIIS
	Common Water Monitor	*Varanus salvator*	GRIIS
	Green Tree Python	*Morelia viridis*	GRIIS
	Black-and-white Tegu	*Salvator merianae*	GRIIS, InvaCost
	Savanna Monitor	*Varanus exanthematicus*	GRIIS
	Giant Madagascar Day Gecko	*Phelsuma grandis*	GRIIS
	Jackson's Three-horned Chameleon	*Trioceros jacksonii*	CABI HST
	Chinese Softshell Turtle	*Pelodiscus sinensis*	GRIIS
	Common Spiny-tailed Iguana	*Ctenosaura similis*	GRIIS, CABI HST
	Amur Rat Snake	*Elaphe schrenckii*	GRIIS
	Chinese Water Dragon	*Physignathus cocincinus*	GRIIS

Interpretation and Discussion

Among the species found on GRIIS, the invasiveness status was reported by countries that do not necessarily share Japan's climate classification. However, Japan has a variety of climatic and geographic features (as identified by reporting countries), thereby possibly providing favorable conditions for some of the species identified as IAS in other countries.

At a minimum, a closer examination of the identified species' native occurrence, habitat, predation patterns, fecundity, and import quantities is necessary to develop a probabilistic understanding of the species' introduction and establishment in Japan.

The species recorded in datasets that included the extent of impacts showed uneven coverage of the taxonomic groups, where two of the datasets, namely, EICAT and GIDIAS, did not include one or two of the targeted taxonomic classes altogether, making it difficult to say anything conclusive about the characteristic impacts of a certain species or taxonomic group. However, it was still important to demonstrate that several invasive species have had significant adverse impacts on the economy in other countries using InvaCost, as this may help stakeholders consider the broad range of problems future invasive species could potentially pose for Japan if not tackled effectively.

To identify potential risks in detail, it is necessary to conduct extensive literature reviews and consult experts to provide an accurate account of how the species can alter ecosystem, economic, and social dynamics in affected areas.

The overall prevalence of the species commonly traded in the Japanese pet market in at least one invasive species-related database was low (26 out of 148 species, 17.6%). However, given that it takes time for species to be officially recorded as introduced or established in a specific jurisdiction, and that even longer observation is required to assess the impacts of establishment, it is premature to conclude that species traded in the pet market are not likely to be invasive species. It is also possible that many of the species have not yet been examined or recorded as invasive due to difficulties identifying them in the wild or insufficient attention relative to other flagship species. It is also concerning that a few species already recognized as invasive and posing risks in Japan were sold in large volumes in the market (e.g., common green iguanas and common leopard geckos). Substantive measures should be taken to stop the spread of species that are already known to have been introduced into the wild. In contrast, effective preventive measures should be taken for species that have not yet been observed in the wild, accompanied by strengthening monitoring of these species.

Among the five datasets, the most informative is the species list downloaded from the CABI HST, as it directly indicates which species might become invasive in Japan. It included the ball python and red cornsnake, which are not only recorded in the market data and GRIIS used in this report

but are also observed in large numbers (over 300 individuals each) in past Japanese market surveys (Wakao et al., 2018). Additionally, ball pythons, red cornsnakes, California kingsnakes, and Nile monitors were reported by the media as having been found outdoors in Japan, most likely following an escape or intentional release by their owners (Amemiya, 2022; FNN Prime Online, 2023; Inoue, 2016; Tochi Tele News, 2023), raising concerns over the possibility of those species being introduced into the wild in Japan. These four species also occur across a wide range of habitats and are known to live for a few decades, which could increase the risk of release to the wild (Maceda-Veiga et al., 2019); thus, they should be treated with extra caution.

It may be insightful to conduct detailed risk assessments of identified species from CABI HST, particularly those with higher trade volumes (e.g., ball pythons and red cornsnakes), as a starting point for proactive measures to mitigate future risks.

Concluding Remarks

This study has shown that species kept as pets pose significant challenges to society and the environment, both in the past and the future.

Chapter 1 showed that species categorized as IAS or recognized as alien species in Japan were commonly introduced as pets and were most likely made alien species through accumulated accidental releases, such as escapes or intentional releases by their owners. Furthermore, it also showed that such invasive species have potential of spreading infectious diseases to humans and other animals.

It is important to inform businesses and individuals who sell, transport, or keep nonnative species for pet or exhibition use about the potential negative consequences of both accidental and intentional releases, and to take preemptive measures to prevent such events (IPBES, 2023). The Japanese Ministry of the Environment recommends that businesses make information public when handling invasive species, in accordance with the Taskforce on Nature-related Financial Disclosures (TNFD) guidelines (MoE et al., 2025). Pet businesses that profit from increasing the risk of introducing invasive species have a significant obligation to disclose the inherent impacts of their business and to commit to minimizing them. In this sense, implementing TNFD is important. However, such voluntary efforts alone are insufficient.

This study showed that species kept for pets or exhibition purposes could be a major source of invasive species, followed by the release of captive individuals into the wild, consistent with previous international studies. The main finding of Lockwood et al., which showed that the global exotic pet trade has contributed to the IAS of numerous vertebrates suggests that anthropogenic processes of trade, captivity, and release (escape, abandonment) increase the risk of species becoming invasive. Furthermore, Gippet & Bertelsmeier (2021) quantitatively demonstrated that species with characteristics that make them more susceptible to IAS (e.g., wide distribution and high environmental adaptability) are more likely to be distributed in large quantities in the

international pet market, suggesting that the pet trade itself is structured to favor high-risk species. These findings demonstrate that, despite differences in the primary purpose of their introduction (exhibition vs. pet) between mammals, birds, and reptiles, all share a common foundation: “artificial introduction originating from captivity.” To prevent the occurrence of IAS, in addition to taking measures for each route, namely, breeding by businesses and at home, it is important to prevent the inflow of risk species in the first place and to strengthen systems to influence the behavior of keepers. Specifically, when handling the import of existing undetermined invasive species, we should strengthen the responsibilities of those seeking to import them and expand the scope of undetermined species subject to regulation.

In Chapter 2, the adverse impacts of two of the most notorious pet-originating IAS in Japan, i.e. common raccoons and green anoles, as well as another example from the U.S., were revisited to showcase the significant negative consequences IAS can have on the environment, the economy, and human well-being.

To mitigate the negative impacts of IAS, it is important to consider effective measures that minimize costs while containing the impact, rather than relying on ad hoc, temporary measures (Watari, 2011). The most cost-effective measures are preventive, followed by early interventions (Venette et al., 2021). It is important to conduct risk assessments and analyze potential introduction pathways, implement effective regulations, and strengthen monitoring. Accumulating knowledge from public sources, such as gray literature, news articles, and social media, could also help detect early signs of nonnative species in the wild at the earliest possible stage.

In Chapter 3, species found in recent Japanese pet markets were examined to determine whether they had been recorded as IAS in other countries and to assess their impacts (their impacts on environment, economy and human activities), highlighting species with potential risks.

Despite the limitations of the data and results, this study provided an overview of the close connections between IAS and species traded in the pet market, highlighting the species that should be assessed in more detail.

Future Studies and Actions

To identify species at higher risk of becoming invasive, it is important to use comprehensive market data across all taxonomic groups, recorded through monitoring international and domestic trade over longer periods, including prices, which affect the probability of release by owners (Stringham & Lockwood, 2018). It is also advisable to analyze import data from different sources (e.g., COMTRADE and CITES Trade Database) to identify species imported, as well as to analyze in-country trade data in collaboration with businesses, to identify species traded in large volumes, as these are more likely to be invasive than species traded in lower volumes (Gippet & Bertelsmeier, 2021).

To develop useful policy initiatives and take substantive measures to prevent additional species from becoming introduced and invasive, comprehensive risk assessments of species identified in this study as having high potential risks will be essential. Comprehensive invasive risk assessment of species can be challenging and time-consuming due to the multifaceted nature of the processes involved in the introduction and establishment of nonnative species. However, many tools and databases are available to facilitate risk assessment. For instance, Roy et al. (2018) showed that 14 minimum standards should be met when constructing a risk assessment and listed example assessment criteria used in several countries and regions.

To meet the IAS Act's goal of "ensuring biodiversity, protecting human life and health, and promoting the healthy development of agriculture, forestry, and fisheries," efforts must go beyond focusing only on species already causing impacts. It is imperative to reiterate the importance of taking proactive preventive actions. There is an urgent need to establish a system that conducts risk assessments more efficiently to identify targets for preventive measures by actively utilizing internationally recognized frameworks for policymakers (IPBES, 2023) and tools such as those identified in Chapter 3. Given the potential for climate change to exacerbate the risks posed by invasive species, collaboration among policymakers, experts, research institutions, NGOs/NPOs, businesses, and the general public is essential to mitigate future risks and achieve harmonious coexistence between humans and nature.

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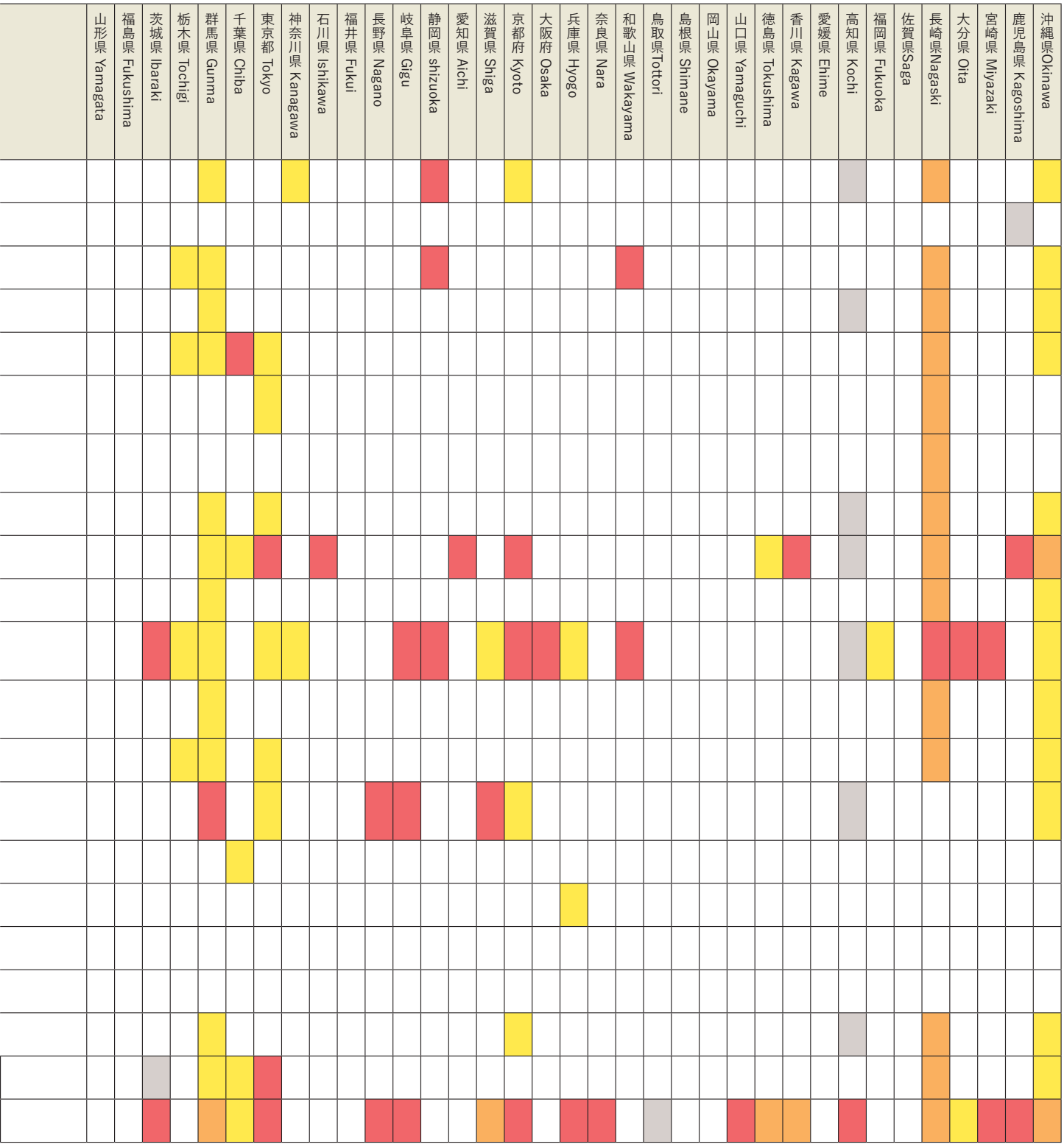
Appendices

表1B-1　日本で外来種として認識されている主な種―哺乳類

Table 1B-1 : Major Mammalian species recognized as Alien species in Japan

由来の国内外の別[1] Source: Abroad or domestic[1]	整理番号 No.	目名 Order	科名 Family	和名［対象生息地］ Common Japanese name [its habitat]	学名 Scientific name	輸入・移入の目的 Primary purpose of introduction	現在の利用状況 Current purpose	感染症（他の動物種）[2] Infectious disease (transmissible to other animals)[2]	感染症（人獣共通）[2] Zoonosis[2]	北海道 Hokkaido	青森県 Aomori	
Ex	1	真無盲腸目 Eulipotyphla	ハリネズミ科 Erinaceidae	ハリネズミ属	Erinaceus spp.	Pets	Exhibition	-	-			
Ex	2	真無盲腸目 Eulipotyphla	トガリネズミ科 Soricidae	ジャコウネズミ	Suncus murinus	Unintentional・Experimentation	Experimentation・Exhibition	-	-			
Ex	3	サル目（霊長目） Primates	オナガザル科 Cercopithecidae	タイワンザル	Macaca cyclopis	Exhibition	Exhibition	-	-			
Ex	4	サル目（霊長目） Primates	オナガザル科 Cercopithecidae	カニクイザル	Macaca fascicularis	Exhibition	Exhibition・Experimentation	X	X			
Ex	5	サル目（霊長目） Primates	オナガザル科 Cercopithecidae	アカゲザル	Macaca muatta	Exhibition・Experimentation	Exhibition・Experimentation	X	X			
Ex	6	サル目（霊長目） Primates	オナガザル科 Cercopithecidae	アカゲザル×ニホンザル	Macaca mulatta×M. fuscata	?	N/A	-	-			
Ex	7	サル目（霊長目） Primates	オナガザル科 Cercopithecidae	タイワンザル×ニホンザル	Macaca cyclopis×M. fuscata	?	N/A	-	-			
Ex	8	サル目（霊長目） Primates	オマキザル科 Cebidae	コモンリスザル／リスザル	Saimiri sciureus	Pets・Exhibition	Pets・Exhibition・Experimentation	X	-			
Ex	9	ウサギ目 Lagomorpha	ウサギ科 Leporidae	カイウサギ／アナウサギ	Oryctolagus cuniculus	Fur・Livestock・Pets	Pets・Exhibition・Experimentation	-	-			
Ex	10	ネズミ目（齧歯目） Rodentia	リス科 Sciuridae	フィンレイソンリス	Callosciurus finlaysonii	?	Exhibition	-	-			
Ex	11	ネズミ目（齧歯目） Rodentia	リス科 Sciuridae	クリハラリス／タイワンリス	Callosiurus erythraecus	Pets・Exhibition	Exhibition・Hunting	X	-			
Ex	12	ネズミ目（齧歯目） Rodentia	リス科 Sciuridae	トウブハイイロリス／ハイイロリス	Sciurus carolinensis	Pets・Exhibition	Exhibition	X	-			
Ex	13	ネズミ目（齧歯目） Rodentia	リス科 Sciuridae	キタリス	Sciurus vulgaris	Pets・Exhibition	Exhibition	X	X			
Ex	14	ネズミ目（齧歯目） Rodentia	リス科 Sciuridae	シマリス／チョウセンシマリス	Tamias sibiricus barberi	Pets・Exhibition	Pets・Exhibition・Hunting	-	-			
Ex	15	ネズミ目（齧歯目） Rodentia	リス科 Sciuridae	オグロプレーリードッグ	Cynomys ludovicianus	Pets・Exhibition	Pets・Exhibition	X	X			
Ex	16	ネズミ目（齧歯目） Rodentia	リス科 Sciuridae	プレーリードッグの一種	Cynomys sp.	Pets・Exhibition	Pets・Exhibition	X	X			
Ex	17	ネズミ目（齧歯目） Rodentia	リス科 Sciuridae	オオアメリカモモンガ	Glaucomys sabrinus	Pets	Pets	-	-			
Ex	18	ネズミ目（齧歯目） Rodentia	リス科 Sciuridae	アメリカモモンガ	Glaucomys volans	Pets	Pets	-	X			
Ex	19	ネズミ目（齧歯目） Rodentia	リス科 Sciuridae	タイリクモモンガ	Pteromys volans	Pets	N/A	-	-			
Ex	20	ネズミ目（齧歯目） Rodentia	キヌゲネズミ科 Cricetidae	マスクラット	Ondatra zibethicus	Fur	N/A	-	-			
Ex	21	ネズミ目（齧歯目） Rodentia	ネズミ科 Muridae	ハツカネズミ	Mus musculus	Unintentional	Pets（variant）・Experimentation	-	X			



定着しており対策が必要な外来種　Established alien species requiring mangement
定着しているが特に影響が確認されていないまたは影響が小規模な外来種
Established alien species with no confirmed impact or only minimal impact
定着していない（または不明だ）が予防が必要な外来種
Not established (or establishment uncertain) alien species requiring preventive measures
その他　Others

表1B-1　日本で外来種として認識されている主な種―哺乳類（つづき）

Table 1B-1 : Major Mammalian species recognized as Alien species in Japan（Continued）

由来の国内外の別[1] Source: Abroad or domestic[1]	整理番号 No.	目名 Order	科名 Family	和名［対象生息地］ Common Japanese name [its habitat]	学名 Scientific name	輸入・移入の目的 Primary purpose of introduction	現在の利用状況 Current purpose	感染症（他の動物種）[2] Infectious disease (transmissible to other animals)[2]	感染症（人獣共通）[2] Zoonosis[2]	北海道 Hokkaido	青森県 Aomori	
Ex	22	ネズミ目（齧歯目）Rodentia	ネズミ科 Muridae	ナンヨウネズミ	Rattus exulans	Unintentional	N/A	-	-			
Ex	23	ネズミ目（齧歯目）Rodentia	ネズミ科 Muridae	ドブネズミ	Rattus norvegicus	Unintentional	Pets（variant）・Experimentation	-	X			
Ex	24	ネズミ目（齧歯目）Rodentia	ネズミ科 Muridae	クマネズミ	Rattus rattus	Unintentional	N/A	-	X			
Ex	25	ネズミ目（齧歯目）Rodentia	ヌートリア科 Myocastoridae	ヌートリア	Myocastor coypus	Fur	Exhibition・Hunting	-	X			
Ex	26	ネズミ目（齧歯目）Rodentia	テンジクネズミ科 Caviidae	テンジクネズミ／モルモット	Cavia porcellus	Pets・Exhibition・Experimentation	Pets・Exhibition・Experimentation	-	-			
Ex	27	ネコ目（食肉目）Carnivora	アライグマ科 Procyonidae	カニクイアライグマ	Procyon cancrivorus	?	?	X	X			
Ex	28	ネコ目（食肉目）Carnivora	アライグマ科 Procyonidae	アライグマ	Procyon lotor	Pets・Exhibition	Exhibition・Hunting	X	X			
Ex	29	ネコ目（食肉目）Carnivora	イヌ科 Canidae	イエイヌ	Canis lupus familiaris	Pets・Labour	Pets・Labour・Exhibition	X	X			
Ex	30	ネコ目（食肉目）Carnivora	イタチ科 Mustelidae	フェレット	Mustela putorius furo	Pets	Pets・Experimentation	X	X			
Ex	31	ネコ目（食肉目）Carnivora	イタチ科 Mustelidae	アメリカミンク／ミンク	Mustela vison	Fur	Exhibition・Hunting	-	-			
Ex	32	ネコ目（食肉目）Carnivora	ジャコウネコ科 Viverridae	ハクビシン	Paguma larvata	Fur	Exhibition・Hunting	-	-			
Ex	33	ネコ目（食肉目）Carnivora	ネコ科 Felidae	イエネコ	Felis catus	Pets・Pest control	Pets・Exhibition	X	-			
Ex	34	ネコ目（食肉目）Carnivora	マングース科 Herpestidae	フイリマングース	Urva auropunctata	Pest control	Exhibition	X	X			
Ex	35	ネコ目（食肉目）Carnivora	マングース科 Herpestidae	ジャワマングース	Urva javanica	Pest control	N/A	-	X			
Ex	36	ネコ目（食肉目）Carnivora	マングース科 Herpestidae	シママングース	Mungos mungos	N/A	Exhibition	-	-			
Ex	37	ウシ目（偶蹄目）Artiodactyla	イノシシ科 Suidae	イノシシ・イノブタ・ノブタ	Sus scrofa	Hunting・Livestock	Hunting・Livestock・Exhibition	-	-			
Ex	38	ウシ目（偶蹄目）Artiodactyla	シカ科	マリアナジカ	Cervus mariannus	Livestock	N/A	-	-			
Ex	39	ウシ目（偶蹄目）Artiodactyla	シカ科 Cervidae	タイワンジカ（交雑）	Cervus nippon taiouanus (Hybrid)	Hunting・Exhibition	Exhibition	-	-			
Ex	40	ウシ目（偶蹄目）Artiodactyla	シカ科 Cervidae	シカ属（国内産ニホンジカを除く）	Cervus spp. (exc. Cervus nippon)	Hunting・Exhibition	Hunting・Exhibition	-	-			
Ex	41	ウシ目（偶蹄目）Artiodactyla	シカ科 Cervidae	アキシスジカ属／アクシスジカ属	Axis spp.	Exhibition	Exhibition	-	-			
Ex	42	ウシ目（偶蹄目）Artiodactyla	シカ科 Cervidae	ダマジカ属	Dama spp.	Exhibition	Exhibition	-	-			
Ex	43	ウシ目（偶蹄目）Artiodactyla	シカ科 Cervidae	シフゾウ	Elaphulrs davidlanus	Exhibition	Exhibition	-	-			
Ex	44	ウシ目（偶蹄目）Artiodactyla	シカ科 Cervidae	キョン	Muntiacus reevesi	Exhibition	Exhibition	-	-			

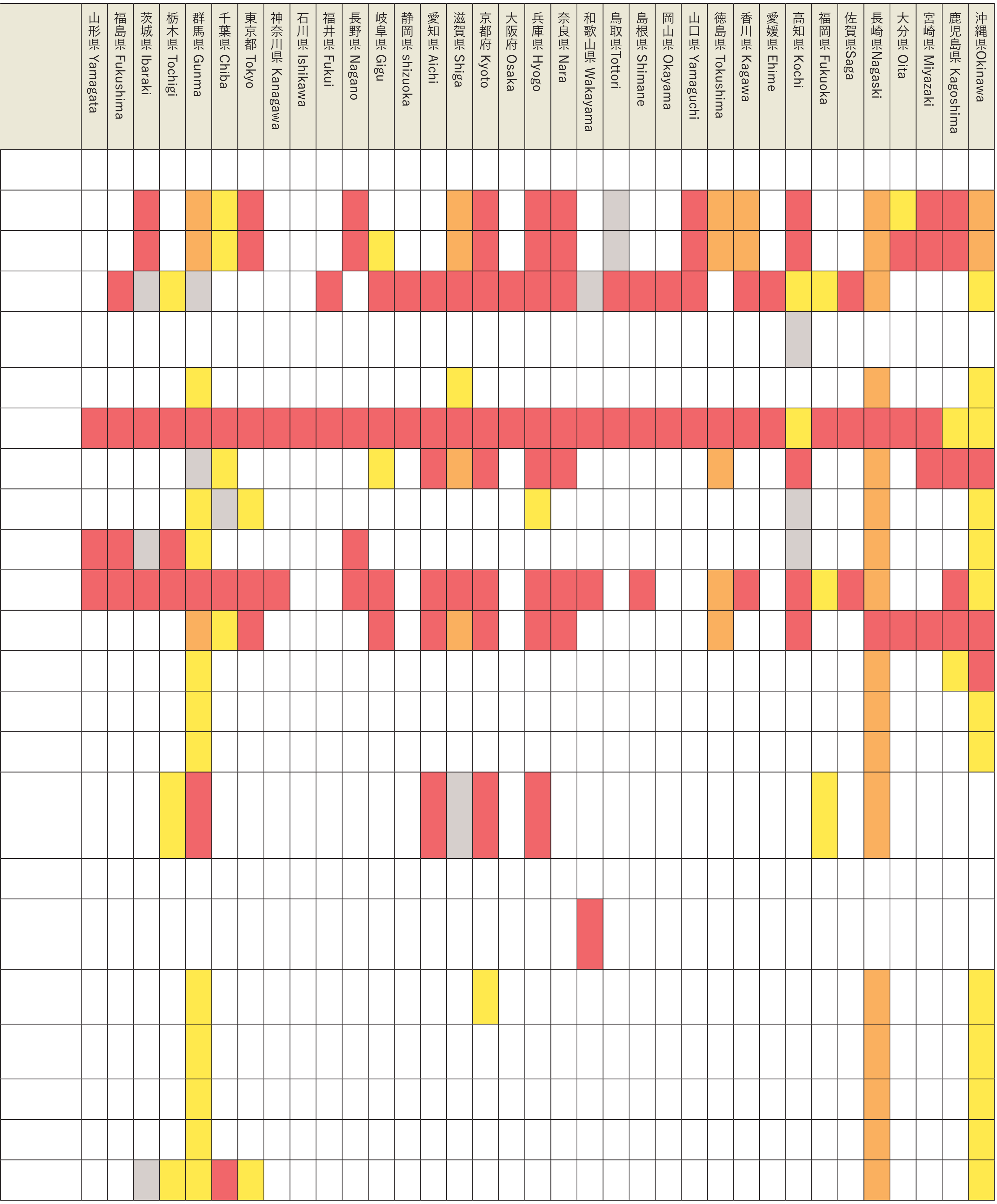

山形県 Yamagata
福島県 Fukushima
茨城県 Ibaraki
栃木県 Tochigi
群馬県 Gunma
千葉県 Chiba
東京都 Tokyo
神奈川県 Kanagawa
石川県 Ishikawa
福井県 Fukui
長野県 Nagano
岐阜県 Gigu
静岡県 shizuoka
愛知県 Aichi
滋賀県 Shiga
京都府 Kyoto
大阪府 Osaka
兵庫県 Hyogo
奈良県 Nara
和歌山県 Wakayama
鳥取県Tottori
島根県 Shimane
岡山県 Okayama
山口県 Yamaguchi
徳島県 Tokushima
香川県 Kagawa
愛媛県 Ehime
高知県 Kochi
福岡県 Fukuoka
佐賀県Saga
長崎県Nagaski
大分県 Oita
宮崎県 Miyazaki
鹿児島県 Kagoshima
沖縄県Okinawa

表1B-1　日本で外来種として認識されている主な種―哺乳類（つづき）

Table 1B-1 : Major Mammalian species recognized as Alien species in Japan（Continued）

由来の国内外の別[1] Source: Abroad or domestic[1]	整理番号 No.	目名 Order	科名 Family	和名［対象生息地］ Common Japanese name [its habitat]	学名 Scientific name	輸入・移入の目的 Primary purpose of introduction	現在の利用状況 Current purpose	感染症（他の動物種）[2] Infectious disease (transmissible to other animals)[2]	感染症（人獣共通）[2] Zoonosis[2]	北海道 Hokkaido	青森県 Aomori	
Ex	45	ウシ目（偶蹄目）Artiodactyla	ウシ科 Bovidae	ウシ	Bos taurus	Livestock	Livestock・Exhibition	-	-			
Ex	46	ウシ目（偶蹄目）Artiodactyla	ウシ科 Bovidae	ヤギ	Capra hircus	Livestock	Livestock・Exhibition・Pets	-	-			
Ex	47	奇蹄目 Perissodactyla	ウマ科 Equidae	ウマ	Equus caballus	Livestock・Labour	Livestock・Exhibition・Pets	-	-			
Ex	48	双前歯目 Diprotodontia	フクロモモンガ科 Petauridae	フクロモモンガの一種(例 Petaurus notatus)	Petaurus sp.	Pets	Pets・Exhibition	-	-			
Ex	49	双前歯目 Diprotodontia	クスクス科 Phalangeridae	フクロギツネ	Trichosurus vulpecula	Pets	Exhibition	X	X			
Ex	50	双前歯目 Diprotodontia	カンガルー科 Macropodidae	ワラビー wallabies	—	Exhibition・Pets	Exhibition・Pets	-	-			
In	1	モグラ目（食虫目）	トガリネズミ科 Soricidae	ニホンジネズミ	Crocidura dsinezumi	Unintentional	N/A	-	-			
In	2	コウモリ目（翼手目）	ヒナコウモリ科 Vespertilionidae	アブラコウモリ／イエコウモリ	Pipistrellus abramus	Unintentional	N/A	-	-			
In	3	サル目（霊長目）Primates	オナガザル科 Cercopithecidae	ヤクシマザル	Macaca fuscata yakui	?	Exhibition	-	-			
In	4	ネコ目（食肉目）Carnivora	イヌ科 Canidae	タヌキ［奥尻島、知夫里島、屋久島］	Nyctereutes procyonoides	?	Exhibition・Hunting・Pets	X	X			
In	5	ネコ目（食肉目）Carnivora	イヌ科 Canidae	キタキツネ	Vulpes vulpes schrencki	?	Exhibition	X	X			
In	6	ネコ目（食肉目）Carnivora	イタチ科 Mustelidae	テン［北海道、佐渡］	Martes melampus	Fur・Pest control	Exhibition	-	-			
In	7	ネコ目（食肉目）Carnivora	イタチ科 Mustelidae	ニホンイタチ［伊豆諸島など］	Mustela itatsi	Fur・Pest control	Exhibition・Hunting	-	-			
In	8	ネコ目（食肉目）Carnivora	イタチ科 Mustelidae	チョウセンイタチ／シベリアイタチ	Mustela sibirica	Fur・Pest control	N/A	-	X			
In	9	ウシ目（偶蹄目）Artiodactyla	イノシシ科 Suidae	ニホンイノシシ［徳之島など］	Sus scrofa leucomystax	Hunting・Livestock	Hunting	X	X			
In	10	ウシ目（偶蹄目）Artiodactyla	シカ科 Cervidae	ニホンジカ［新島など］	Cervus nippon	Hunting・Exhibition	Hunting・Exhibition	-	-			
In	11	ウシ目（偶蹄目）Artiodactyla	シカ科 Cervidae	ケラマジカ	Cervus nippon keramae	Hunting	N/A	-	-			
In	12	ウシ目（偶蹄目）Artiodactyla	シカ科 Cervidae	マゲジカ	Cervus nippon mageshimae	Exhibition	Exhibition	-	-			

一部を除き2025年6月現在の情報による。
英訳は参考であり、日本語を正とする
1) Ex：海外原産の動物、In：国内由来の動物
2) 国内の発症事例による。
作成協力：いであ株式会社

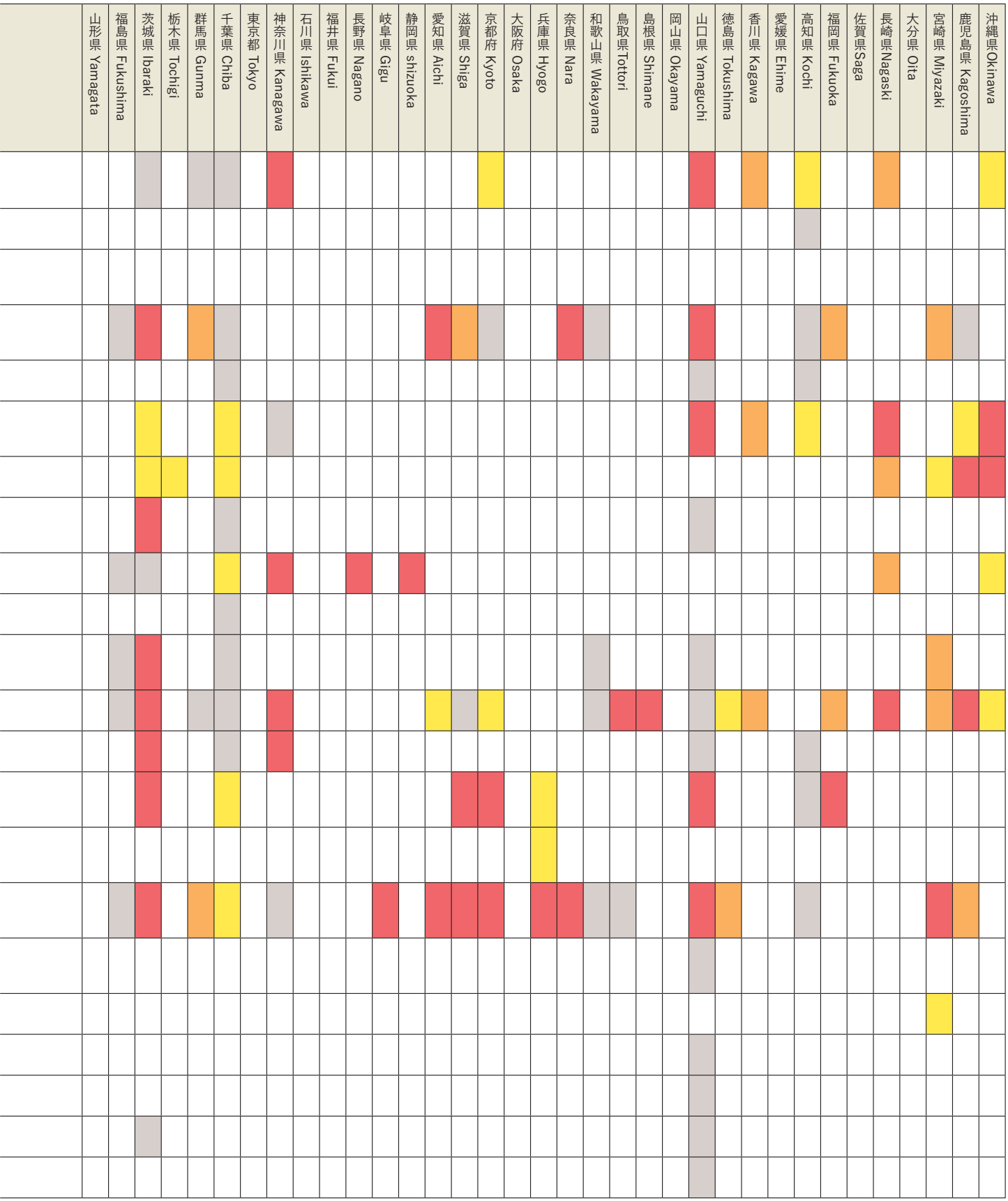
Except for some items, the information is current as of June 2025.
The English translation is for reference only; the Japanese text takes precedence.
1) Ex: Alien species introduced from abroad、In: Domestically introduced alien species
2) Based on domestic case reports
This table was prepared based on survey data provided by IDEA Consultants, Inc.

	山形県 Yamagata	福島県 Fukushima	茨城県 Ibaraki	栃木県 Tochigi	群馬県 Gumma	千葉県 Chiba	東京都 Tokyo	神奈川県 Kanagawa	石川県 Ishikawa	福井県 Fukui	長野県 Nagano	岐阜県 Gigu	静岡県 shizuoka	愛知県 Aichi	滋賀県 Shiga	京都府 Kyoto	大阪府 Osaka	兵庫県 Hyogo	奈良県 Nara	和歌山県 Wakayama	鳥取県Tottori	島根県 Shimane	岡山県 Okayama	山口県 Yamaguchi	徳島県 Tokushima	香川県 Kagawa	愛媛県 Ehime	高知県 Kochi	福岡県 Fukuoka	佐賀県Saga	長崎県Nagaski	大分県 Oita	宮崎県 Miyazaki	鹿児島県 Kagoshima	沖縄県Okinawa

表1B-2　日本で外来種として認識されている主な種―鳥類

Table 1B-2 : Major Avian species recognized as Alien species in Japan

由来の国内外の別[1) Source: Abroad or domestic[1)	整理番号 No.	目名 Order	科名 Family	和名［対象生息地］ Common Japanese name [its habitat]	学名 Scientific name	輸入・移入の目的 Primary purpose of introduction	現在の利用状況 Current purpose	感染症（他の動物種）[2) Infectious disease (transmissible to other animals)[2)	感染症（人獣共通）[2) Zoonosis[2)	北海道 Hokkaido	青森県 Aomori
Ex	1	キジ目 Galliformes	ハイイロウズラ科 Odontophoridae	コリンウズラ	Colinus virginianus	Hunting dog training	Pets	-	-		
Ex	2	キジ目 Galliformes	キジ科 Phasianidae	ヒメウズラ	Coturnix chinensi	Pets	Pets・Experimentation	-	-		
Ex	3	キジ目 Galliformes	キジ科 Phasianidae	テッケイ	Bambusicola thoracica sonorivox	Hunting	N/A	-	-		
Ex	4	キジ目 Galliformes	キジ科 Phasianidae	コジュケイ	Bambusicola thoracica thoracica	Hunting・Pets	Pets・Exhibition・Hunting	-	-		
Ex	5	キジ目 Galliformes	キジ科 Phasianidae	ニワトリ	Gallus gallus domesticus	Poultry・Pets	Poultry・Pets	X	X		
Ex	6	キジ目 Galliformes	キジ科 Phasianidae	コウライキジ（大陸産亜種）	Phasianus colchicus karpowi	Hunting	Hunting・Exhibition	-	-		
Ex	7	キジ目 Galliformes	キジ科 Phasianidae	インドクジャク	Pavo cristatus	Exhibition・Pets	Exhibition	-	-		
Ex	8	カモ目 Anseriformes	カモ科 Anatidae	シナガチョウ／サカツラガン	Anser cygnoides	Poultry・Pets	Poultry・Pets・Exhibition	-	-		
Ex	9	カモ目 Anseriformes	カモ科 Anatidae	カナダガン	Branta canadensis	Exhibition・Hunting・Pets	Exhibition	-	-		
Ex	10	カモ目 Anseriformes	カモ科 Anatidae	シジュウカラガン	Branta hutchinsii	Exhibition・Pets	Exhibition	-	-		
Ex	11	カモ目 Anseriformes	カモ科 Anatidae	コクチョウ	Cygnus atratus	Exhibition・Pets・Consumption	Exhibition	-	-		
Ex	12	カモ目 Anseriformes	カモ科 Anatidae	コブハクチョウ	Cygnus olor	Exhibition・Pets	Exhibition	X	X		
Ex	13	カモ目 Anseriformes	カモ科 Anatidae	バリケン	Cairina moschata	Poultry	Poultry・Pets	-	-		
Ex	14	カモ目 Anseriformes	カモ科 Anatidae	アヒル	Anas platyrhynchos domesticus	Poultry・Exhibition・Pets	Poultry・Exhibition・Pets	X	X		
Ex	15	カモ目 Anseriformes	カモ科 Anatidae	アイガモ	Anas platyrhynchos domesticus	Poultry	Poultry・Pets	-	-		
Ex	16	ハト目 Columbiformes	ハト科 Columbidae	ドバト／カワラバト	Columba livia	Release・Consumption・Pets・Labour	Pets	X	X		
Ex	17	ハト目 Columbiformes	ハト科 Columbidae	シラコバト	Streptopelia decaocto	Hunting（for hawking）・Exhibition	Pets・Exhibition	-	-		
Ex	18	コウノトリ目 Ciconiiformes	コウノトリ科 Ciconiidae	インドトキコウ	Mycteria leucocephala	Exhibition	Exhibition	-	-		
Ex	19	ペリカン目 Pelecaniformes	ペリカン科 Pelecanidae	モモイロペリカン	Pelecanus onocrotalus	Exhibition	Exhibition・Pets	-	-		
Ex	20	ペリカン目 Pelecaniformes	ペリカン科 Pelecanidae	コシベニペリカン	Pelecanus rufescens	Exhibition	Exhibition・Pets	-	-		
Ex	21	ツル目 Gruiformes	ツル科 Gruidae	ホオジロカンムリヅル	Balearica regulorum	Exhibition	Exhibition・Pets	-	-		
Ex	22	ツル目 Gruiformes	ツル科 Gruidae	オオヅル	Grus antigone	Exhibition	Exhibition	-	-		



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その他　Others

表1B-2　日本で外来種として認識されている主な種―鳥類（つづき）
Table 1B-2 : Major Avian species recognized as Alien species in Japan（Continued）

由来の国内外の別[1] Source: Abroad or domestic[1]	整理番号 No.	目名 Order	科名 Family	和名［対象生息地］ Common Japanese name [its habitat]	学名 Scientific name	輸入・移入の目的 Primary purpose of introduction	現在の利用状況 Current purpose	感染症（他の動物種）[2] Infectious disease (transmissible to other animals)[2]	感染症（人獣共通）[2] Zoonosis[2]	北海道 Hokkaido	青森県 Aomori	
Ex	23	チドリ目 Charadriiformes	セイタカシギ科 Recurvirostridae	クロエリセイタカシギ	Himantopus mexicanus	Pets	Pets・Exhibition	-	-			
Ex	24	タカ目 Accipitriformes	コンドル科 Cathartidae	ヒメコンドル	Cathartes aura	Exhibition	Pets・Exhibition	-	-			
Ex	25	オウム目 Psittaciformes	インコ科 Psittacidae	セキセイインコ	Melopsittacus undulatus	Pets・Exhibition	Pets・Exhibition	X	X			
Ex	26	オウム目 Psittaciformes	インコ科 Psittacidae	キエリボタンインコ	Agapornis personata	Pets・Exhibition	Pets・Exhibition	X	X			
Ex	27	オウム目 Psittaciformes	インコ科 Psittacidae	ダルマインコ	Psittacula alexandri	Pets・Exhibition	Pets・Exhibition	X	X			
Ex	28	オウム目 Psittaciformes	インコ科 Psittacidae	オオホンセイインコ	Psittacula eupatria	Pets	Pets・Exhibition	X	X			
Ex	29	オウム目 Psittaciformes	インコ科 Psittacidae	ホンセイインコ	Psittacula krameri	Pets	Pets・Exhibition	X	X			
Ex	30	オウム目 Psittaciformes	インコ科 Psittacidae	ワカケホンセイインコ	Psittacula krameri manillensis	Pets・Exhibition	Pets・Exhibition	X	X			
Ex	31	オウム目 Psittaciformes	インコ科 Psittacidae	オキナインコ	Myiopsitta monachus	Pets・Exhibition	Pets・Exhibition	X	X			
Ex	32	スズメ目 Passeriformes	カラス科 Corvidae	ヤマムスメ	Urocissa caerulea	Pets・Exhibition	N/A	-	-			
Ex	33	スズメ目 Passeriformes	カラス科 Corvidae	サンジャク	Urocissa erythrorhyncha	Pets・Exhibition	Exhibition	-	-			
Ex	34	スズメ目 Passeriformes	カラス科 Corvidae	カササギ	Pica pica	Release・Exhibition・Pets	N/A	-	-			
Ex	35	スズメ目 Passeriformes	ヒヨドリ科 Pycnonotidae	シリアカヒヨドリ	Pycnonotus cafer	Pets	N/A	-	-			
Ex	36	スズメ目 Passeriformes	ヒヨドリ科 Pycnonotidae	コウラウン	Pycnonotus jocosus	Pets・Exhibition	Exhibition・Pets	X	X			
Ex	37	スズメ目 Passeriformes	ヒヨドリ科 Pycnonotidae	シロガシラ	Pycnonotus sinensis ssp.	Pets	Pets	-	-			
Ex	38	スズメ目 Passeriformes	チメドリ科 Timaliidae	ガビチョウ	Garrulax canorus	Pets	N/A	-	-			
Ex	39	スズメ目 Passeriformes	チメドリ科 Timaliidae	ヒゲガビチョウ	Garrulax cineraceus	Pets	N/A	-	-			
Ex	40	スズメ目 Passeriformes	チメドリ科 Timaliidae	カオグロガビチョウ	Garrulax perspicillatus	Pets	N/A	-	-			
Ex	41	スズメ目 Passeriformes	チメドリ科 Timaliidae	カオジロガビチョウ	Garrulax sannio	Pets	N/A	-	-			
Ex	42	スズメ目 Passeriformes	チメドリ科 Timaliidae	ソウシチョウ	Leiothrix lutea	Pets	N/A	-	-			
Ex	43	スズメ目 Passeriformes	メジロ科 Zosteropidae	メジロ（国内産メジロを除く）	Zosterops spp. (exc. domestic Z. japonicus)	Pets	Pets	X	X			
Ex	44	スズメ目 Passeriformes	ムクドリ科 Sturnidae	ハッカチョウ	Acridotheres cristatellus	Pets	N/A	-	-			
Ex	45	スズメ目 Passeriformes	ムクドリ科 Sturnidae	モリハッカ	Acridotheres fuscus	Pets・Exhibition	N/A	-	-			
Ex	46	スズメ目 Passeriformes	ムクドリ科 Sturnidae	ハイイロハッカ	Acridotheres ginginianus	Pets・Exhibition	N/A	-	-			
Ex	47	スズメ目 Passeriformes	ムクドリ科 Sturnidae	インドハッカ	Acridotheres tristis	Pets・Exhibition	N/A	-	-			

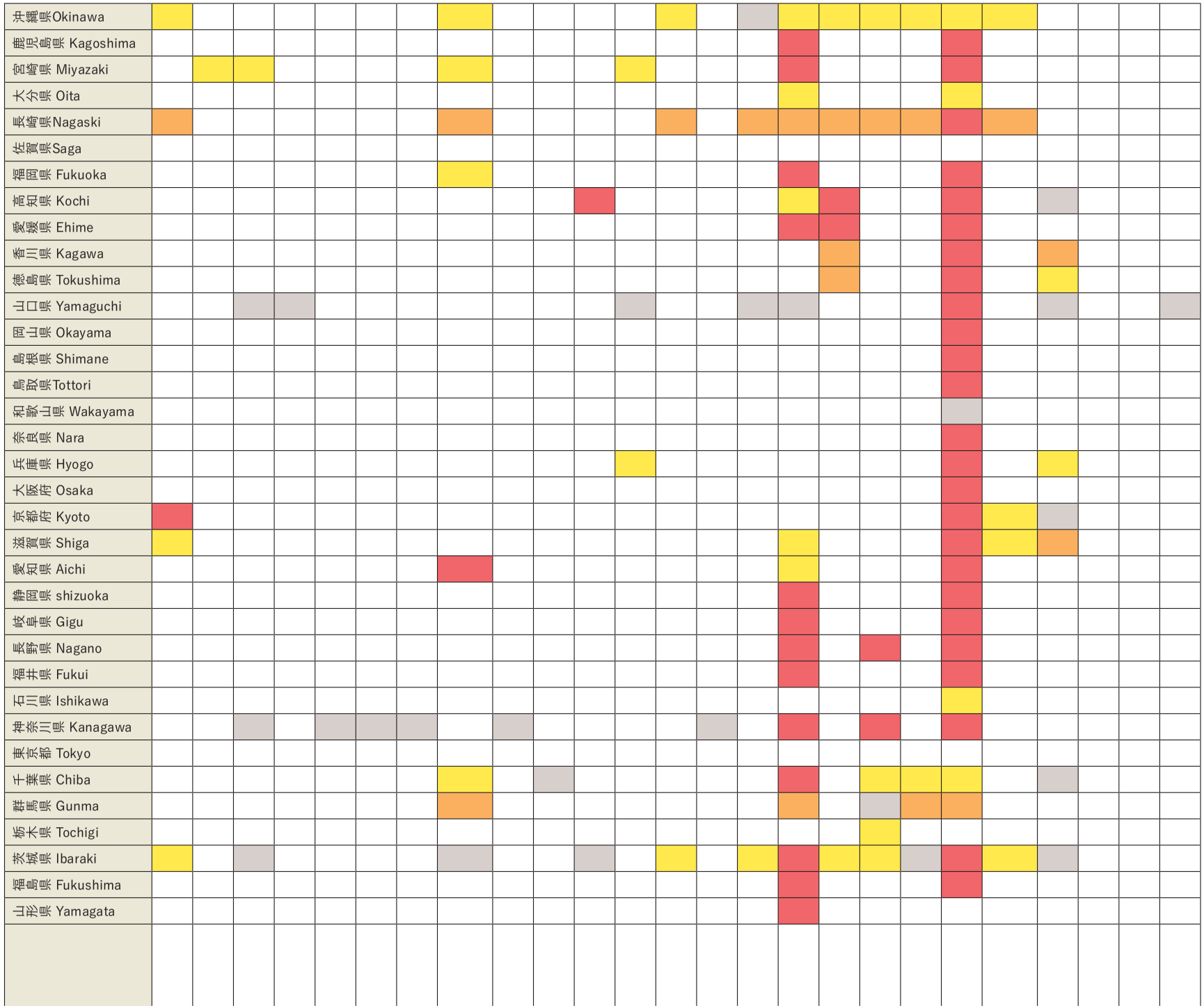
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表1B-2　日本で外来種として認識されている主な種―鳥類（つづき）
Table 1B-2 : Major Avian species recognized as Alien species in Japan（Continued）

由来の国内外の別[1)] Source: Abroad or domestic[1)]	整理番号 No.	目名 Order	科名 Family	和名［対象生息地］ Common Japanese name [its habitat]	学名 Scientific name	輸入・移入の目的 Primary purpose of introduction	現在の利用状況 Current purpose	感染症（他の動物種）[2)] Infectious disease (transmissible to other animals)[2)]	感染症（人獣共通）[2)] Zoonosis[2)]	北海道 Hokkaido	青森県 Aomori	
Ex	48	スズメ目 Passeriformes	ムクドリ科 Sturnidae	ホオジロムクドリ	Sturnus contra	Pets・Exhibition	N/A	-	-			
Ex	49	スズメ目 Passeriformes	ハタオリドリ科 Ploceidae	メンハタオリドリ	Ploceus intermedius	Pets・Exhibition	N/A	-	-			
Ex	50	スズメ目 Passeriformes	ハタオリドリ科 Ploceidae	コウヨウジャク	Ploceus manyar	Pets・Exhibition	N/A	-	-			
Ex	51	スズメ目 Passeriformes	ハタオリドリ科 Ploceidae	オウゴンチョウ	Euplectes afer	Pets・Exhibition	N/A	-	-			
Ex	52	スズメ目 Passeriformes	ハタオリドリ科 Ploceidae	キンランチョウ／オオキンランチョウ	Euplectes orix	Pets・Exhibition	Pets	-	-			
Ex	53	スズメ目 Passeriformes	カエデチョウ科 Estrildidae	ホウコウチョウ	Estrilda melpoda	Pets・Exhibition	Pets	-	-			
Ex	54	スズメ目 Passeriformes	カエデチョウ科 Estrildidae	カエデチョウ	Estrilda troglodytes	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	55	スズメ目 Passeriformes	カエデチョウ科 Estrildidae	ベニスズメ	Amandava amandava	Pets・Exhibition	Pets	-	-			
Ex	56	スズメ目 Passeriformes	カエデチョウ科 Estrildidae	キンパラ	Lonchura atricapilla	Pets・Exhibition	Pets	-	-			
Ex	57	スズメ目 Passeriformes	カエデチョウ科 Estrildidae	ヘキチョウ	Lonchura maja	Pets・Exhibition	Pets	-	-			
Ex	58	スズメ目 Passeriformes	カエデチョウ科 Estrildidae	ギンパラ	Lonchura malacca	Pets・Exhibition	N/A	-	-			
Ex	59	スズメ目 Passeriformes	カエデチョウ科 Estrildidae	シマキンパラ／アミハラ	Lonchura punctulata	Pets・Exhibition	Pets	-	-			
Ex	60	スズメ目 Passeriformes	カエデチョウ科 Estrildidae	コシジロキンパラ	Lonchura striata	Pets・Exhibition	Pets	-	-			
Ex	61	スズメ目 Passeriformes	カエデチョウ科 Estrildidae	ブンチョウ	Padda oryzivora	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	62	スズメ目 Passeriformes	テンニンチョウ科　Viduidae	テンニンチョウ	Vidua macroura	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	63	スズメ目 Passeriformes	テンニンチョウ科　Viduidae	ホウオウジャク	Vidua paradisaea	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	64	スズメ目 Passeriformes	フウキンチョウ科　Thraupidae	コウカンチョウ	Paroaria coronata	Pets・Exhibition	Pets・Exhibition	-	-			
In	1	キジ目 Galliformes	キジ科 Phasianidae	ウズラ	Coturnix japonica	Poultry	Poultry・Pets・Exhibition	X	X			
In	2	キジ目 Galliformes	キジ科 Phasianidae	キジ	Phasianus colchicus	Hunting	Exhibition・Hunting	-	-			
In	3	キジ目 Galliformes	キジ科 Phasianidae	ヤマドリ（ウスアカヤマドリを含む）	Syrmaticus soemmerringii	Hunting	Poultry・Pets・Exhibition・Hunting	-	-			

一部を除き2025年6月現在の情報による。
英訳は参考であり、日本語を正とする
1) Ex：海外原産の動物、In：国内由来の動物
2) 国内の発症事例による。
作成協力：いであ株式会社
Except for some items, the information is current as of June 2025.
The English translation is for reference only; the Japanese text takes precedence.
1) Ex: Alien species introduced from abroad、In: Domestically introduced alien species
2) Based on domestic case reports
This table was prepared based on survey data provided by IDEA Consultants, Inc.

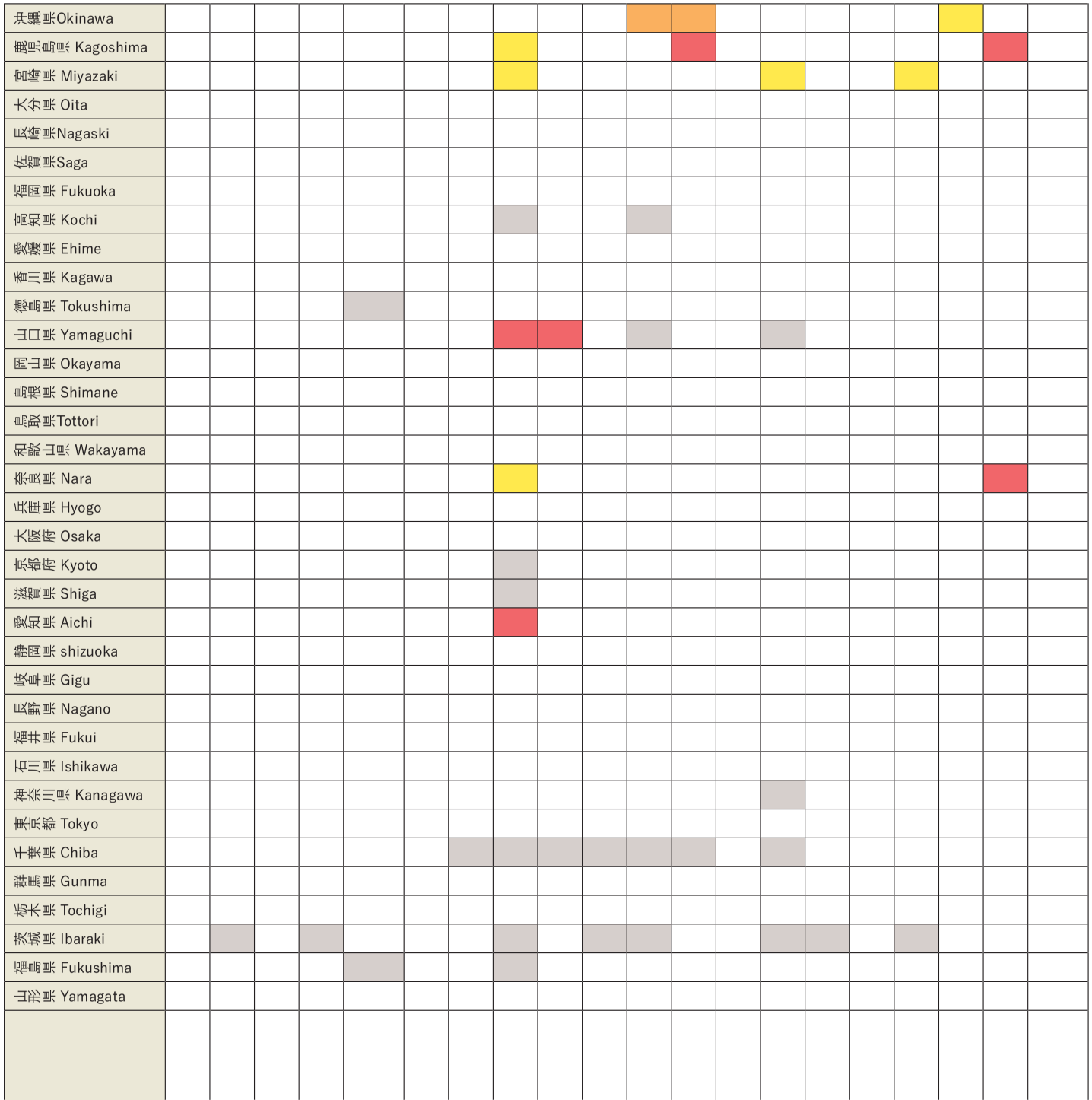
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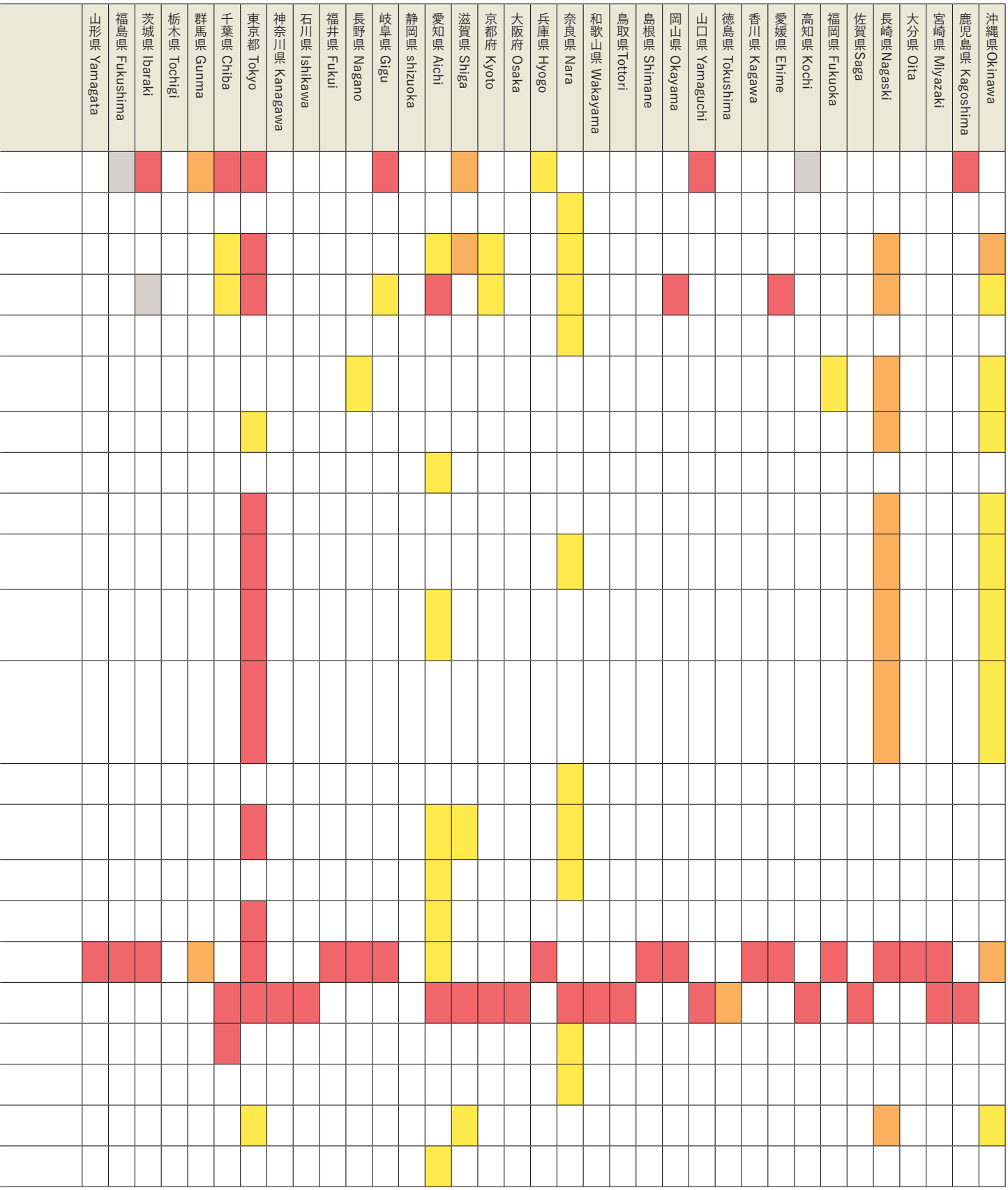
表1B-3　日本で外来種として認識されている主な種―爬虫類

Table 1B-3 : Major Reptile species recognized as Alien species in Japan

由来の国内外の別[1] Source: Abroad or domestic[1]	整理番号 No.	目名 Order	科名 Family	和名［対象生息地］ Common Japanese name [its habitat]	学名 Scientific name	輸入・移入の目的 Primary purpose of introduction	現在の利用状況 Current purpose	感染症（他の動物種）[2] Infectious disease (transmissible to other animals)[2]	感染症（人獣共通）[2] Zoonosis[2]	北海道 Hokkaido	青森県 Aomori	
Ex	1	カメ目 Testudines	イシガメ科 Geoemydidae	クサガメ	Mauremys reevesii	Pets	Pets	-	-			
Ex	2	カメ目 Testudines	イシガメ科 Geoemydidae	カスピイシガメ	Mauremys caspica	Pets	Pets	-	-			
Ex	3	カメ目 Testudines	イシガメ科 Geoemydidae	ミナミイシガメ	Mauremys mutica mutica	Pets・Exhibition	Pets	-	-			
Ex	4	カメ目 Testudines	イシガメ科 Geoemydidae	ハナガメ	Mauremys sinensis	Pets・Exhibition	N/A	-	-			
Ex	5	カメ目 Testudines	イシガメ科 Geoemydidae	マレーハコガメ	Cuora amboinensis	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	6	カメ目 Testudines	イシガメ科 Geoemydidae	チュウゴクセマルハコガメ	Cuora flavomarginata flavomarginata	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	7	カメ目 Testudines	ヌマガメ科 Emydidae	ニシキガメ属	Chrysemys spp.	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	8	カメ目 Testudines	ヌマガメ科 Emydidae	キタクロコブチズガメ	Graptemys nigrinoda nigrinoda	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	9	カメ目 Testudines	ヌマガメ科 Emydidae	ニセチズガメ	Graptemys pseudogeographica	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	10	カメ目 Testudines	ヌマガメ科 Emydidae	ミシシッピチズガメ	Graptemys pseudogeographica kohnii	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	11	カメ目 Testudines	ヌマガメ科 Emydidae	フトマユチズガメ（サビーンチズガメを含む）	Graptemys ouachitensis	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	12	カメ目 Testudines	ヌマガメ科 Emydidae	クーターガメ属（リオグランデクーター，キタアカハラガメ，テキサスクーター）	Pseudemys spp.	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	13	カメ目 Testudines	ヌマガメ科 Emydidae	アラバマアカハラガメ	Pseudemys alabamensis	Pets・Exhibition	Pets	-	-			
Ex	14	カメ目 Testudines	ヌマガメ科 Emydidae	テネシークーター／リバークーター	Pseudemys concinna	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	15	カメ目 Testudines	ヌマガメ科 Emydidae	フロリダアカハラガメ	Pseudemys nelsoni	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	16	カメ目 Testudines	ヌマガメ科 Emydidae	ペニンシュラクーター	Pseudemys peninsularis	Pets・Exhibition	Pets	-	-			
Ex	17	カメ目 Testudines	ヌマガメ科 Emydidae	アカミミガメ	Trachemys scripta	Pets・Exhibition	Pets・Exhibition	-	X			
Ex	18	カメ目 Testudines	ヌマガメ科 Emydidae	ミシシッピアカミミガメ	Trachemys scripta elegans	Pets・Exhibition	Pets・Exhibition	-	X			
Ex	19	カメ目 Testudines	ヌマガメ科 Emydidae	キバラガメ	Trachemys scripta scripta	Pets・Exhibition	Pets・Exhibition	-	X			
Ex	20	カメ目 Testudines	ヌマガメ科 Emydidae	カンバーランドキミミガメ	Trachemys scripta troostii	Pets・Exhibition	Pets・Exhibition	-	X			
Ex	21	カメ目 Testudines	スッポン科 Trionychidae	アメリカスッポン属	Apalone spp.	Pets・Exhibition	Pets	-	-			
Ex	22	カメ目 Testudines	スッポン科 Trionychidae	フロリダスッポン	Apalone ferox	Pets・Exhibition	Pets	-	-			



定着しており対策が必要な外来種　Established alien species requiring mangement
定着しているが特に影響が確認されていないまたは影響が小規模な外来種
Established alien species with no confirmed impact or only minimal impact
定着していない（または不明だ）が予防が必要な外来種
Not established (or establishment uncertain) alien species requiring preventive measures
その他　Others

表1B-3　日本で外来種として認識されている主な種―爬虫類（つづき）

Table 1B-3 : Major Reptile species recognized as Alien species in Japan (Continued)

由来の国内外の別[1] Source: Abroad or domestic[1]	整理番号 No.	目名 Order	科名 Family	和名［対象生息地］ Common Japanese name [its habitat]	学名 Scientific name	輸入・移入の目的 Primary purpose of introduction	現在の利用状況 Current purpose	感染症（他の動物種）[2] Infectious disease (transmissible to other animals)[2]	感染症（人獣共通）[2] Zoonosis[2]	北海道 Hokkaido	青森県 Aomori	
Ex	23	カメ目 Testudines	スッポン科 Trionychidae	トゲスッポン	Apalone spinifera	Pets・Exhibition	Pets	-	-			
Ex	24	カメ目 Testudines	スッポン科 Trionychidae	チュウゴクスッポン／シナスッポン	Pelodiscus sinensis sinensis	Consumption・Exhibition・Pets	Consumption・Pets・Exhibition	-	-			
Ex	25	カメ目 Testudines	スッポン科 Trionychidae	シャンハイハナスッポン	Rafetus swinhoei	Consumption	N/A	-	-			
Ex	26	カメ目 Testudines	カミツキガメ科 Chelydridae	カミツキガメ	Chelydra serpentina	Pets	Exhibition	-	-			
Ex	27	カメ目 Testudines	カミツキガメ科 Chelydridae	ワニガメ属	Macrochelys spp.	Pets・Exhibition	Exhibition	-	-			
Ex	28	カメ目 Testudines	ドロガメ科 Kinosternidae	キイロドロガメ	Kinosternon flavescen	Pets・Exhibition	Pets	-	-			
Ex	29	カメ目 Testudines	ドロガメ科 Kinosternidae	ヒメニオイガメ	Sternotherus minor	Pets	Pets	-	-			
Ex	30	カメ目 Testudines	ドロガメ科 Kinosternidae	カブトニオイガメ	Sternotherus carinatus	Pets	Pets	-	-			
Ex	31	カメ目 Testudines	ドロガメ科 Kinosternidae	ミシシッピニオイガメ	Sternotherus odoratus	Pets	Pets	-	-			
Ex	32	有鱗目 Squamata	ヤモリ科 Gekkonidae	オガサワラヤモリ	Lepidodactylus lugubris	Unintentional	Pets	-	-			
Ex	33	有鱗目 Squamata	ヤモリ科 Gekkonidae	タシロヤモリ	Hemidactylus bowringii	?	Pets	-	-			
Ex	34	有鱗目 Squamata	ヤモリ科 Gekkonidae	ホオグロヤモリ	Hemidactylus frenatus	Unintentional	Pets	-	-			
Ex	35	有鱗目 Squamata	ヤモリ科 Gekkonidae	キノボリヤモリ	Hemiphyllodactylus typus typus	Unintentional	Pets	-	-			
Ex	36	有鱗目 Squamata	アノール科 Anolidae	アノリス・アルログス	Anolis allogus	N/A	N/A	-	-			
Ex	37	有鱗目 Squamata	アノール科 Anolidae	アノリス・アルタケウス	Anolis alutaceus	N/A	N/A	-	-			
Ex	38	有鱗目 Squamata	アノール科 Anolidae	アノリス・アングスティケプス	Anolis angusticeps	N/A	N/A	-	-			
Ex	39	有鱗目 Squamata	アノール科 Anolidae	グリーンアノール	Anolis carolinensis	Pets・Unintentional	N/A	-	-			
Ex	40	有鱗目 Squamata	アノール科 Anolidae	ナイトアノール	Anolis equestris	N/A	N/A	-	-			
Ex	41	有鱗目 Squamata	アノール科 Anolidae	ガーマンアノール	Anolis garmani	N/A	N/A	-	-			
Ex	42	有鱗目 Squamata	アノール科 Anolidae	アノリス・ホモレキス	Anolis homolechis	N/A	N/A	-	-			
Ex	43	有鱗目 Squamata	アノール科 Anolidae	ブラウンアノール	Anolis sagrei	Pets	N/A	-	-			
Ex	44	有鱗目 Squamata	イグアナ科 Iguanidae	グリーンイグアナ	Iguana iguana	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	45	有鱗目 Squamata	ナミヘビ科 Colubridae	ミドリオオガシラ	Boiga cyanea	Pets	N/A	-	-			
Ex	46	有鱗目 Squamata	ナミヘビ科 Colubridae	イヌバオオガシラ	Boiga cynodon	Pets	N/A	-	-			
Ex	47	有鱗目 Squamata	ナミヘビ科 Colubridae	マングローブヘビ	Boiga dendrophila	Pets	N/A	-	-			

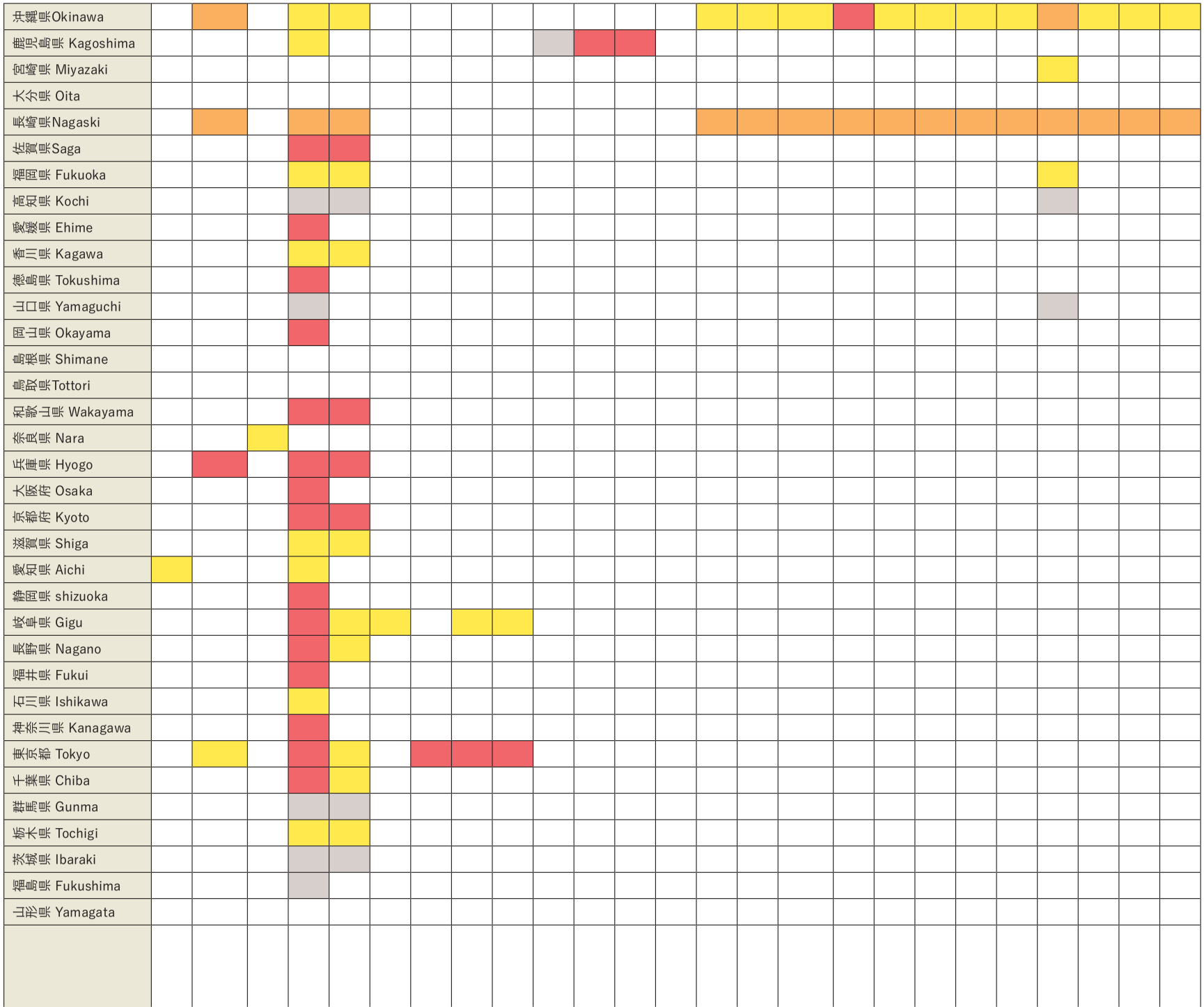

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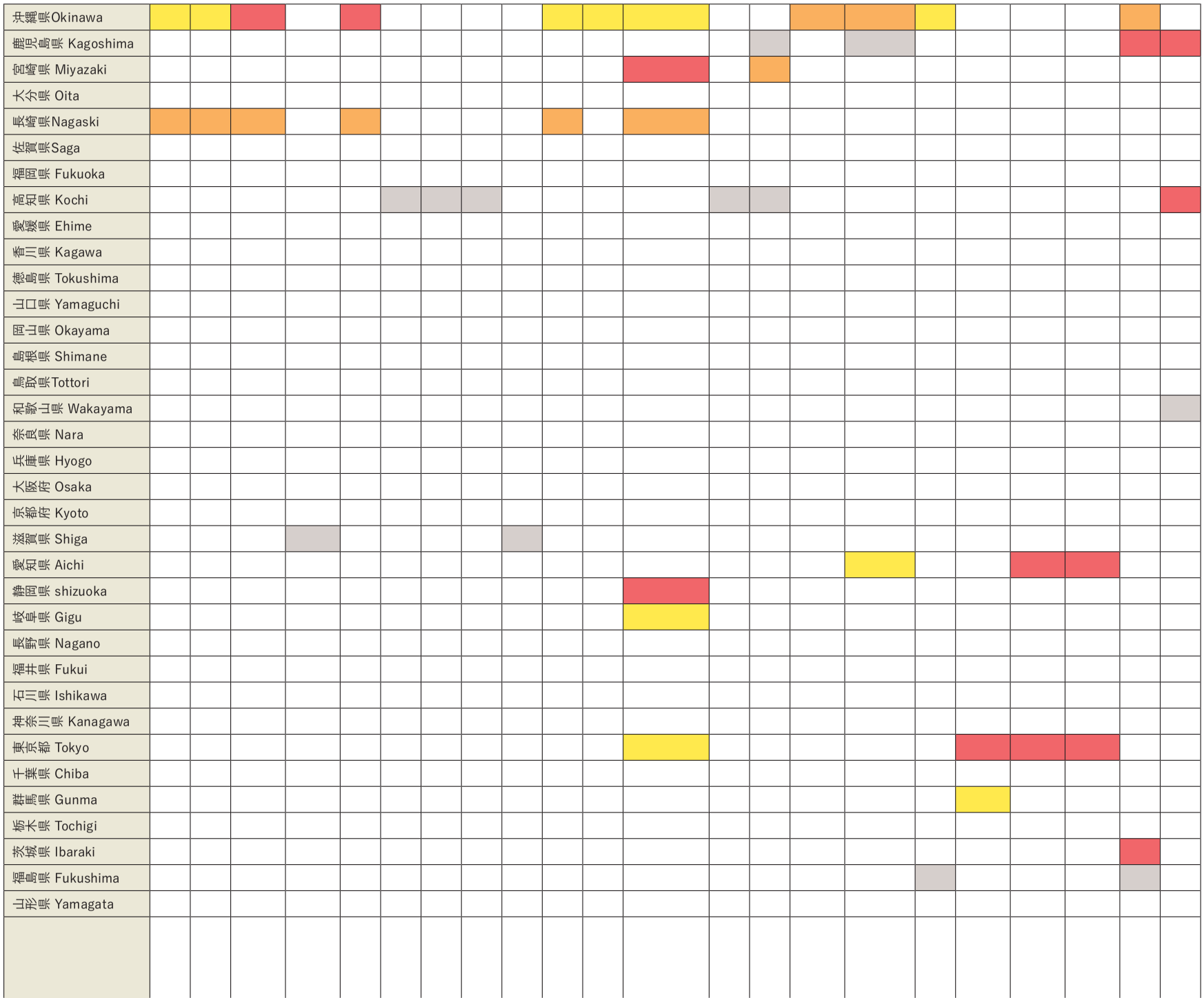
表1B-3　日本で外来種として認識されている主な種―爬虫類（つづき）

Table 1B-3 : Major Reptile species recognized as Alien species in Japan (Continued)

由来の国内外の別[1] Source: Abroad or domestic[1]	整理番号 No.	目名 Order	科名 Family	和名［対象生息地］ Common Japanese name [its habitat]	学名 Scientific name	輸入・移入の目的 Primary purpose of introduction	現在の利用状況 Current purpose	感染症（他の動物種）[2] Infectious disease (transmissible to other animals)[2]	感染症（人獣共通）[2] Zoonosis[2]	北海道 Hokkaido	青森県 Aomori	
Ex	48	有鱗目 Squamata	ナミヘビ科 Colubridae	ボウシオオガシラ	Boiga nigriceps	Pets	N/A	-	-			
Ex	49	有鱗目 Squamata	ナミヘビ科 Colubridae	ミナミオオガシラ	Boiga irregularis	Pets・Unintentinal	N/A	-	-			
Ex	50	有鱗目 Squamata	ナミヘビ科 Colubridae	タイワンスジオ	Elaphe taeniura friesei	Exhibition・Consumption・Pets	N/A	-	-			
Ex	51	有鱗目 Squamata	ナミヘビ科 Colubridae	ホンジュラスミルクヘビ	Lampropeltis triangulum hondurensis	Pets	Pets・Exhibition	-	-			
Ex	52	有鱗目 Squamata	クサリヘビ科 Viperidae	タイワンハブ	Protobothrops mucrosquamatus	Exhibition・Consumption	N/A	-	N/A			
Ex	53	カメ目 Testudines	リクガメ科 Testudinidae	インドホシガメ	Geochelone elegans	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	54	カメ目 Testudines	リクガメ科 Testudinidae	パンケーキガメ	Malacochersus tornieri	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	55	カメ目 Testudines	リクガメ科 Testudinidae	ヒョウモンガメ	Stigmochelys pardalis	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	56	カメ目 Testudines	ヘビクビガメ科 Chelidae	マタマタ	Chelus fimbriatus	Pets・Exhibition	Pets・Exhibition	-	-			
Ex	57	有鱗目 Squamata	トカゲモドキ科 Eublepharidae	ヒョウモントカゲモドキ	Eublepharis macularius	Pets・Exhibition	Pets・Exhibition	X	-			
Ex	58	有鱗目 Squamata	マブヤ科 Mabuyidae	タテスジマブヤ	Eutropis multifasciata	Pets	Pets・Exhibition	-	-			
Ex	59	有鱗目 Squamata	アガマ科 Agamidae	スインホーキノボリトカゲ／スウィンホーキノボリトカゲ	Japalura swinhonis	Pets・Unintentional	N/A	-	-			
Ex	60	有鱗目 Squamata	ニシキヘビ科 Pythonidae	ミドリニシキヘビ	Morelia viridi	Pets	Pets・Exhibition	-	-			
Ex	61	有鱗目 Squamata	メクラヘビ科 Typhlopidae	ブラーミニメクラヘビ	Ramphotyphlops braminus	?	Pets・Exhibition	-	-			
In	1	カメ目 Testudines	イシガメ科 Geoemydidae	ヤエヤマセマルハコガメ［沖縄諸島］	Cuora flavomarginata evelynae	Pets	Exhibition	-	-			
In	2	カメ目 Testudines	イシガメ科 Geoemydidae	ヤエヤマイシガメ［沖縄諸島及び宮古島］	Mauremy s mutica kami	Pets・Exhibition	Exhibition	-	-			
In	3	カメ目 Testudines	イシガメ科 Geoemydidae	ニホンイシガメ	Mauremys japonica	Pets	Pets・Exhibition	-	-			
In	4	カメ目 Testudines	イシガメ科 Geoemydidae	ニホンイシガメ×クサガメ／ウンキュウ	Mauremys japonica ×Mauremys reevesii	Pets	Pets	-	-			
In	5	カメ目 Testudines	イシガメ科 Geoemydidae	ニホンイシガメ×ハナガメ	Mauremys japonica ×Mauremys sinensis	Pets	N/A	-	-			
In	6	カメ目 Testudines	イシガメ科 Geoemydidae	ハナガメ×クサガメ	Mauremys sinensis ×Mauremys reevesii	Pets	N/A	-	-			
In	7	カメ目 Testudines	スッポン科 Trionychidae	ニホンスッポン［琉球列島］	Pelodiscus sinensis japonicus	Consumption	Consumption・Pets・Exhibition	-	-			
In	8	有鱗目 Squamata	ヤモリ科 Gekkonidae	ミナミヤモリ	Gekko hokouensis	Unintentional	Pets	-	-			


沖縄県Okinawa
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大分県 Oita
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栃木県 Tochigi
茨城県 Ibaraki
福島県 Fukushima
山形県 Yamagata

表1B-3　日本で外来種として認識されている主な種―爬虫類（つづき）

Table 1B-3 : Major Reptile species recognized as Alien species in Japan (Continued)

由来の国内外の別[1)] Source: Abroad or domestic[1)]	整理番号 No.	目名 Order	科名 Family	和名［対象生息地］ Common Japanese name [its habitat]	学名 Scientific name	輸入・移入の目的 Primary purpose of introduction	現在の利用状況 Current purpose	感染症（他の動物種）[2)] Infectious disease (transmissible to other animals)[2)]	感染症（人獣共通）[2)] Zoonosis[2)]	北海道 Hokkaido	青森県 Aomori	
In	9	有鱗目 Squamata	ヤモリ科 Gekkonidae	ニホンヤモリ	Gekko japonicus	Unintentional	Pets	-	-			
In	10	有鱗目 Squamata	トカゲ科 Scincidae	ニホントカゲ［伊豆諸島］	Plestiodon japonicus	?	Pets	-	-			
In	11	有鱗目 Squamata	アガマ科 Agamidae	オキナワキノボリトカゲ［九州］	Japalura polygonata polygonata	Pets・Unintentional	N/A	-	-			
In	12	有鱗目 Squamata	カナヘビ科 Lacertidae	アムールカナヘビ	Takydromus amurensis	?	Pets	-	-			
In	13	有鱗目 Squamata	ナミヘビ科 Colubridae	ヒバカリ	Amphiesma vibakari	?	Pets	-	-			
In	14	有鱗目 Squamata	ナミヘビ科 Colubridae	アオダイショウ	Elaphe climacphora	Unintentional・Pest control ?	Pets	-	-			
In	15	有鱗目 Squamata	ナミヘビ科 Colubridae	ヤマカガシ	Rhabdophis tigrinus	?	N/A	-	-			
In	16	有鱗目 Squamata	ナミヘビ科 Colubridae	シマヘビ	Elaphe quadrivirgata	?	Pets	-	-			
In	17	有鱗目 Squamata	タカチホヘビ科 Xenodermidae	タカチホヘビ	Achalinus spinalis	?	Pets	-	-			
In	18	有鱗目 Squamata	クサリヘビ科 Viperidae	ハブ［伊平屋島、古宇利島、伊江島、瀬底島、屋我地島、伊計島、宮城島（うるま）、平安座島、藪地島、浜比嘉島、津堅島、浮原島、沖縄島、黒島（渡嘉敷）、城島、儀志布島、渡嘉敷島、渡名喜島、久米島及びオーハ島以外］	Protobothrops flavoviridis	Consumption・Exhibition・Pest control ?	Consumption・Exhibition	-	-			
In	19	有鱗目 Squamata	クサリヘビ科 Viperidae	サキシマハブ	Protobothrops elegans	Exhibition・Consumption	Exhibition・Consumption	-	-			

一部を除き2025年6月現在の情報による。
英訳は参考であり、日本語を正とする
1) Ex：海外原産の動物、In：国内由来の動物
2) 国内の発症事例による。
作成協力：いであ株式会社
Except for some items, the information is current as of June 2025.
The English translation is for reference only; the Japanese text takes precedence.
1) Ex: Alien species introduced from abroad、In: Domestically introduced alien species
2) Based on domestic case reports
This table was prepared based on survey data provided by IDEA Consultants, Inc.

	山形県 Yamagata	福島県 Fukushima	茨城県 Ibaraki	栃木県 Tochigi	群馬県 Gumma	千葉県 Chiba	東京都 Tokyo	神奈川県 Kanagawa	石川県 Ishikawa	福井県 Fukui	長野県 Nagano	岐阜県 Gigu	静岡県 shizuoka	愛知県 Aichi	滋賀県 Shiga	京都府 Kyoto	大阪府 Osaka	兵庫県 Hyogo	奈良県 Nara	和歌山県 Wakayama	鳥取県Tottori	島根県 Shimane	岡山県 Okayama	山口県 Yamaguchi	徳島県 Tokushima	香川県 Kagawa	愛媛県 Ehime	高知県 Kochi	福岡県 Fukuoka	佐賀県Saga	長崎県Nagaski	大分県 Oita	宮崎県 Miyazaki	鹿児島県 Kagoshima	沖縄県Okinawa

表1C　対応表：各都道府県の外来種の分類と本稿における分類

Table 1C : Crosswalk Table: Classification of Alien Species by Prefecture and by This Report

		北海道 Hokkaido	青森県 Aomori	山形県 Yamagata	福島県 Fukushima	茨城県 Ibaraki	栃木県 Tochigi	群馬県 Gunma	千葉県 Chiba	東京都* Tokyo	神奈川県* Kanagawa	石川県* Ishikawa	
①	定着しており対策が必要な外来種 Established alien species requiring mangement	A1	Af	特定外来生物 IAS	緊急対策外来種 Alien species requiring emergency measures	1 定着 Established	優先対策種 Priorityiror Pity species for management measures	定着/対策優先種 established/ priority management species	A	防除推進外来種 Alien species for promoted control	防除種 control target species	○防除実施 Control implemented	
①		A2	Ad		重点対策外来種 Priority alien species for management		対策検討種 species for management consideration			防除検討外来種 Alien species for control consideration	準防除種 provisional control species	○	
①		A3											
②	定着しているが特に影響が確認されていない、または小さい外来種 Established alien species with no confirmed impact or only minimal impact	B	Bf					定着/その他の種 established/ other species					
②			Bd										
③	定着していない（または不明だ）が予防が必要な外来種 Not established (or establishment uncertain) alien species requiring preventive measures	C	Cf			3 注視 Watching	侵入等警戒外来種 Alien species under alert for invasion	侵入/対策優先種 invasion/priority management species	B	侵入予防外来種 Alien species for invasion prevention	侵入監視種 Species under invasion monitoring	△	
③		E	Cd					未確認/侵入警戒種 unconfirmed/ alert species	C	定着防止外来種 Alien species for prevention of establishment	準侵入監視種 Provisional invasion monitoring species		
③		H	Ef										
③		h	Ed										
④	その他 Others	D	Df		産業管理外来種 Alien species under industrial management	2 未定着 Not established		侵入/その他の種 Invated species/other species	D	産業管理外来種 Alien species under industrial management	対応困難 Difficult-to-address species		
④		F	Dd		その他の総合対策外来種 Other alien species for comprehensive management measures			未確認/その他の種 Unconfirmed/ other species	DD				
④		G	Lp		○（ブルーリスト掲載種） Blue-list species								
④		I											
④		J											
④		K											

	福井県 Fukui	岐阜県* Gifu	長野県 Nagano	静岡県 Shizuoka	愛知県 Aichi	滋賀県 Shiga	京都府 Kyoto	大阪府 Osaka	兵庫県 Hyogo	奈良県 Nara	和歌山県 Wakayama
	福井県内の野外で確認された特定外来生物 IAS confirmed in the wild in Fukui pref.	総合対策外来種 Alien species requiring integrated management measures	総合対策外来種 Alien species requiring integrated management measures	特定外来生物 IAS	愛知県外来種リスト Specied listed on the Aichi alien species list	強影響外来種 High impact alien species	被害甚大種 Severe impact species	特定外来生物アラートリスト Species on the IAS alert list	Z警戒種 Alert species	定着種 Established species	防除対策外来種 Alien species for control measures
						中影響外来種 Medium impact alien species	被害危惧種 potential impact species				重点啓発外来種 Priority alien species for public awareness
						一般外来種 Genaral alien species					
		定着予防外来種 Alien species for prevention of establishment	定着予防外来種 Alien species for prevention of establishment		愛知県注意種リスト Aichi-watching list species	侵入警戒外来種 Alien species under alert for invasion	準被害危惧種 provisional potential impact species		Y注意種 Watchlist species	記録種 recorded species	
							要注目種 species of note				
		産業管理外来種 Alien species under industrial management	産業管理外来種 Alien species under industrial management			確認記録外来種 Recorded alien species	情報不足種 data-deficient species				産業利用外来種 Alien species for industrial use
											無印 Not marked

表1C　対応表：各都道府県の外来種の分類と本稿における分類（つづき）
Table 1C : Crosswalk Table : Classification of Alien Species by Prefecture and by This Report (Continued)

		鳥取県 Tottori	島根県 SHimane	山口県 Ymaguchi	徳島県* Tokushima	香川県 Kagawa	高知県 Kochi	福岡県 Fukuoka	佐賀県 Saga	長崎県 Nagasaki	
①	定着しており対策が必要な外来種 Established alien species requiring mangement	◎影響大 ◎High impact	◎影響大 ◎High impact	定着種 Established species	定着・繁殖/危険外来種 Established & self-sustaining species/ Hazardous species	緊急対策外来種 Alien species requiring emergency measures	防除対策外来種 Alien species for control measures	重点対策外来種 Priority alien species for management	移入規制種 regulated introduced species	I	
①		○懸念あり Species of concern	○影響あり Impactful species			重点対策外来種 Priority alien species for management	重点啓発外来種 Priority alien species for public awareness	要対策外来種 Alien species requiring management measures		II	
①											
②	定着しているが特に影響が確認されていない、または小さい外来種 Established alien species with no confirmed impact or only minimal impact				定着・繁殖/要注意外来種 Established & self-sustaining watchlist alien species	その他の総合対策外来種 Other alien species requiring integrated management measures		要注意外来種 Watchlist alien species		III	
②										IV	
③	定着していない（または不明だ）が予防が必要な外来種 Not established (or establishment uncertain) alien species requiring preventive measures				未定着/定着予防外来種 Not established/ Established alien species for prevention of establishment	侵入予防外来種 Alien species for invasion prevention	定着予防外来種 Alien species for prevention of establishment	定着予防外来種 Alien species for prevention of establishment			
③					不明/定着予防外来種 Unknown/Alien species for prevention of establishment	その他の定着予防外来種 Otherslien species for prevention of establishmenta					
③					不明/危険外来種 Unknown/ Hazourous alien species	特別選定種 Specially designated dpecies					
③											
④	その他 Others	△不明 Unknown	△不明 Unknown	記録種 Recorded species		産業管理外来種 Alien species under industrial management	産業管理外来種 Alien species under industrial management				
④							一次リストのみに記載（〇） Listed on the candidate list				
④											
④											
④											
④											

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This table was prepared based on survey data provided by IDEA Consultants, Inc.

	宮崎県 Miyazaki	大分県 Oita	鹿児島県 Kagoshima	沖縄県 Okinawa
	特定外来生物 IAS	緊急対策外来種 Alien species requiring emergency measures	緊急防除種 emergency control species	重点対策種 priority management species
	○定着 ○Established		重要防除種 Priority control target species	
			一般防除種 General control target species	
	○初期 Established, initial phase		重点啓発種 priority species for public awareness	対策種 Management species
	○定着＆影響 ○Established ＆impacting			
	○未定着 ○Not established	重点対策外来種 Priority alien species for management	定着予防種 Species for prevention of establishment	重点予防種 Priority species for preventive measures
				予防種 Species for preventive measures
		その他の総合対策外来種 Other alien species requiring integrated management measures	産業管理種 species under industrial management	産業管理外来種 Alien species under industrial management
			その他外来種 Othersalien species	

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