



Escape From Confinement; (zoos, private collections and trade) Pathway Action Plan

Sustainability at the heart of a living, working, active landscape valued by everyone.

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An invasive alien species (IAS) is a plant, animal or other living organism introduced by man, which can have a negative ecological or economic impact in an area where it does not naturally occur.

The Northern Ireland Environment Agency (NIEA) developed this Pathway Action Plan (PAP), in conjunction with the PAP Working Group. NIEA is an agency of the Department of Agriculture Environment and Rural Affairs (DAERA). NIEA, along with other divisions of DAERA and the Working Group, will monitor the implementation of the listed actions.

The Working Group membership will be confirmed within 6 months of the final publication of this PAP.

Background

Reducing the risk posed by pathways of introduction and spread is a key way of tackling IAS. The aim is to identify the pathways that require priority action ('priority pathways') because of the volume of species or of the potential damage caused by the species entering Northern Ireland through those pathways.

Within three years of the adoption of the Union list, each Member State shall establish and implement one single action plan or a set of action plans to address the priority pathways it has identified.

This Pathway Action Plan (PAP) has been developed because:

1. EU IAS Regulation 1143/2014¹, Member States shall, within 18 months of the adoption of the Union list carry out a comprehensive analysis of the pathways of unintentional introduction and spread of invasive alien species of Union concern at least in their territory, as well as in their marine waters. - although Northern Ireland is not a Member State, it is bound to EU Regulation (1143/2014) in respect of IAS by virtue of the Northern Ireland Protocol.
2. Prevention of invasive species arriving in Northern Ireland is an action within the Environment Strategy for Northern Ireland² (currently in draft).
3. The Invasive Alien Species Strategy for Northern Ireland³ calls for the development of Pathway Action Plans

This Pathway Action Plan is one of a series of plans intended to address pathways of introduction and spread of invasive alien species in Northern Ireland. The EU regulation defines pathways as '*the routes and mechanisms of the introduction and spread of IAS*'¹. Pathways can apply to the geographic route by which a species moves outside its natural range, the corridor

of introduction for example a road, canal or the human activity, that leads to its accidental or deliberate introduction. A large number of IAS are introduced unintentionally⁴. The most effective way to manage these unintentional introductions is through the management of the introduction pathway itself rather than measures targeted at individual species. This plan outlines the general policy and approaches as well as deliverables by government and other actors in relation to management of the escape from confinement pathway.

Scope

The only Species of Union Concern that can still be 'kept' are those classified as 'companion animals'. These are animals that were already owned prior to listing. They are allowed to stay in their current homes until the end of their natural lives. However, they are not allowed to be sold, exchanged, given away or allowed to escape.

Species of Union Concern can no longer be sold, however, to allow stock clearance, those species newly listed can still be traded for 12 months after listing.

This PAP is aimed at the escape from confinement of IAS animals housed in zoos and those associated with the exotic pet industry (importers, breeders, wholesalers) and companion animal owners (including rescue centres and sanctuaries). This PAP also covers the non-native live food used for such species. Some IAS may also be kept under license/permit by research facilities for investigating improved methods of eradication.

For the purposes of this PAP, the word 'escape' will cover both 'true' escapes (accidental) and the 'facilitated' escapes (deliberate release) of unwanted individuals.

The term 'zoo' will cover establishments such as wildlife parks, aquaria, falconry centres, reptile houses, butterfly collections, research facilities and farm parks keeping IAS. There are only three full BIAZA member Zoos in NI, Belfast Zoo, Castle Espie and Exploris Aquarium.

The scope of this PAP also covers pet animals, specifically exotics. Pets are defined as "any animal kept or intended to be kept by man in particular in his household for private enjoyment and companionship⁵". This covers 'animals sharing man's companionship and in particular living in his household; animals intended for this purpose⁶'. The term 'exotic pet' covers 'those animals not traditionally kept as pets in the UK and whose welfare needs are so specialised they can rarely be met in a domestic environment⁷'.

The geographical scope of this PAP is Northern Ireland but will also refer, where relevant, to Ireland from a biogeographical perspective and further afield (particularly Continental Europe).

Rationale

Animals kept in confinement represent a source of new species that have the potential to become invasive here in Northern Ireland, through their true or facilitated escapes from captivity. In this case, animals kept in confinement refers to those animals housed in zoos, those associated with the exotic pet industry, owners and keepers, as well as the non-native live food required for some of these animals. Escapes can be the result of animals kept in facilities that are not sufficiently secure, or they can be the result of the active release by irresponsible owners/keepers. The import of these species and the non-native live food required to sustain many of them, represents another potential source of invasive species. This can occur where imported consignments can come with associated IAS in the form of stowaways/hitchhikers, misidentified species (sometimes deliberately miss - labelled), parasites, contaminants, and pathogens.

The scale of the pet industry is growing. In a 2022 survey, it was estimated that 62% of UK households have a pet⁸. The demand for exotic pets is also growing, leading to increased imports of live wild animals into the UK. Between 2014 and 2018 around 2.4 million amphibians, ~0.5 million reptiles, ~0.1 million birds and ~0.2 million mammals were imported into GB for commercial purposes, including for use in the pet industry⁹. Many of these will have been imported from GB to pet suppliers in NI.

The increased availability of exotic pets in Northern Ireland has led to more people becoming responsible for exotic animals. To be kept in captivity as pets, many of these exotic species have specialised requirements and these can sometimes go beyond the scope of the keeper. They are not always easy to care for and they may not live up to the owners' expectations¹⁰. Owners who grow tired of the responsibility, or simply no longer have the resources to care for the animal in question, may want to dispose of the animal, resulting in the facilitated escape of these individuals into the environment.

One example of this in Northern Ireland is the ring-necked parakeet (*Psittacula kramera*), an exotic bird native to Africa and Asia but commonly kept as a pet. A small population of these birds has been confirmed inhabiting an urban park in Belfast. They are suspected to be the result of multiple discrete releases in the surrounding area. These birds are known to outcompete our native hole-nesting birds and have been documented acting aggressively towards them.

Most zoos have a good record of preventing escapes and recapturing any escaped animals, but these incidents do still occur. For example, an escape of a red panda from Belfast Zoo in 2019 occurred due to a fault in an electric fence. In this instance, the animal was recovered and returned to the zoo within a couple of days. The escape of a raccoon from a petting zoo in Londonderry in 2020 caused some problems with killing a large number of domestic fowl in the area. As the owner never reclaimed it and it was not micro chipped, the animal was euthanized, as the legislation does not permit rehoming. This is the unfortunate result of an owner allowing

an animal to escape and then failing to admit ownership for fear of penalties. Animals allowed to move freely in and out of captivity within the zoo also present a particular risk as they have an increased potential to establish populations in the local environment and become invasive. It should be noted that whilst zoos can pose a major route for escapes in other countries where multiple zoos exist, NI only has one major zoo, Belfast Zoo, alongside smaller animal parks, petting zoos and aquariums.

It is important to note that not all animals that escape confinement will be able to survive in the NI environment. Many exotic species have specific environmental requirements, which could not be met in 'the wild' in Northern Ireland. However, species that are generalist and opportunistic are more likely to survive and, when more than one individual of the same species has escaped into the same area, there is a greater chance of breeding and therefore establishment and spread.

Once established, invasive species can have major impacts on our native biodiversity; outcompeting, repressing, and excluding native wildlife, altering ecosystems and food webs, and introducing parasites and pathogens; Even a single individual invasive species can negatively impact our local ecosystems in similar ways.

The control and eradication of invasive species can be extremely difficult and incredibly costly. It is estimated that the annual cost of invasive species to the NI economy is currently £46.5 million¹¹.

Alongside the economic and ecological impacts, invasive species can also directly affect human health-as infected animals that escape from confinement can act as vectors for disease, some of which have the potential to impact humans (e.g., zoonotic diseases). This is why pathway action plans, such as this, are required; prevention is better than reaction.

Both the number of individuals that escape, and the frequency of escape events are important drivers in determining the likelihood of a species becoming established and, as a result, potentially becoming invasive. Zoos, importers, breeders and wholesalers tend to house large stocks of multiple species. An escape from here has the potential to lead to a large number of individuals entering the environment at any one time. The frequency of such escapes, however, tends to be small. This is different for pet owners, who care for a small number of individuals. An escape that occurs here may mean the input of only a small number of individuals into the environment but in densely populated areas like towns or cities, the frequency of pet owners, and therefore escapes, can be high.

While zoos, the pet industry and pet owners/keepers are generally responsible and well informed, the fact that exotic species are still being found in the environment, is a telling sign that more education and awareness raising is required. One of the aims of this pathway action plan is to raise awareness amongst the relevant stakeholders so that they understand both the legal ramifications of deliberate release, as well as the environmental and economic consequences.

Although zoos already have a statutory role in both education and conservation, with some already helping to raise awareness of the importance of the issue of invasive species amongst their visitors, our aim, through this PAP, is for that role to expand.

There are European Codes of Conduct developed under the Bern Convention for both Zoological Gardens and Aquaria and IAS¹², and for Pets and IAS¹³.

The subject of IAS also features in several relevant acts in domestic legislation.

Other relevant NI Acts/Orders/Policy Instruments;

- The Welfare of Animals (NI) Act 2011¹⁴
- The Wildlife (Northern Ireland) Order (1985) (as amended)¹⁵
- Wildlife and Natural Environment (WANE) Act (Northern Ireland) 2011¹⁶
- Environment Strategy for Northern Ireland 2022²
- The Zoos Licensing Regulations (Northern Ireland) 2003¹⁷

The recommendations outlined in this plan support the EU Invasive Alien Species Regulation (1143/2014)¹ which, along with Species of Union Concern, provides a general prohibition on the release of any non-native species of animal or plant into the Northern Ireland environment. Northern Ireland is bound to EU Regulation (1143/2014) in respect of Invasive Alien Species (IAS) by virtue of the Northern Ireland Protocol. It is enforced via the corresponding Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019.¹⁸

However, legislation alone is not sufficient to manage and lower the risk associated with introducing or spreading IAS. It requires cooperation and collaboration from all concerned, and each sector is part of the solution and plays an important role in IAS management and implementing the appropriate levels of biosecurity protocols. This plan sets out additional actions to help minimise the risk of introduction and movement of IAS caused by zoos, the pet industry, and pet keepers/owners. Its primary output has been to agree a series of measures to raise awareness among key actors in this sector and to strengthen existing biosecurity mechanisms. These actions are outlined below, and they form the main body of the action plan.

Aims and Objectives

- Raise awareness of IAS amongst zoos, the pet industry and pet owners/keepers. Focusing on introductions as a result of escape from confinement and the damage this can cause to our native biodiversity;
- Raise awareness of the importance of the issue of escapes amongst zoo inspectors, DAERA veterinary division, local authorities and Police to ensure this issue is addressed robustly;
- Raise awareness of biosecurity at the border, the issues regarding the import of illegal listed species, mislabeled/misidentified species and the presence of hitchhikers, parasites, diseases etc. within consignments
- Currently, importers of some live animals must pre-notify movements of live animals into Northern Ireland using the [EU's TRACES NT](#) system - we should work to widen the knowledge collected by this system i.e. ensure species are identified on the paperwork
- Make greater use of both zoos and the pet industry, to help raise public awareness of the invasive species issue amongst their visitors and customers;
- Ensure that zoo animals which are allowed to move freely in and out of captivity within the zoo (for example prairie dogs) are not allowed to remain there habitually. They should not be allowed to remain unconfined on a permanent basis;
- Ensure plans are in place in all facilities to recover all escapes - not just those that pose a danger to the public; - Endeavour to introduce a legal obligation for zoos to report all non-native - species escapes;
- Ensure the recording of information on escapes by zoos and investigate possible ways to collate this information centrally;
- Improve capacity for responding to the initial stages of establishment from escapes in conjunction with the rapid response working group;
- Prevent the deliberate introduction of unwanted animals into the environment by providing alternative options for owners who want to dispose of their exotic pets.

Draft Actions for Discussion

Action 1

Create guidance and a Code of Conduct for both zoos and the exotic pet industry in relation to IAS. This guidance will be circulated to all relevant stakeholders, including pet shops stocking exotic animals, zoos, major importers, breeders, and wholesalers and to DAERA zoo inspectors and DAERA veterinary division prior to every inspection. The guidance will:

- Explicitly address the issue of the types of exhibits which may contravene the EU Regulation (1143/2014), where animals have uncontrolled access outside the zoo, (e.g. free-flying birds, prairie dogs etc.).
- Ensure that it is explicit that the requirements relating to escapes in The Zoos Licensing Regulations (Northern Ireland) 2003 apply to all non-native animals, not just those that pose a risk to public safety
- State that no non-native animal should be allowed to escape into the environment and inform all stakeholders of laws surrounding IAS

Action 2

All escapes from confinement must be recorded by the relevant stakeholders. DAERA should create a reporting line, whereby each record is submitted by the relevant stakeholders to DAERA to be collated centrally.

Action 3

DAERA officials will liaise with the PSNI and via PAW NI to agree on how best to gather and share intelligence on contraventions of the EU Regulation (1143/2014). This may include the National Wildlife Crime Unit for shared issues across jurisdictions. Create a formal method of reporting incidents to zoo inspectors and veterinary division colleagues and produce a range of options for dealing with such issues.

Action 4

Zoo inspectors must report all incidences of exhibits with animals that have uncontrolled access outside the zoo back to DAERA.

Action 5

DAERA/NIEA INNS team will work with Belfast Zoo and other relevant stakeholders to raise awareness of the issue of invasive species amongst their visitors.

This could involve:

- A campaign, run in partnership with Belfast Zoo and relevant stakeholders, aimed at both awareness raising and encouraging visitors to record all IAS sightings on CEDaR, iRecord or iNaturalist.
- In zoos where an IAS is a primary attraction, its status as an IAS should be highlighted.
- Where a species is under threat by an IAS in its native range, this too should be highlighted.

Action 6

DAERA/NIEA INNS team will work alongside the exotic pet industry and exotic pet owners and keepers to raise awareness of the issue of IAS and promote being Pet WISE. This could involve: (Maybe need to make these separate actions but we can discuss)

- A campaign run in partnership with the pet industry to raise awareness of the issue of escapes associated with the pet trade and how they relate to the IAS issue. And to promote the reporting of IAS found in the environment by the industry and pet owners.
- Pet shops stocking exotic pets should promote which species are non-native and above all, insist that no pet should be released into the wild. This could be achieved through appropriate labelling and signage. Some owners may believe that 'freedom' is a 'kinder' option. However, "Life in the wild is hazardous, needs are not always met, and in the context of the survival of the fittest, the less fit frequently face food shortage, injury, disease and lingering deaths"¹⁹. The pet industry must be encouraged to share this message.
- All stakeholders must know what they are selling and ensure that their customers understand what they are receiving. They must provide care-sheets for each species that they stock, allowing the customer to make a fully informed decision. They must also be able to determine the suitability of the pet for them and ensure that they are able to adequately house and secure it. This should also help to reduce impulse purchases.
- A care-sheet should include- the estimated time and money involved to care for the pet, behavioral characteristics and any hazards e.g. biting, lifespan, size when fully grown, if it is capable of reproducing (if purchasing more than one) and methods for safe and secure keeping.
- Containers of live food should be labelled and/or come with guidance, explaining how care must be taken to avoid the escape of the food species into the environment.
- Traders should be made aware that potential hitchhikers, parasites and pathogens may be present with imports and know who to contact if they suspect an occurrence.

- Customers can play a key role in ensuring traders are following the rules and regulations, acting as the eyes and ears, reporting anything untoward to the NIEA INNS team.
- Raise awareness of methods to prevent the escape of pets. Problems with non-native species generally start to arrive when they move out of controlled or physically restricted locations.

Action 7

NIEA INNS team will ensure that the Rapid Response Working Group includes the aims of this PAP within its remit including by assessing what knowledge, expertise and resources exist to deal with establishing populations of escaped zoo and exotic pet animals.

Action 8

Look into the internet commerce and trade of listed IAS and issues linked with misidentification and mislabeling of species. Encourage the reporting of any suspected selling of listed IAS to NIEA INNS team and raise awareness of this within the exotic pet owner community and industry.

Action 9

Raise awareness of the issue of biosecurity at the border with border control staff; the illegal import of listed species, the mislabeling/misidentification of species and consignments contaminated with hitchhikers that may be invasive (This includes parasites and pathogens).

Annex 1

Proposed Working Group Membership

OATA (local representative)
Local Council Animal Welfare Officers
PAW NI
Belfast Zoo
Exploris Aquarium
Castle Espie
Mountpanther Estate
The British Deer Society (NI division)
The Northern Ireland Deer Society
USPCA
Jon Lees (DAERA, Environment, Marine and Fisheries)
Sandrine Gunst (DAERA, Veterinary Trade and Imports Branch)
Representative from QUB School of Biological Sciences
HMRC
Trading Standards
British Association for Shooting and Conservation (BASC)

Membership of the working group is open to new parties throughout the Pathway Action Plan process. To request to become a member, please contact the NIEA INNS Team.

Annex 2

Be Pet WISE Guidance for Pet Owners

When getting a pet, it is important to carefully consider the reality of caring for your pet now and in future years. If in doubt do not proceed as this will help reduce the number of pets which escape or are released into our native environment by owners no longer able to cope. If escaped/released animals can survive and establish themselves in our native environment, they can have many negative impacts on the surrounding ecosystem such as competing with native species, preying on them, destroying habitats, altering food webs and spreading diseases. They can also negatively impact our economy and society in general.

Some Considerations

Is it legal?

Some animals are illegal to own in Northern Ireland. In general, if an animal is illegal it has been made illegal as a result of the potential threats it poses to human health or the environment. Under the EU Regulation (1143/2014) strict restrictions apply to any species on the [Species of Union Concern List](#). Listed pet species can be kept for the remainder of their natural lives without a permit, provided they were owned prior to listing. For more information see Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 [FAQ's document](#) (currently being updated).

Does it require a license?

Some animals require a licence to keep legally in Northern Ireland. Always check with your retailer on the license requirements before you purchase an animal.

What size will it grow to?

Do you have enough space to accommodate your pet once it reaches its potential full size?

What age will it live to?

How long will you have to commit to this pet and how does this fit with your long-term life plans?

Can you adopt practices to prevent your pet, any diseases/parasites or its food/habitat requirements from becoming invasive?

When considering getting a new pet, you should also consider the potential for your pet, its diseases/parasites to become invasive. You should also consider if its food or habitat requirements could lead to the introduction of a new invasive species.

How much time will it take to care for?

Do you have the time to devote to your pet to ensure that it has the best possible quality of life? Some pets will be more active than others and will require much more of your time for social and exercise time. Specialist dietary and husbandry requirements may take a considerable amount of time.

How social is the animal?

Do you want a pet that is happy to be handled or one that is contented without regular handling? Is the animal best kept in groups or alone? Is the animal compatible with other pets and/or children?

How much will it cost to look after?

Does the animal require specialist food/housing/veterinary care that will be expensive? Even if no specialist care is required the costs of owning pets are often far greater than the cost of acquiring the pet in the first place. Also consider if your local veterinary surgery is equipped to deal with your chosen pet.

Will it reproduce in captivity?

If your chosen pet is to be kept in groups will they reproduce readily? Will they produce large numbers of young? Do you have a responsible means of re-homing ALL offspring? For pet species listed on the [Species of Union Concern List](#), measures must be in place to prevent breeding. In Northern Ireland listed animal species cannot be rehomed. (For more information see [FAQ's document](#)).

Health concerns?

Some animals may carry diseases or pathogens which may be transmitted to humans, other pets, agricultural animals and native species. It is important to consider and research this issue before deciding upon an exotic pet.

Caring for your pet

Even if you have thoroughly researched your chosen pet there may be issues which you had not previously considered. Liaise with relevant bodies on how to best continue care for your pet and avoid situations where there is a risk of your pet being introduced to our native environment.

If your circumstances change and you find you are unable to continue caring for your pet, ensure that you re-home your pet humanely and responsibly. As mentioned above, [Species of Union Concern](#) cannot be rehomed in Northern Ireland. For more information regarding the [Species of Union Concern](#) List see the [FAQ's document](#).

Annex 3

Be Pet WISE Guidance for Pet Traders

The import of animals across international frontiers and within countries, between animal farmers, collectors, wholesalers, and retailers is essential for the pet industry.

If, however, these species are allowed to escape, together with any pathogens or parasites they may be carrying, into our native environment, they have the potential to become invasive, negatively impacting our native ecosystems and our economy. The non-native live food, often associated with these species, also represents a potential source of invasive species, if mismanaged and given opportunity to escape. This is less of a problem with ornamental fish species, which are kept in closed systems with little chance of escape. Imported consignments can also come with associated invasives in the form of stowaways/hitchhikers, misidentified species (sometimes deliberately mislabelled), parasites, contaminants, and/or pathogens.

Under the EU Regulation (1143/2014) strict restrictions apply to any species on the [Species of Union Concern List](#). Once listed, Species of Union Concern can no longer be sold, however, to allow stock clearance, those species newly listed can still be traded for 12 months after listing. For more information see Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 [FAQ's document](#) (currently being updated).

Pet traders have a key role to play in the preventing the spread of invasive species, diseases and parasites. Below is some guidance which can be implemented by pet traders to help prevent the introduction of invasive species:

Check: Ensure that consignments do not contain hitchhikers which may be invasive. This includes parasites and pathogens.

Ensure Good husbandry: Reduce animal stress and minimise susceptibility of the animals to pathogens and parasites.

Biosecurity: Ensure that animals, pathogens or parasites cannot escape from your facility or during transport. Ensure that all consignments are clearly labelled.

Care Sheets: Ensure that all customers whether they be potential or current are provided with relevant care sheets pertaining to their pet and any associated live food. This will allow them to determine the suitability of the pet and ensure the pet is kept healthy and adequately/securely housed.

Codes of Practice: Ensure that customers know how to best care for their pet in order to minimise the risks of exotic animals being abandoned or escaping.

Education: Educate customers about the implications for the environment, the economy and human/animal/plant health of the release of exotic animals. Educate customers on alternatives to abandoning pets should a situation arise where this is necessary.

Industry Education: Promote awareness of the risk of invasive species within the pet trade.

Annex 4

Identification Guides

Below are links to ID Guides for some listed IAS that can be associated with zoos or the pet industry. For more information on these species and others, please see the [Species Account](#) section on our website.

Coypu

Species Description
Scientific name: *Myocastor coypus*
AKA: Nutria
Native to: South America
Habitat: Inland surface water, mire, bogs and fen
 The coypu is a large, semi-aquatic rodent native to South America. It is approximately 1m in length, 15cm tall, and has a long, cylindrical tail. The coypu was first introduced into Europe in the 18th century for fur farming, subsequent escapes from confinement led to establishment of wild populations. As a result of natural dispersal the species colonised coastal marshes, wetlands and other wetland areas in 22 European countries. It has been seen to have colonised 16 countries.
 Identification features include: prominent bright orange-yellow scrotum, white marks on muzzle, long cylindrical tail and webbed hind feet.
Under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 it is offence to intentionally keep, breed, transport to, from or within Northern Ireland, use or exchange Coypu, or to release it into the environment.

Key ID Features

Report any sightings via: CEDaR Online Recording - <https://www2.habitas.org.uk/records/15> | Record app or Invasive Species Northern Ireland website - <http://invasivespeciescent.co.uk/report-sighting>

Coatimundi

Species Description
Scientific name: *Nasua nasua*
AKA: Coati, Coatimundi
Native to: South America
Habitat: Forest and grassland
 Coatimundi are native to South America, weighing up to 5.5 kg and the head-to-tail length ranging from 60 to 120 cm with a long tail. They have long, bushy, black hair, a pointed snout with black nose markings and a distinctive long, bushy tail. It has a dark red-brown and black coat which lightens to yellow-brown on the underside. Coatimundi walk with a bear-like gait.
 Nasua males spend much of their time in trees, relying on them for sleep and spending some of their hanging by their tail. Coatimundi are not present in the wild in Northern Ireland.
Under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 it is offence to intentionally keep, breed, transport to, from or within Northern Ireland, use or exchange Coatimundi, or to release it into the environment.

Key ID Features

Report any sightings via: CEDaR Online Recording - <https://www2.habitas.org.uk/records/15> | Record app or Invasive Species Northern Ireland website - <http://invasivespeciescent.co.uk/report-sighting>

Fox Squirrel

Species Description
Scientific name: *Sciurus niger*
AKA: Bryant's fox squirrel, eastern fox squirrel
Native to: North America
Habitat: Deciduous and mixed-forest habitats, prefer areas with open understory and winter-deadable food
 Bryant's fox squirrel is the largest tree squirrel species in its native North America. They grow to a total length of 454–608mm tail 209–305mm and weight 167–312 g.
 Due to decreasing numbers within its native range, 44 introductions were made in an attempt to conserve the population. Although not present in Northern Ireland or any European country, due to the substantially high success rates of introductions, (well over 20 individuals can establish viable populations) the Fox squirrel is identified as a high risk invasive non-native species.
 There are 10 recognised subspecies of fox squirrel, with significant variation in appearance.
Under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 it is offence to intentionally keep, breed, transport to, from or within Northern Ireland, use or exchange Fox squirrel, or to release it into the environment.

Key ID Features

Report any sightings via: CEDaR Online Recording - <https://www2.habitas.org.uk/records/15> | Record app or Invasive Species Northern Ireland website - <http://invasivespeciescent.co.uk/report-sighting>

Muntjac Deer

Species Description
Scientific name: *Muntiacus reevesi*
AKA: Chinese Muntjac, barking deer, Reeves' Muntjac
Native to: China
Habitat: Dense woodland and scrub with diverse vegetation
 Muntjac are a small species of deer that measure approximately 50 cm at the shoulder in males and often in females. They have a characteristic bawling appearance and are named for their loud bawling noise. Muntjac deer were introduced to Northern Ireland in the 19th century, where they were used for hunting. Muntjac deer are widespread throughout most of England and Wales, where they are considered to be a pest. Muntjac deer are also found in Northern Ireland, where they are considered to be a pest. Muntjac deer are also found in Northern Ireland, where they are considered to be a pest.
Under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 it is offence to intentionally keep, breed, transport to, from or within Northern Ireland, use or exchange Muntjac, or to release it into the environment.

Key ID Features

Report any sightings via: CEDaR Online Recording - <https://www2.habitas.org.uk/records/15> | Record app or Invasive Species Northern Ireland website - <http://invasivespeciescent.co.uk/report-sighting>

Coypu

Coatimundi

Fox squirrel

Muntjac deer

Muskrat

Species Description
Scientific name: *Ondatra zibethicus*
AKA: muskrat, marsh rabbit, musquash, swamp rabbit
Native to: North America
Habitat: Moist freshwater, slow moving rivers, lakes, ponds and wetlands
 The muskrat is a semi-aquatic rodent, with a tail that is approximately 1m long. It has a brown coat and a long, cylindrical tail. The muskrat was first introduced into Europe in the 18th century for fur farming, subsequent escapes from confinement led to establishment of wild populations. As a result of natural dispersal the species colonised coastal marshes, wetlands and other wetland areas in 22 European countries. It has been seen to have colonised 16 countries.
Under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 it is offence to intentionally keep, breed, transport to, from or within Northern Ireland, use or exchange Muskrat, or to release it into the environment.

Key ID Features

Report any sightings via: CEDaR Online Recording - <https://www2.habitas.org.uk/records/15> | Record app or Invasive Species Northern Ireland website - <http://invasivespeciescent.co.uk/report-sighting>

Pallas's Squirrel

Species Description
Scientific name: *Callosciurus erythraeus*
AKA: belly-banded squirrel, red-bellied tree squirrel
Native to: North-eastern India, South East Asia, China and Taiwan
Habitat: Various types of woodland, including orchards and parks; prefers mixed species broad-leaved evergreen forests
 The Pallas squirrel is a medium sized red-bellied tree squirrel which is highly arboreal and opportunistic. Geographical variation is considerable with different color forms. The upper body is usually dark brown with the belly being a reddish-brown. It has a long, bushy tail which is used for balance and support when climbing. Pallas's squirrel has been introduced to Northern Ireland in the 19th century for fur farming, subsequent escapes from confinement led to establishment of wild populations. As a result of natural dispersal the species colonised coastal marshes, wetlands and other wetland areas in 22 European countries. It has been seen to have colonised 16 countries.
Under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 it is offence to intentionally keep, breed, transport to, from or within Northern Ireland, use or exchange Pallas's squirrel, or to release it into the environment.

Key ID Features

Report any sightings via: CEDaR Online Recording - <https://www2.habitas.org.uk/records/15> | Record app or Invasive Species Northern Ireland website - <http://invasivespeciescent.co.uk/report-sighting>

Raccoon

Species Description
Scientific name: *Procyon lotor*
AKA: common raccoon, northern raccoon
Native to: Central and North America
Habitat: Woodland, urban areas, forests, agricultural lands
 The raccoon is a medium-sized member of the order Carnivora, with a stocky frame and short legs. It has a distinctive black eye mask and a long bushy tail which is used for balance and support when climbing. Raccoons have been introduced to Northern Ireland in the 19th century for fur farming, subsequent escapes from confinement led to establishment of wild populations. As a result of natural dispersal the species colonised coastal marshes, wetlands and other wetland areas in 22 European countries. It has been seen to have colonised 16 countries.
Under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 it is offence to intentionally keep, breed, transport to, from or within Northern Ireland, use or exchange Raccoon, or to release it into the environment.

Key ID Features

Report any sightings via: CEDaR Online Recording - <https://www2.habitas.org.uk/records/15> | Record app or Invasive Species Northern Ireland website - <http://invasivespeciescent.co.uk/report-sighting>

Raccoon Dog

Species Description
Scientific name: *Nyctereutes procyonoides*
AKA: Irvana
Native to: Northeast Asia
Habitat: Adapted to most habitats, prefer meadows, deciduous and mixed forest
 Nyctereutes procyonoides is the size of a fox, but with shorter legs and a relatively long tail. It has a black eye mask and a long bushy tail which is used for balance and support when climbing. Raccoon dogs have been introduced to Northern Ireland in the 19th century for fur farming, subsequent escapes from confinement led to establishment of wild populations. As a result of natural dispersal the species colonised coastal marshes, wetlands and other wetland areas in 22 European countries. It has been seen to have colonised 16 countries.
Under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 it is offence to intentionally keep, breed, transport to, from or within Northern Ireland, use or exchange Raccoon dog, or to release it into the environment.

Key ID Features

Report any sightings via: CEDaR Online Recording - <https://www2.habitas.org.uk/records/15> | Record app or Invasive Species Northern Ireland website - <http://invasivespeciescent.co.uk/report-sighting>

Muskrat

Pallas' squirrel

Raccoon

Raccoon dog

Ruddy duck

Species Description
Scientific name: *Oxyga jamaicensis*
Native to: North America and western South America
Habitat: Lowland wetlands with lush emergent vegetation and areas of open water
 A small, compact duck with broad, short wings and narrow, stiff tail vane. The male is easily recognized by his distinctive blue bill, often obscured by his head. The females are a dull brown colour, with a cream coloured face. The ruddy duck is a native of North America and was introduced to the UK in the 1920s and released into the wild. It is currently present in 20 countries. The species has yet to be recorded breeding in the wild in the UK or Ireland.
 Under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 it is offence to intentionally keep, breed, transport to, from or within Northern Ireland, use or exchange Ruddy duck, or to release it into the environment.

Key ID Features

Report any sightings via: CEDaR Online Recording - <https://www2.habitat.org.uk/report-ias/> (Record app or Invasive Species Northern Ireland website - <https://www2.habitat.org.uk/report-ias/>)

Ruddy duck

Sacred Ibis

Species Description
Scientific name: *Threskiornis aethiopicus*
Native to: Sub-Saharan Africa
Habitat: Wide range of mostly inland habitats by lakes and rivers
 A distinctive species with a long, down-curved bill, white body and black head and neck.
 Sacred Ibis is not present in the wild in Northern Ireland. It was first brought into France and Italy as a zoological specimen in the 19th century but has since escaped into the wild. It is currently present in 20 countries. The species has yet to be recorded breeding in the wild in the UK or Ireland.
 Sacred Ibis are highly mobile and adaptable. They feed in a variety of semi-aquatic habitats including wetland, open, grassy and ploughed fields but are mostly found in wetlands, often in large colonies. Through its feeding habits, it can cause damage to crops, pasture and water bodies, thus causing severe biodiversity losses locally. Colonies nesting species such as terns and seabirds are particularly vulnerable.
 Under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 it is offence to intentionally keep, breed, transport to, from or within Northern Ireland, use or exchange Sacred Ibis, or to release it into the environment.

Key ID Features

Report any sightings via: CEDaR Online Recording - <https://www2.habitat.org.uk/report-ias/> (Record app or Invasive Species Northern Ireland website - <https://www2.habitat.org.uk/report-ias/>)

Sacred ibis

Siberian Chipmunk

Species Description
Scientific name: *Tamias sibiricus*
Native to: North European Russia, China, Korea and Japan
Habitat: Woodland with understorey
 The Siberian chipmunk is a small striped squirrel with a long bushy waving grey tail, mostly grey fur and less black stripes coming from head and tail.
 It was introduced into Europe as a pet in the 1920s. Since then, individuals have escaped or been deliberately released from captivity. So far, scattered wild populations have been recorded in woodlands, suburban forests and urban parks in Belgium, France, Germany, Ireland, Italy and the Netherlands. Siberian Chipmunk is not present in Northern Ireland.
 If introduced to Northern Ireland it would likely compete with native rodents and may cause a local impact on ground-nesting birds. Released individuals could also cause significant damage to crops, pasture and water bodies and it is a potential host for various infectious diseases, such as Lyme disease or rabies, and parasites.
 Under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 it is offence to intentionally keep, breed, transport to, from or within Northern Ireland, use or exchange Siberian chipmunk, or to release it into the environment.

Key ID Features

Report any sightings via: CEDaR Online Recording - <https://www2.habitat.org.uk/report-ias/> (Record app or Invasive Species Northern Ireland website - <https://www2.habitat.org.uk/report-ias/>)

Siberian chipmunk

Terrapins

Species Description
Scientific name: *Trachemys scripta* spp.
AKA: Sliders
Native to: North America
Habitat: Ponds, still or slow-flowing water. Commonly found in urban parks.
 Red-eared sliders (*Trachemys scripta elegans*) are dark green and have some yellow-orange markings on the sides of their head and neck. They are the most common species of turtle found in the UK. They can grow to 30 cm in length. Yellow-bellied sliders (*Trachemys scripta elegans*) are usually dark brown and have prominent yellow stripes on the sides of their head and neck. They can grow to 30 cm in length. Cooterhead sliders (*Trachemys scripta*) have a distinctive green shell with yellow and black spots. They can grow up to 21 cm in length.
 Terrapin sliders are present in Northern Ireland. A large number were imported in the mid-1980s for the pet trade. Subsequent releases and escapes have led to a large population of sliders in the wild. Sliders are opportunistic omnivores and feed on a wide range of food items including algae, plants, insects, and small animals. They are also known to eat human food waste, which can affect the health of the turtles and the environment.
 Under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 it is offence to intentionally keep, breed, transport to, from or within Northern Ireland, use or exchange Terrapin sliders, or to release it into the environment.

Key ID Features

Report any sightings via: CEDaR Online Recording - <https://www2.habitat.org.uk/report-ias/> (Record app or Invasive Species Northern Ireland website - <https://www2.habitat.org.uk/report-ias/>)

Terrapins

Annex 5

The NIEA [FAQs document](#) for the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 provides answers to common questions surrounding the issue of listed IAS in relation to zoos and the pet industry.

Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019

Frequently Asked Questions

Sustainability at the heart of a living, working, active landscape valued by everyone.

NIEA | Northern Ireland Environment Agency
www.dae-ni.gov.uk

An Agency within the Department of Agriculture, Environment and Rural Affairs
www.dae-ni.gov.uk

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