

REVIEW OF IMPLEMENTATION OF THE RETAINED EU INVASIVE ALIEN SPECIES REGULATION (EU 1143/2014) IN GREAT BRITAIN 2015-2020

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This review is published by the Secretary of State, Scottish and Welsh Ministers acting jointly, pursuant to Article 24(3) of the retained EU Regulation 1143/2014. It meets the requirement “*by 1 June 2021, to review the application of this Regulation including the list of species of special concern, the action plans referred to in Article 13(2), the surveillance system, customs controls, eradication obligation and management obligations, and publish a report. That review shall also examine the need for and the feasibility of including species native to Great Britain in the list of species of special concern.*”

1. Origins – the development of the EU Invasive Alien Species Regulation in relation to the GB INNS Strategy

The UK was strongly supportive of the EU Invasive Alien Species Regulation (“the EU Regulation”) from the outset. The approach followed that already set out in the GB strategy, with an emphasis on surveillance, detection, rapid eradication and action planning on pathways for invasive species.

The early years

While the EU Regulation came into effect in January 2015, the GB administrations decided to await the publication of the first list of species in August 2016 before determining the implementation approach. This was because some measures were already in place to manage certain species through the Wildlife and Countryside Act 1981.

The developing approach to implementation in the UK

Collaboration between the four UK administrations was fostered by establishing regular catch-up meetings as well as by discussions at the pre-existing senior level Programme Board.

2. Implementing Legislation

In England and Wales, a [consultation](#) was undertaken from January to April 2018 proposing the use of both criminal and civil sanctions for breaches of the EU Regulation. The joint Defra and Welsh Government [response](#) was published in July 2018, confirming proposals for a new enforcement regime in England and Wales. The provision of both criminal and civil sanctions for all offences is an indication of the seriousness with which Defra and the Welsh Government takes the need to tackle the threat of invasive species.

In Scotland, Scottish Ministers set out their intention to put in place criminal offences using the existing, wide-ranging powers under sections 14, 14ZC and 14A to 14O of

the Wildlife and Countryside Act 1981. A consultation was conducted in January 2019 in line with section 26(4A) of the Wildlife and Countryside Act, with Scottish Natural Heritage consulted and in agreement with the approach taken.

Following these consultations, in England and Wales, the [Invasive Alien Species \(Enforcement and Permitting\) Order](#) 2019 (“the IAS Order”) came into force on 1 December 2019. In Scotland, the Wildlife and Countryside Act 1981 (Keeping and Release and Notification Requirements) (Scotland) Amendment Order 2019 and the Wildlife and Countryside Act 1981 (Prohibition on Sale etc. of Invasive Animal and Plant Species) (Scotland) Amendment Order 2019 came into force in April 2019.

3. Surveillance system

Great Britain has established a surveillance system to determine the presence and distribution of new and established invasive non-native species (INNS) of special concern. This system includes, among other things: the development and maintenance of essential partnerships with recording schemes, societies, organisations, and the general public; awareness-raising activities; the provision of identification information and reporting tools; systems and work to improve more effective and efficient reporting of species across taxa and environments (including apps and online tools); an alert system for high priority species, as well as dedicated surveillance programmes for specific species of special concern; and, a centrally maintained database of INNS information to support analysis, modelling, distribution mapping etc. The system is designed to support the early detection of new species of special concern should they arrive in GB (to facilitate a management response), mapping and monitoring of established species and other forms of analysis.

Recording, Reporting and Maintaining Data

At the heart of the system is the GB Non-native Species Information Portal (GB-NNSIP)¹ which has been funded, by Defra, to be Great Britain’s central hub for non-native species recording since 2009; it also benefits from work supported by the Natural Environment Research Council as part of the UK-SCAPE programme delivering National Capability. It is led by the Centre for Ecology and Hydrology and is a partnership including the Botanical Society of Britain and Ireland, British Trust for Ornithology and the Marine Biological Association, alongside a network of people including the volunteer recording schemes and societies hosted by the Biological Records Centre (BRC) and other organisations engaged in sharing information on non-native species^{2 3}. By working in partnership, the GB-NNSIP has built on the

¹ Roy, H.E., *et al.* (2014a) Horizon scanning for invasive alien species with the potential to threaten biodiversity in Great Britain. *Global Change Biology*, 20, 3859-3871.

² Roy, H.E., Preston, C.D., Harrower, C.A., Rorke, S.L., Noble, D., Sewell, J., Walker, K., Marchant, J., Seeley, B. & Bishop, J. (2014b) GB Non-native Species Information Portal: documenting the arrival of non-native species in Britain. *Biological Invasions*, 16, 2495-2505

³ Roy, H.E., Rorke, S.L., Beckmann, B., Booy, O., Botham, M.S., Brown, P.M., Harrower, C., Noble, D., Sewell, J. & Walker, K. (2015) The contribution of volunteer recorders to our understanding of biological invasions. *Biological Journal of the Linnean Society*, 115, 678-689.

long history of extensive biological recording that is already established in GB and harnesses this to encourage and facilitate the flow of INNS records from a wide range of sources into central databases (See Figure 1 below).

Central Database

- **Species register** – taxonomy, dates and pathways of introduction, habitat, synonyms
- **297 factsheets** – description, photo, biology, ecology, habitat, range, impact, management, bibliography

Occurrence data

- **NBN Gateway**

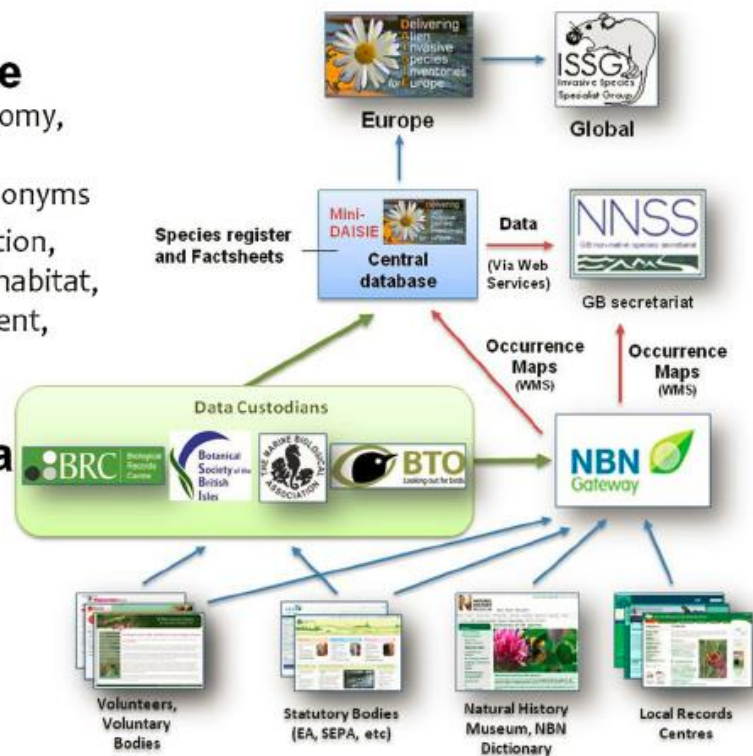


Figure 1. Structure and data flow in the GB-NNSIP

While species of special concern are prioritised, the GB-NNSIP is comprehensive, comprising a register of over 3000 non-native species, together with supporting information on country of origin, arrival pathway, establishment status, occurrence within habitats, date of first record, human impact and environmental impact. It is dynamic, being constantly populated with new data and incorporating reporting systems to inform and alert various stakeholders.

Among many other things, the GB-NNSIP:

- Increases recording of INNS by raising awareness (presentations, communications, direct contact with recording schemes/societies/statutory bodies, etc.);
- Encourages INNS recording across taxa and environment.
- Facilitates the recording of INNS through online and back-end technology, apps, etc.
- Provides a central repository for INNS information.
- Can be used to provide analysis, including provision of occurrence and other data to government to support management.
- Established and maintains the alert mechanism (see below).

The alert system, dedicated surveillance, and verification

The early detection of new species is often essential to support effective and efficient management responses. As such, an alert mechanism has been established in GB to support the rapid identification and reporting of INNS of special concern (as well as other priority species). The alert system (Figure 2 below) is promoted through the Non-Native Species Secretariat website (www.nonnativespecies.org) and links to iRecord (www.brc.ac.uk/irecord), a website for managing wildlife records, and enables rapid reporting and verification of species considered as a priority for action. On-line capability enables people to register for notification of selected species of interest and ensures rapid data flow to support effective decision-making. The alert system deals with suspected records of the INNS of special concern and also includes species identified as high-risk through horizon scanning. Any person may report a sighting of an alert species via a range of methods including a dedicated email account (alert_nonnative@ceh.ac.uk), a suite of online recording forms and several apps including 'Asian Hornet Watch'. Suspected sightings of alert species are stored within a central database that provides record details to authorised users, with system notifications automatically sent to registered users when sightings are confirmed or considered plausible. As well as this alert system, there are established links with the NBN Atlas that generate automated notifications when new records of alert species are uploaded to the database. Anyone can register to receive notifications of alert species but additionally reports of sightings of particular concern are forwarded immediately to the Non-Native Species Secretariat and other authorities.

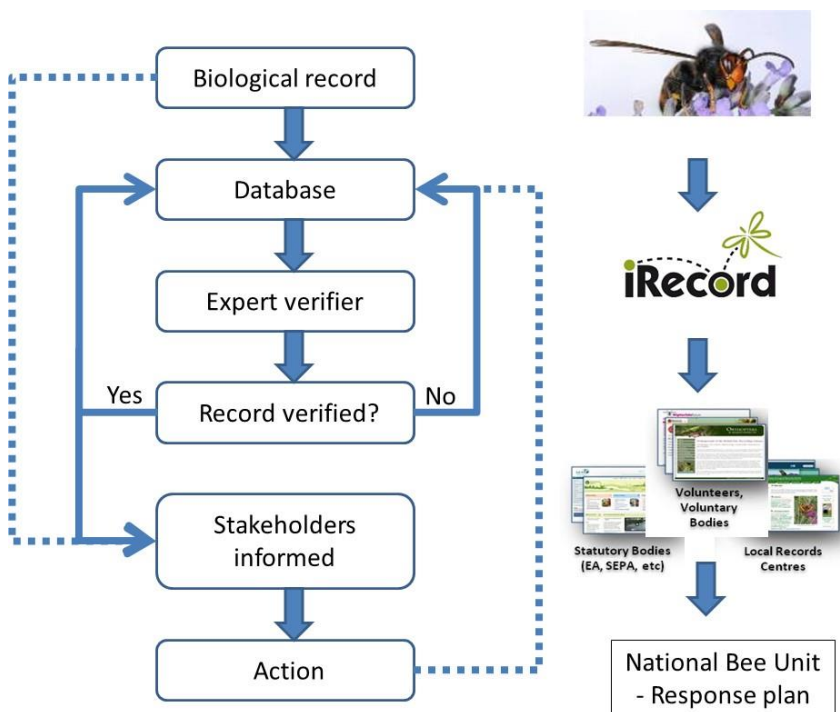


Figure 2. Outline of the alert system in which a biological record is received either by e-mail or within iRecord. The record is checked by an expert and either confirmed (verified) or not. The database is updated, and stakeholders are informed if the record is verified so that they can take appropriate action. In some cases, stakeholders are notified prior to verification if rapid response is necessary.

The appropriate authorities are automatically informed of reports of high priority species in most cases, or manually informed in the case of alerts sent solely through the email system. The system monitors alerts in (effectively) real time, with most high priority reports verified and reported to the authorities in a matter of a few days. For example, from detection to destruction for an Asian hornet nest in Hampshire through this system took 3 days. To date the alert mechanism has received over 15,000 reports in total and has been vital in the detection and response to Asian hornet (See Figure 3, below). Other species of special concern that GB has detected and responded to since 2015 include raccoon (single individual, not considered a wild population), coati and various-leaved watermilfoil (detected before being listed as a species of special concern), among others.

Early detection and rapid response are particularly important for the Asian hornet, a species of special concern that can spread extremely rapidly and requires detection at the earliest opportunity to prevent it from establishing in GB. An additional dedicated surveillance system has been developed for this species, using a network of sentinel apiaries. This has involved identifying strategically located beekeepers in areas the Asian hornet may arrive in GB and providing training, traps and other resources to ensure they detect and report the hornet as soon as it is detected. This too has been essential in GB's response to this species.

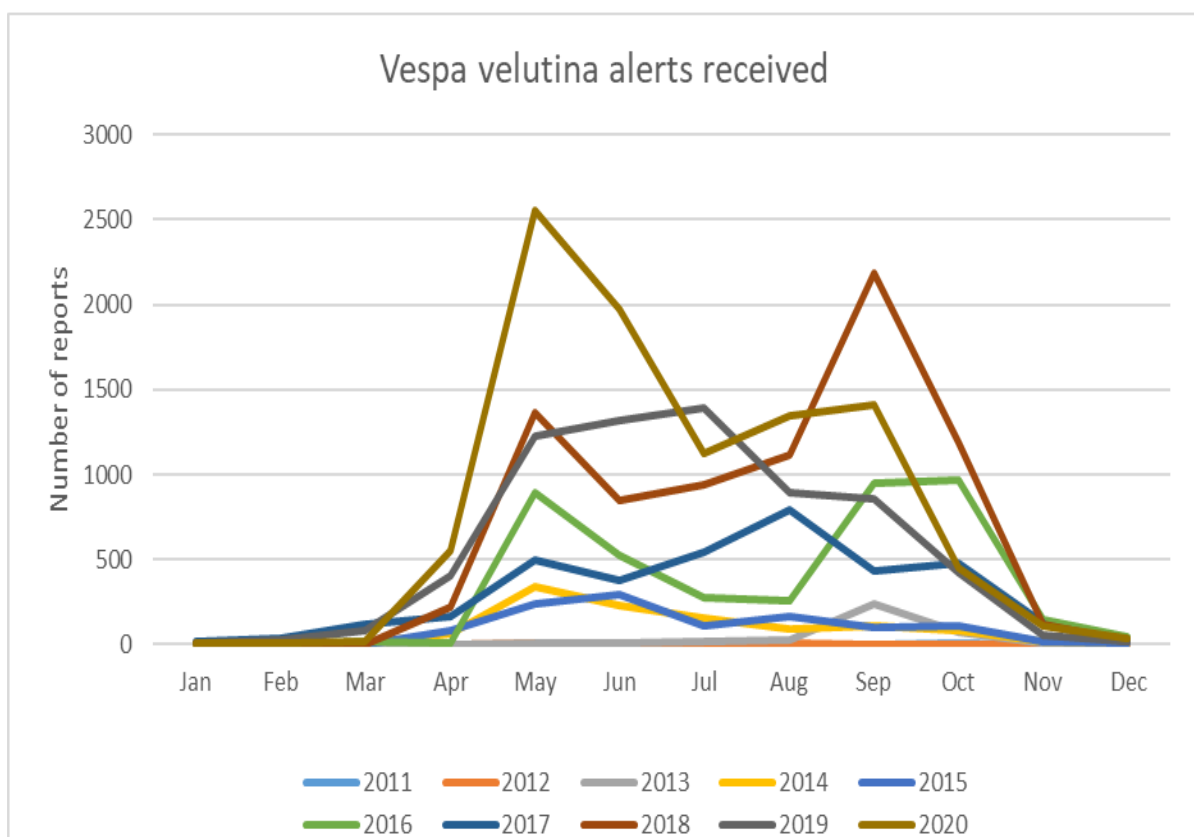


Figure 3. Number of reports sent to the alert system as suspected Asian hornet each year since 2011. The vast majority of these were not Asian hornet, but similar species such as the native hornet and other bees, wasps and flies.

Awareness Raising and Identification Information

Awareness and identification are essential components on the surveillance system. To this end GB has produced identification sheets for 23 species of special concern, including alert posters for key species to support early detection and eradication (see Annex, section 6).

In addition, awareness is raised via a significant number of activities and networks. See section 7 below on outreach.

INNS reporting portal on Scotland's Environment Website and NBN Atlas Wales

The INNS reporting portal on Scotland's Environment Website provides the main mechanism for public reporting INNS of special concern in Scotland. Reports can also be made by phone or email to the SEARS 24hr customer helpline. Records are verified by experts before being fed into the GB information portal. The Portal collates records from a variety of different sources and provides access to distribution data for all INNS of special concern present in Scotland, as well as additional information such as place or origin, date of introduction and methods of introduction. Distribution data is provided directly to the NBN Gateway.

In 2018 the Welsh Government commissioned the NBN Atlas Wales to release the Invasive Non-Native Species (INNS) Portal. The INNS Portal supplements the GB-NNSIP and its Alerts mechanisms by providing a facility to view and search for INNS specifically of interest to Wales. The INNS Portal includes over 300 terrestrial, freshwater and marine species of interest to Wales and allows species occurrences and distribution to be searched for and downloaded individually or collectively by list. Species include those listed under EU and national legislation and those of policy and practical interest, including those identified as Wales Priority Invasive Non-Native Species for Action by the Wales Biodiversity Partnership INNS Group.

The Wales Biodiversity Partnership INNS Group maintains a list of Priority Species for Action in Wales. Species are listed under three categories – prevention priority species (those not yet in the wild but likely to arrive), management priority species (those present in the wild in low numbers) and long-term management priority species (those established in the wild). The Welsh Government has also produced Priority Monitoring and Surveillance lists for Marine INNS.

4. Eradication obligation

GB has successfully prevented new species of special concern from establishing in its territory, despite a number of incursions. Since 2016 the GB surveillance system has detected 11 occurrences of new species of special concern with the potential to form populations in the wild in GB. These included one record each for coati (*Nasua nasua*) and raccoon dog (*Nyctereutes procyonoides*) and ten records for Asian hornet (*Vespa velutina*). Rapid responses (described in Annex, Section 3) were delivered in all cases following the generic contingency plan for terrestrial vertebrates in the case of coati and raccoon dog and the pest-specific contingency plan for Asian hornet. The coatis were successfully trapped and re-homed. A single raccoon dog was trapped and humanely dispatched. In both cases there is no suspected population remaining in the wild. In the case of Asian hornet, new nests have been detected and eradicated every year since 2016. These do not appear to

be related to each other and it is suspected that each nest represents a separate incursion, probably from northern Europe.

5. Management Measures

See Annex, Section 4. The governments in England and Wales subsequently launched a public consultation on management measures for widely-spread species under Article 19 of the EU Regulation. This attracted some 700 responses. The joint Defra and Welsh Government [response](#) to the consultation set out a series of general management measures and the policy approach that would be taken in relevant licensing decisions for the more specific measures required. Guidance on the IAS Order was published in August 2020 for [plants](#) and [animals](#). In Scotland, where there is a smaller number of widely-spread species, there had already been a recent consultation on management measures in relation to the different legislative approach taken there, using the Wildlife and Countryside Act, and so there was no additional consultation undertaken relating to the EU Regulation.

Licensing, permitting and enforcement

The IAS Order implements the requirements contained in the EU Regulation, now the retained EU Regulation, by putting in place enforcement, licensing and permitting regimes for GB⁴. The Order applies to England and Wales and the UK offshore marine area, apart from provisions which relate to controls on import into and export from GB, which apply to GB as a whole. In Scotland, Scottish Ministers have set out their intention to use the enforcement measures under sections 14D to 14P, 19, 19ZC, 19ZD, 20 and 21 of the Wildlife and Countryside Act 1981. The licensing and permitting regime operates under section 16 of the 1981 Act, with requirements contained in the retained EU Regulation set out in Schedule 9B.

As the EU Regulation applied directly, APHA was appointed as the Competent Authority for permitting on behalf of all the GB Administrations before the domestic implementing legislation was put in place. The volume of permits sought has increased during the period in which the EU Regulation (now the retained EU Regulation) has been in force, particularly since the publication of guidance clarifying that zoos and colleges keeping listed species should apply for permits. The permitting team has adapted to this increase and has successfully continued issuing permits for activities requiring them. There has been some confusion on the part of customers about which activities require a permit and which require a licence, and we will consider providing clearer guidance on this point. We will also consider making the application process more user-friendly for facilities that keep a wide range of species. There have been no inspections of permitted facilities to date, but the GB administrations have commissioned the GB Non-Native Species Secretariat to scope the establishment of an inspectorate to help with this in future.

⁴ the IAS Order also partially applies to NI, but note that this Review does not cover NI

Two species in particular – Grey Squirrel and Signal Crayfish – were the focus of considerable discussions with stakeholders about management measures in England.

Grey Squirrels

The IAS Order ended the practice of releasing this species from animal rescue centres, bringing the regulatory regime for this species into line with Scotland and Wales.

Signal Crayfish

For this species, which is widely traded in England, the management measures included an end to the live sale of Signal Crayfish, and the pre-existing policy of not allowing commercial exploitation of Signal Crayfish in exclusion zones (“no-go areas”) was maintained. Commercial exploitation may continue in containment zones in England under the terms of a management measure licence, but Crayfish must be dispatched at the place of capture or taken to a licensed processing facility in England.

As a transitional measure in England, the live export of Signal Crayfish from the containment zones was allowed to continue for two years from December 2019, under a set of strict conditions, to enable businesses to adapt to the new regime. Two licences were issued under this transitional arrangement. Initially, until 31 December 2020, traders were able to take advantage of a “Dutch exemption” under which EU Member States could export live Signal Crayfish to the Netherlands for sale and consumption there. Subsequently, Finland became the main export destination, with most animals being air freighted. There has been no evidence of breaches of licence conditions, and overall, there is evidence that the IAS Order has driven a shift to alternative markets and the use of processed crayfish for domestic consumption. The Secretary of State has appointed the Centre for Environment, Fisheries and Aquaculture (Cefas) as enforcement officers, and they have begun a programme of inspections.

6. Pathway Action Plans

The UK’s comprehensive analysis of pathways <https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=1980> identified a total of 36 pathways of introduction. Six of these were prioritised for pathway action plans (PAPs): hull fouling, horticulture escapes, contaminants of ornamental plants, ballast water, stowaways on fishing equipment and zoos. The PAP for zoos had already been completed, approved by the GB Non-native Species Programme Board and published on the GB Non-native Species Secretariat (GBNNSS) website before the comprehensive analysis was complete. Further plans for recreational boating and angling were approved by the GB Programme Board and published in 2020. Work continues on a plan for horticultural contaminants and escapes. All PAPs were developed and approved by working groups comprising a wide range of relevant government and non-government stakeholders. However, in

order to ensure that the public was given early and effective opportunities to participate in their preparation, modification or review (as required by Article 26 of the EU Regulation, now the retained EU Regulation) stakeholders were invited to comment on them via the GBNNSS website. Once the final priority PAPs have been completed and approved, the full suite will be put to public consultation, with a view to publishing the final versions by the end of 2022.

7. Outreach: Media and Communications

GB has an extensive programme of awareness-raising activities and information, including a Media and Communications Plan (updated in 2017). As part of this plan, we have undertaken a stakeholder analysis and our work is targeted towards these groups. There is provision for students and young audiences, for example through our education and schools work. Stakeholders have been extensively involved in the development of action plans and there has been a public consultation on management measures for England and Wales. EU Member States have been engaged with GB work to manage pathways (e.g. France, Belgium and Netherlands in relation to angling and boating pathways) and through the Rapid Life project. In addition to the alert mechanism described in Section 3 above, our outreach work is described below.

Awareness-raising and encouraging better biosecurity

There are country-level working groups to help identify priorities that are relevant at a country scale. Each of the country groups includes representatives from the public, private and third sector who promote local, regional and national action, promote best practice and legislative requirements, encourage recording, and dissemination of information and raise awareness of INNS and their impacts amongst their membership organisations. We also have two awareness-raising campaigns to improve awareness and biosecurity among key groups, *Be Plant Wise* and *Check Clean Dry*, and run an annual week of public awareness raising, *Invasive Species Week*.

Be Plant Wise www.nonnativespecies.org/beplantwise.

Be Plant Wise was developed to inform gardeners and pond owners of the potential impact of invasive aquatic plants, including *Ludwigia* spp, *Hydrocotyle ranunculoides*, and *Myriophyllum aquaticum*, listed as INNS of special concern. The campaign provides guidance on actions citizens should take to reduce the risk of spreading these and other plant species in the wild, such as disposing of plants responsibly.

In 2020 we extended the coverage of the campaign to include terrestrial plants and updated the materials and messaging to ensure they are engaging to gardeners and pond owners. The updated guidance includes information on restricted plants, including the 36 plant species of special concern.

The campaign was developed in partnership with industry. Our partners have helped to disseminate guidance and awareness-raising materials to their membership of plant retailers, who have displayed these to customers. In spring 2021 we are displaying adverts in relevant magazines and websites to further the reach of the campaign.

Check Clean Dry www.nonnativespecies.org/checkcleandry

Check Clean Dry aims to raise awareness of invasive aquatic species and their impacts, and asks recreational water users (anglers, boaters, canoeists and kayakers in particular) to check, clean, and dry their equipment after leaving the water to prevent the spread of invasive aquatic species.

The campaign was developed in partnership with key partners including the Angling Trust, Royal Yachting Association and British Canoeing, who have continued to promote the guidance and materials to their membership of clubs and individuals. We have provided awareness-raising materials including biosecurity signage which clubs have displayed at waterbodies to encourage visitors to follow the campaign guidance. 3,503 biosecurity signs (1,251 since 2015), 5,000 posters (2,600 since 2015), and 92,000 leaflets (75,000 since 2015) have been sent out. A number of campaign video clips are also available to view online including *Biosecurity for boat owners*, *Biosecurity for Canoe and Kayak Owners*, *Biosecurity for Anglers* and *Information about Killer Shrimp*.

Since 2016 a border biosecurity campaign based on *Check Clean Dry* has been held each summer, asking recreational water users travelling abroad to ensure their kit is clean and dry before using again in GB. Posters have been displayed at key ports with links to the continent, and adverts in relevant magazines and websites. In 2018 a public attitudes survey was undertaken leading to a refresh of the *Check Clean Dry* campaign to update the materials and messaging to ensure they are appropriate for recreational water users.

Invasive Species Week www.nonnativespecies.org/invasivespeciesweek

Invasive Species Week is an annual initiative involving organisations such as environmental NGOs, industry and Local Action Groups, intended to raise public awareness of INNS, their impacts and what citizens can do to help. Examples of activities undertaken during Invasive Species Week 2019 include: a social media campaign (e.g. 28 different blog articles, tweets reaching 150,000 Twitter feeds, videos produced and posted online); practical management and biosecurity events (e.g. 34 different invasive species removal work parties and 93 events with activities ranging from management training and biosecurity); ministerial events (e.g. supporting Local Action Groups to remove invasive species); and, media engagement (e.g. four television interviews).

Biosecurity

A range of online freely available e-learning modules have been produced to provide an introduction to non-native species, and how to identify them, including two on biosecurity (see Annex, section 6).

8. Customs controls, and implementation at the UK Border

The IAS Order also ensured that the EU Regulation (now the retained EU Regulation) is effectively enforced at the UK border, making provision for live specimens of INNS to be seized at the UK border and for detained specimens to be handled appropriately. It identifies the competent authorities responsible for the official controls and put in place supporting provisions. For example, it makes provision for live specimens of species of special concern to be seized at the UK border by Border Force officials. There are arrangements in place for detained consignments to be passed to the Animal and Plant Health Agency who will arrange for specimens to be handled appropriately. Animals will not be euthanised in all cases; where appropriate arrangements may be made for their re-export or transfer to an appropriate facility, in discussion with their owners. The IAS Order provides for recovery of enforcement-related costs from importers by enforcement authorities.

9. Impact of EU Exit and the Northern Ireland Protocol

The requirements of the EU Regulation have been retained⁵ in UK law. Necessary amendments were made to ensure that they remained operable by 'Exit SIs' made under the European Union (Withdrawal) Act 2018. The Northern Ireland Protocol means that NI retains the EU list of species of Union concern and reporting requirements to the European Commission. Replacement bodies have been set up on a GB basis for the bodies that previously advised on species listing under the EU Regulation. These are the GB Non-native Species Committee ("the GB Committee"), which will now advise Ministers of the three GB administrations about species listing, and the GB Non-Native Risk Analysis Forum (GB NNRAF) which, in turn, will provide scientific advice to the GB Committee on risk assessment of species for the purpose of listing.

10. Impacts of Covid 19 and associated restrictions

The impacts on the control of INNS of the Covid Pandemic and its associated restrictions were wide ranging. They were particularly severe where the management of widespread species involved the use of parties of volunteers, such as with the removal of floating pennywort, or even where two people needed to work in close proximity, such as egg control to eradicate monk parakeet. Access to private land to control Egyptian Geese was not possible. Further, with scientific staff required to work from home, laboratory and field work (such as fertility control of

⁵ Invasive Non-native Species (Amendment etc.) (EU Exit) Regulations 2019 (SI 2019/223); the Animal Health, Alien Species in Aquaculture and Invasive Non-native Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/813); and the Animal Welfare and Invasive Non-native Species (Amendment etc.) (EU Exit) Regulations 2020 (SI 2020/1590).

Grey Squirrel) was delayed. During the first lockdown, many facilities applying for IAS permits were forced to shut down temporarily with limited staff available. This meant many permit applications could not be completed and had to be left open for several months. Many voluntary organisations working on the control of invasive species lost staff, and there were fewer eyes and ears on the ground to detect invasive species. With the easing of restrictions, and some funding streams available associated with Green Recovery these activities are gradually re-starting, but the temporary let-up has undoubtedly handed some species, such as Floating Pennywort *Hydrocotyle ranunculoides*, an advantage.

11. The future of implementation

Species listing

The “list of species of Union concern” under the EU Regulation has been converted into the “list of species of special concern” now that we have left the EU. The “list of species of special concern”⁶ currently applies across all parts of the UK; in England, and Wales, in Scotland in respect of import and export, and in both Scotland and Northern Ireland as regards the offshore marine area.

The Secretary of State may by regulations amend the list of species of special concern to add or remove species from that list. The Secretary of State may only make such regulations with the consent of the Scottish and Welsh Ministers, although this consent applies only to import and export for Scotland.⁷ The retained EU Regulation as it applies to Scotland in devolved areas allows Scottish Ministers to amend the list for Scotland except where listing relates to imports and exports or the offshore marine area. This means that while the list covering import and export will be on a GB basis (and the list for the offshore marine area will be on a UK basis), Scotland can add and remove species from their own list in devolved areas, following the procedure in Article 4. The intention is to maintain the Scottish list as close as possible to that of GB, through discussion at the GB Committee. Consideration of species listing on a GB basis will be done by Ministers of the GB administrations, advised by the GB Committee and GB Non-Native Risk Analysis Forum.

The GB administrations have jointly considered listing species native to GB and there are no species for which we consider this to be feasible at this stage, but there is an opportunity to revisit this as part of the Comprehensive Review of Species Listing, which is required before 2 August 2022.

Licensing, permitting and enforcement

⁶ This list was converted from the EU list of species of Union concern upon Exit

⁷ See Article 32A(4) and (5) of the retained EU Regulation.

Defra and the Welsh Government will continue to work together and with the Scottish Government to develop a joined-up approach, particularly about protocols for escaped animals. Here, we will combine technical advances and legal advice, building on the generic contingency plans which we already have in place to develop more specific approaches, for example, to escaped Raccoon dog.

Working with our neighbours on surveillance and detection

The GB administrations also plan to develop our ability to detect INNS, both by using the best available tools and by improving our levels of inspection. Although we no longer have access to the European Alien Species Notification System (EASIN NOTSYS), in GB we have a robust system of alert notifications in place via the Non-Native Species Information Portal (NNSIP). We are reviewing the systems in place for gathering information on INNS considered a priority for rapid recording (alert systems) across the British Irish Council jurisdictions⁸ and will consider potential interoperability so that, as neighbours, we can alert one another to the presence of these species when they arrive in our countries.

On-line sales

One relatively novel area where we will continue to develop our approach is with on-line sales of listed species. While some on-line platforms had been receptive to *ad hoc* requests from the Defra policy team to remove adverts for listed species before the IAS Order came into force, immediately after it came into force, listed invasive plant species continued to be readily available for purchase from the larger on-line retailers. Stakeholders and “bricks-and-mortar” businesses that were complying with the new restrictions raised their concerns about this with Defra. Defra policy officials contacted the Department for Culture, Media and Sports’ new unit working with the GAFAM Companies – Google, Amazon, Facebook, Apple and Microsoft. Through the GAFAM unit we provided Amazon UK with the full list of prohibited plant species and informed them that the offending adverts needed to be removed, and that they must take steps to prevent adverts for those species appearing on their site. This engagement has resulted in a clear reduction of adverts for listed species that are available on Amazon. We will continue to engage with the GAFAM unit and are investigating how best to utilise their expertise and contacts in the future. The GB Administrations are now also represented on the National Wildlife Crime Unit’s cyber enabled crime panel and the policy team will continue to work with the police to enforce against on-line sales of listed species.

12. Conclusions

The EU Regulation has been retained in UK law and implemented in each GB Administration. The EU Regulation (now the retained EU Regulation) has given us important tools to tackle a list of 66 invasive species. Great Britain has successfully

⁸ England, Scotland, Wales, Northern Ireland, Ireland, the Isle of Man, Jersey and Guernsey.

prevented new species of special concern from establishing in its territory, despite a number of incursions, and there is evidence that the retained EU Regulation has driven a shift in the management of some of our most challenging widespread species such as Signal Crayfish. The GB Administrations are continuing to make progress in areas of implementation where it was slower initially, such as on Pathway Action Plans, where we are inviting views from the public, and we are scoping the development of a non-native species inspectorate.

An important next step will be to ensure that the list of species for which these tools are available is fit for the GB context, beginning with the Comprehensive Review of Species under the retained EU Regulation. We have established a new statutory body, the GB Non-Native Species Committee, to advise Ministers about this, and decisions will be based on risk assessments and sound scientific advice from the GB Non-Native Risk Analysis Forum. We will continue to collaborate on improving our detection of incursions; sharing information on these across GB and with our neighbours; on developing shared protocols for rapid eradication; and on tackling on-line sales of listed species. The GB Administrations are in the process of reviewing our GB Invasive Non-Native Species strategy. The retained EU Regulation will be both an important tool in implementing this strategy and a driver that shapes the strategy as we go forward.

ANNEX

UPDATED REPORT OF GB RESPONSIBLE AUTHORITIES REQUIRED BY THE RETAINED EU INVASIVE ALIEN SPECIES REGULATION

This Annex presents tables and figures that update the report originally provided to the European Commission on a UK basis, to encompass the period January 2015 to December 2020. As a result of the Northern Ireland Protocol the updated report only includes England, Scotland and Wales.

The updated report is set out in nine sections below following the same guidance⁹ used for the initial report required by Article 24(1).

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⁹ Explanatory Notes and Guidelines Reporting under Article 24(1) of R.1143/2014 on invasive alien species for the period 2015–2018

Section 1. Information on listed species, their distribution, spread and reproductive patterns

Information for England

Scientific name	Common name	Present in England?	Reproduction patterns	Spread patterns
<i>Alopochen aegyptiacus</i>	Egyptian goose	Yes	Sexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance f) The species predominantly spread through dispersal
<i>Baccharis halimifolia</i>	Eastern baccharis	Yes	Sexual	e) There is no evidence of new entries into Administration i) There is no evidence of spread within the Administration
<i>Cabomba caroliniana</i>	Carolina fanwort	Yes	Asexual	e) There is no evidence of new entries into Administration i) There is no evidence of spread within the Administration
<i>Eichhornia crassipes</i>	Water hyacinth	Yes	Asexual	c) The species predominantly entered with unintentional human assistance i) There is no evidence of spread within the Administration
<i>Elodea nuttallii</i>	Nuttall's waterweed	Yes	Asexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Eriochoir sinensis</i>	Chinese mitten crab	Yes	Sexual	a) The species was already widely spread e) There is no evidence of new entries into Administration g) The species predominantly spread with human assistance
<i>Gunnera tinctoria</i>	Chilean rhubarb	Yes	Both (sexual and asexual)	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance f) The species predominantly spread through dispersal
<i>Heracleum mantegazzianum</i>	Giant hogweed	Yes	Sexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Hydrocotyle ranunculoides</i>	Floating pennywort	Yes	Asexual	a) The species was already widely spread c) The species predominantly entered with

Scientific name	Common name	Present in England?	Reproduction patterns	Spread patterns
				unintentional human assistance f) The species predominantly spread through dispersal
<i>Impatiens glandulifera</i>	Himalayan balsam	Yes	Sexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Lagarosiphon major</i>	Curly waterweed	Yes	Asexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Lysichiton americanus</i>	American skunk cabbage	Yes	Both (sexual and asexual)	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance f) The species predominantly spread through dispersal
<i>Muntiacus reevesi</i>	Muntjac deer	Yes	Sexual	a) The species was already widely spread e) There is no evidence of new entries into Administration f) The species predominantly spread through dispersal
<i>Myriophyllum heterophyllum</i>	Broadleaf watermilfoil	Yes	Asexual	c) The species predominantly entered with unintentional human assistance i) There is no evidence of spread within the Administration
<i>Orconectes limosus</i>	Spiny-cheek crayfish	Yes	Sexual	e) There is no evidence of new entries into Administration f) The species predominantly spread through dispersal
<i>Orconectes virilis</i>	Virile crayfish	Yes	Sexual	e) There is no evidence of new entries into Administration f) The species predominantly spread through dispersal
<i>Oxyura jamaicensis</i>	Ruddy duck	Yes	Sexual	a) The species was already widely spread e) There is no evidence of new entries into Administration f) The species predominantly spread through dispersal
<i>Pacifastacus leniusculus</i>	Signal crayfish	Yes	Sexual	a) The species was already widely spread e) There is no evidence of new entries into Administration

Scientific name	Common name	Present in England?	Reproduction patterns	Spread patterns
				f) The species predominantly spread through dispersal
<i>Procambarus clarkii</i>	Red swamp crayfish	Yes	Sexual	e) There is no evidence of new entries into Administration f) The species predominantly spread through dispersal
<i>Pseudorasbora parva</i>	Stone moroko	Yes	Sexual	c) The species predominantly entered with unintentional human assistance f) The species predominantly spread through dispersal
<i>Sciurus carolinensis</i>	Grey squirrel	Yes	Sexual	a) The species was already widely spread e) There is no evidence of new entries into Administration f) The species predominantly spread through dispersal
<i>Ludwigia grandiflora</i>	Water-primrose	Yes	Asexual	c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Trachemys scripta</i>	Red-eared, yellow-bellied and Cumberland sliders	Yes	Not reproducing	a) The species was already widely spread d) The species predominantly entered with human assistance i) There is no evidence of spread within the Administration
<i>Myriophyllum aquaticum</i>	Parrot's feather	Yes	Asexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Arthurdendyus triangulatus</i>	New Zealand flatworm	Yes	Sexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Lepomis gibbosus</i>	Pumpkinseed	Yes	Sexual	d) The species predominantly entered with human assistance g) The species predominantly spread with human assistance
<i>Ailanthus altissima</i>	Tree of heaven	Yes	Both (sexual and asexual)	a) The species was already widely spread c) The species predominantly entered with

Scientific name	Common name	Present in England?	Reproduction patterns	Spread patterns
				unintentional human assistance g) The species predominantly spread with human assistance

Not present in England: *Acacia saligna* (Golden wreath wattle); *Acridotheres tristis* (Common myna); *Alternanthera philoxeroides* (Alligator weed); *Andropogon virginicus* (Broomsedge bluestem); *Asclepias syriaca* (Common milkweed); *Callosciurus erythraeus* (Pallas's squirrel); *Cardiospermum grandiflorum* (Balloon vine); *Cortaderia jubata* (Purple pampas grass); *Corvus splendens* (Indian house crow); *Ehrharta calycina* (Perennial veldtgrass); *Gymnocoronis spilanthoides* (Senegal tea plant); *Heracleum persicum* (Persian hogweed); *Heracleum sosnowskyi* (Sosnowsky's hogweed); *Herpestes javanicus* (Small Asian mongoose); *Humulus scandens* (Japanese hop); *Lespedeza cuneata* (Chinese bushclover); *Lithobates catesbeianus* (American bullfrog); *Ludwigia peploides* (Floating primrose-willow); *Lygodium japonicum* (Vine-like fern); *Microstegium vimineum* (Japanese stiltgrass); *Myocastor coypus* (Coypu); *Nasua nasua* Linnaeus (Coati); *Nyctereutes procyonoides* (Raccoon dog); *Ondatra zibethicus* (Muskrat); *Parthenium hysterophorus* (Whitetop weed); *Pennisetum setaceum* (Crimson fountaingrass); *Perccottus glenii* (Amur sleeper); *Persicaria perfoliata* (Asiatic tearthumb); *Plotosus lineatus* (Striped eel catfish); *Procambarus fallax* (Marbled crayfish); *Procyon lotor* (Raccoon); *Prosopis juliflora* (Mesquite); *Pueraria montana* (Kudzu vine); *Salvinia molesta* (Salvinia moss); *Sciurus niger* (Fox squirrel); *Tamias sibiricus* (Siberian chipmunk); *Threskiornis aethiopicus* (Sacred ibis); *Triadica sebifera* (Chinese tallow); *Vespa velutina nigrithorax* (Asian hornet)

Information for Wales

Scientific name	Common name	Present in Wales?	Reproduction patterns	Spread patterns
<i>Alopochen aegyptiacus</i>	Egyptian goose	No	Sexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance f) The species predominantly spread through dispersal
<i>Eichhornia crassipes</i>	Water hyacinth	Yes	Asexual	c) The species predominantly entered with unintentional human assistance i) There is no evidence of spread within the Administration
<i>Elodea nuttallii</i>	Nuttall's waterweed	Yes	Asexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Eriocheir sinensis</i>	Chinese mitten crab	Yes	Sexual	a) The species was already widely spread e) There is no evidence of new entries into Administration g) The species predominantly spread with human assistance
<i>Gunnera tinctoria</i>	Chilean rhubarb	Yes	Both (sexual and asexual)	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance f) The species predominantly spread through dispersal
<i>Heracleum mantegazzianum</i>	Giant hogweed	Yes	Sexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Hydrocotyle ranunculoides</i>	Floating pennywort	Yes	Asexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance f) The species predominantly spread through dispersal
<i>Impatiens glandulifera</i>	Himalayan balsam	Yes	Sexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Lagarosiphon major</i>	Curly waterweed	Yes	Asexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance

Scientific name	Common name	Present in Wales?	Reproduction patterns	Spread patterns
				g) The species predominantly spread with human assistance
<i>Lysichiton americanus</i>	American skunk cabbage	Yes	Both (sexual and asexual)	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance f) The species predominantly spread through dispersal
<i>Muntiacus reevesi</i>	Muntjac deer	Yes	Sexual	a) The species was already widely spread e) There is no evidence of new entries into Administration f) The species predominantly spread through dispersal
<i>Myriophyllum heterophyllum</i>	Broadleaf watermilfoil	Yes	Asexual	c) The species predominantly entered with unintentional human assistance i) There is no evidence of spread within the Administration
<i>Pacifastacus leniusculus</i>	Signal crayfish	Yes	Sexual	a) The species was already widely spread e) There is no evidence of new entries into Administration f) The species predominantly spread through dispersal
<i>Pseudorasbora parva</i>	Stone moroko	Yes	Sexual	c) The species predominantly entered with unintentional human assistance f) The species predominantly spread through dispersal
<i>Sciurus carolinensis</i>	Grey squirrel	Yes	Sexual	a) The species was already widely spread e) There is no evidence of new entries into Administration f) The species predominantly spread through dispersal
<i>Trachemys scripta</i>	Red-eared, yellow-bellied and Cumberland sliders	Yes	Not reproducing	a) The species was already widely spread d) The species predominantly entered with human assistance i) There is no evidence of spread within the Administration
<i>Myriophyllum aquaticum</i>	Parrot's feather	Yes	Asexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance

Scientific name	Common name	Present in Wales?	Reproduction patterns	Spread patterns
				g) The species predominantly spread with human assistance
<i>Arthurdendyus triangulatus</i>	New Zealand flatworm	Yes	Sexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Ailanthus altissima</i>	Tree of heaven	Yes	Both (sexual and asexual)	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance

Not present in Wales: *Acacia saligna* (Golden wreath wattle); *Acridotheres tristis* (Common myna); *Alopochen aegyptiacus* (Egyptian goose); *Alternanthera philoxeroides* (Alligator weed); *Andropogon virginicus* (Broomsedge bluestem); *Asclepias syriaca* (Common milkweed); *Baccharis halimifolia* (Eastern baccharis); *Cabomba caroliniana* (Carolina fanwort); *Callosciurus erythraeus* (Pallas's squirrel); *Cardiospermum grandiflorum* (Balloon vine); *Cortaderia jubata* (Purple pampas grass); *Corvus splendens* (Indian house crow); *Ehrharta calycina* (Perennial veldtgrass); *Gymnocoronis spilanthoides* (Senegal tea plant); *Heracleum persicum* (Persian hogweed); *Heracleum sosnowskyi* (Sosnowsky's hogweed); *Herpestes javanicus* (Small Asian mongoose); *Humulus scandens* (Japanese hop); *Lepomis gibbosus* (Pumpkinseed); *Lespedeza cuneata* (Chinese bushclover); *Lithobates catesbeianus* (American bullfrog); *Ludwigia grandiflora* (Water-primrose); *Ludwigia peploides* (Floating primrose-willow); *Lygodium japonicum* (Vine-like fern); *Microstegium vimineum* (Japanese stiltgrass); *Myocastor coypus* (Coypu); *Nasua nasua* Linnaeus (Coati); *Nyctereutes procyonoides* (Raccoon dog); *Orconectes limosus* (Spiny-cheek crayfish); *Orconectes virilis* (Virile crayfish); *Ondatra zibethicus* (Muskrat); *Oxyura jamaicensis* (Ruddy duck); *Parthenium hysterophorus* (Whitetop weed); *Pennisetum setaceum* (Crimson fountaingrass); *Perccottus glenii* (Amur sleeper); *Persicaria perfoliata* (Asiatic tearthumb); *Plotosus lineatus* (Striped eel catfish); *Procambarus clarkii* (Red swamp crayfish); *Procambarus fallax* (Marbled crayfish); *Procyon lotor* (Raccoon); *Prosopis juliflora* (Mesquite); *Pueraria montana* (Kudzu vine); *Salvinia molesta* (Salvinia moss); *Sciurus niger* (Fox squirrel); *Tamias sibiricus* (Siberian chipmunk); *Threskiornis aethiopicus* (Sacred ibis); *Triadica sebifera* (Chinese tallow); *Vespa velutina nigrithorax* (Asian hornet)

Information for Scotland

Scientific name	Common name	Present in Scotland?	Reproduction patterns	Spread patterns
<i>Alopochen aegyptiacus</i>	Egyptian goose	Yes	-	c) The species predominantly entered with unintentional human assistance i) There is no evidence of spread within Scotland
<i>Elodea nuttallii</i>	Nuttall's waterweed	Yes	Asexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Eriocheir sinensis</i>	Chinese mitten crab	Currently unknown	-	-
<i>Gunnera tinctoria</i>	Chilean rhubarb	Yes	Both (sexual and asexual)	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance f) The species predominantly spread through dispersal
<i>Heracleum mantegazzianum</i>	Giant hogweed	Yes	Sexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Impatiens glandulifera</i>	Himalayan balsam	Yes	Sexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Lagarosiphon major</i>	Curly waterweed	Yes	Asexual	c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Lysichiton americanus</i>	American skunk cabbage	Yes	Both (sexual and asexual)	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance

Scientific name	Common name	Present in Scotland?	Reproduction patterns	Spread patterns
				f) The species predominantly spread through dispersal
<i>Oxyura jamaicensis</i>	Ruddy duck	Yes	-	e) There is no evidence of new entries into Scotland.
<i>Pacifastacus leniusculus</i>	Signal crayfish	Yes	Sexual	a) The species was already widely spread e) There is no evidence of new entries into f) The species predominantly spread through dispersal
<i>Sciurus carolinensis</i>	Grey squirrel	Yes	Sexual	a) The species was already widely spread e) There is no evidence of new entries into f) The species predominantly spread through dispersal
<i>Trachemys scripta</i>	Red-eared, yellow-bellied and Cumberland sliders	Yes	Not reproducing	d) The species predominantly entered with human assistance i) There is no evidence of spread within the
<i>Myriophyllum aquaticum</i>	Parrot's feather	Yes	Asexual	c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Arthurdendyus triangulatus</i>	New Zealand flatworm	Yes	Sexual	a) The species was already widely spread c) The species predominantly entered with unintentional human assistance g) The species predominantly spread with human assistance
<i>Ailanthus altissima</i>	Tree of heaven	Yes	Unclear	-

Not present in Scotland: *Acacia saligna* (Golden wreath wattle); *Acridotheres tristis* (Common myna); *Alternanthera philoxeroides* (Alligator weed); *Andropogon virginicus* (Broomsedge bluestem); *Asclepias syriaca* (Common milkweed); *Baccharis halimifolia* (Eastern baccharis); *Cabomba caroliniana* (Carolina fanwort); *Callosciurus erythraeus* (Pallas's squirrel); *Cardiospermum grandiflorum* (Balloon vine); *Cortaderia jubata* (Purple pampas grass); *Corvus splendens* (Indian house crow); *Ehrharta calycina* (Perennial

veldtgrass); *Eichhornia crassipes* (Water hyacinth); *Gymnocoronis spilanthoides* (Senegal tea plant); *Heracleum persicum* (Persian hogweed); *Heracleum sosnowskyi* (Sosnowsky's hogweed); *Herpestes javanicus* (Small Asian mongoose); *Humulus scandens* (Japanese hop); *Hydrocotyle ranunculoides* (Floating pennywort); *Lepomis gibbosus* (Pumpkinseed); *Lespedeza cuneata* (Chinese bushclover); *Lithobates (Rana) catesbeianus* (American bullfrog); *Ludwigia grandiflora* (Water-primrose); *Ludwigia peploides* (Floating primrose-willow); *Lygodium japonicum* (Vine-like fern); *Microstegium vimineum* (Japanese stiltgrass); *Muntiacus reevesi* (Muntjac deer); *Myocastor coypus* (Coypu); *Myriophyllum heterophyllum* (Broadleaf watermilfoil); *Nasua nasua* (Coati); *Nyctereutes procyonoides* (Raccoon dog); *Ondatra zibethicus* (Muskrat); *Orconectes limosus* (Spiny-cheek crayfish); *Orconectes virilis* (Virile crayfish); *Parthenium hysterophorus* (Whitetop weed); *Pennisetum setaceum* (Crimson fountaingrass); *Perccottus glenii* (Amur sleeper); *Persicaria perfoliata* (Asiatic tearthumb); *Plotosus lineatus* (Striped eel catfish); *Procambarus clarkii* (Red swamp crayfish); *Procambarus fallax* (Marbled crayfish); *Procyon lotor* (Raccoon); *Prosopis juliflora* (Mesquite); *Pseudorasbora parva* (Stone moroko); *Pueraria montana* (Kudzu vine); *Salvinia molesta* (Salvinia moss); *Sciurus niger* (Fox squirrel); *Tamias sibiricus* (Siberian chipmunk); *Threskiornis aethiopicus* (Sacred ibis); *Triadica sebifera* (Chinese tallow); *Vespa velutina nigrithorax* (Asian hornet)

Section 2. Species for which permits have been issued during the reporting period

Permits issued in England

Scientific name	Common Name	Year	Purpose of permit	No. of permits issued	No. of permits valid	Permitted Specimens-Permits issued	Permitted Specimens-Permits valid period
<i>Alopochen aegyptiacus</i>	Egyptian Goose	2020	Ex- situ conservation	1	1	3 specimens	3 specimens
<i>Asclepias syriaca</i>	Common milkweed	2018	Research	2	2 in 2018, 1 in 2020	0.05 Kg of seeds, 230 specimens	0.05 Kg of seeds, 230 specimens in 2018, 0.05 Kg of seeds, 230 specimens in 2020
<i>Eichhornia crassipes</i>	Water hyacinth	2020	Research	1	1	25 specimens	25 specimens
<i>Eutamias sibiricus</i>	Siberian Chipmunk	2020	Ex- situ conservation	1	1	4 specimens	4 specimens
<i>Heracleum mantegazzianum</i>	Giant hogweed	2018	Research	2	2 in 2018, 1 in 2020	0.05 Kg of seeds, 30 specimens	0.05 Kg of seeds, 30 specimens in 2018, 0.05 Kg of seeds, 30 specimens in 2020
<i>Hydrocotyle ranunculoides</i>	Floating pennywort	2016, 2017, 2019 and 2020	Research	1 in 2016, 1 in 2017, 1 in 2019, 1 in 2020	1 in 2016, 2 in 2017, 3 in 2019, 3 in 2020	1000 kg of specimen in 2016, 400 specimens, 42 specimens in 2017. 12 specimens in 2019. 3x 5l boxes of specimens' maximum in 2020.	1000 kg of specimen in 2016, 1000 kg of specimen in 2017, 400 seeds in 2019, 400 seeds in 2020. 5l boxes of specimens' maximum in 2020.

Scientific name	Common Name	Year	Purpose of permit	No. of permits issued	No. of permits valid	Permitted Specimens-Permits issued	Permitted Specimens-Permits valid
<i>Impatiens glandulifera</i>	Himalayan balsam	2017, 2018, 2019 and 2020	Research	2 in 2017, 2 in 2018, 1 in 2019, 2 in 2020	2 in 2017, 4 in 2018, 4 in 2019, 6 in 2020	2300 specimens in 2017, 0.05kg of specimens and 30 specimens in 2018, 2 specimens in 2019, 5030 specimens in 2020	2300 specimens in 2017, 0.05kg of specimens and 30 specimens in 2018, 2 specimens in 2019, 5030 specimens in 2020
<i>Lagarosiphon major</i>	Curly Waterweed	2019	Research	1	1	12 samples each 200 grams	12 samples each 200 grams
<i>Ludwigia grandiflora</i>	Water-primrose	2017, 2018 and 2020	Research	2 in 2017, 1 in 2018, 1 in 2020	2 in 2017, 3 in 2018, 3 in 2020	15 specimens in 2017, 2000 specimens in 2018 (1000 Kg in total), 2000 specimens in 2020 (1000 Kg in total)	15 specimens in 2017, 2000 specimens in 2018, 4 specimens in 2020
<i>Ludwigia peploides</i>	Floating primrose-willow	2018 and 2020	Research	1 in 2018, 1 in 2020	1 in 2018, 2 in 2020	2000 specimens in 2018, 2000 specimens in 2020	2000 specimens in 2018, 4 specimens in 2020
<i>Muntiacus reevesi</i>	Reeves's muntjac	2019	Research	2	2	6 specimens	6 specimens
<i>Muntiacus reevesi</i>	Reeves's muntjac	2020	Ex- situ conservation	2	2	8 specimens	8 specimens
<i>Myriophyllum aquaticum</i>	Parrot's feather	2017	Research	1	1	10 specimens	10 specimens
<i>Nasua Nasua</i>	South American Coati	2020	Ex- situ conservation	10	10	32 specimens	32 specimens
<i>Nyctereutes procyonoides</i>	Raccoon dogs	2020	Ex- situ conservation	2	2	7 specimens	7 specimens
<i>Pacifastacus leniusculus</i>	American signal crayfish	2020	Research	2	2	110 specimens	110 specimens

Scientific name	Common Name	Year	Purpose of permit	No. of permits issued	No. of permits valid	Permitted Specimens-Permits issued	Permitted Specimens-Permits valid per year
<i>Procambarus clarkii</i>	Red Swamp Crayfish	2020	Research	1	1	50 specimens	50 specimens
<i>Procyon lotor</i>	Raccoon	2020	Ex- situ conservation	10	10	35 specimens	35 specimens
<i>Sciurus carolinensis</i>	Grey Squirrel	2020	Research	1	1	300 specimens	300 specimens
<i>Sciurus carolinensis</i>	Grey Squirrel	2020	Ex- situ conservation	1	1	1 specimen	1 specimen
<i>Threskiornis aethiopicus</i>	Sacred Ibis	2020	Research	1	1	3 specimens	3 specimens
<i>Threskiornis aethiopicus</i>	Sacred Ibis	2020	Ex- situ conservation	3	3	15 specimens	15 specimens
<i>Trachemys scripta</i>	Red-eared, yellow-bellied and Cumberland sliders	2018 and 2020	Research	1 in 2018, 1 in 2020	1 in 2018, 1 in 2020	100 specimens in 2018, 3 specimens in 2020	100 specimens in 2018, 3 specimens in 2020
<i>Trachemys scripta</i>	Red-eared, yellow-bellied and Cumberland sliders	2020	Ex- situ conservation	7	7	98 specimens	98 specimens
<i>Vespa velutina nigrithorax</i>	Asian hornet	2016, 2017 and 2018	Research	1 in 2016, 1 in 2017, 1 in 2018	1 in 2016, 2 in 2017, 3 in 2018, 2 in 2019, 0 in 2020	1000 in 2016, 1000 in 2017, 1000 in 2018	1000 in 2016, 2000 in 2017, 3000 in 2018, 2000 in 2019, 0 in 2020

Permits issued in Wales

Scientific name	Common Name	Year	Purpose of permit	No. of permits issued	No. of permits valid-in year	Permitted Specimens-Permits issued	Permitted Specimens-Permits valid per year
<i>Eichhornia crassipes</i>	Water hyacinth	2020	Research	1	1	25 specimens	25 specimens

Permits issued in Scotland

Scientific name	Common Name	Year	Purpose of permit	No. of permits issued	No. of permits valid	Permitted Specimens-Permits issued	Permitted Specimens-Permits valid
<i>Pacifastacus leniusculus</i>	American signal crayfish	2019	Research	1	1	200 specimens (20 kg in total)	200 specimens (20 kg in total)

Section 3. Species subject to rapid eradication measures during the reporting period

Scientific name	Common name	Population	Starting date	End date	Part of the territory	Method(s) used
<i>Nasua nasua</i> <i>Linnaeus</i>	Coati	Population #1	26/11/2018	31/12/2018	North east (England)	Mechanical/physical
<i>Nyctereutes procyonoides</i>	Raccoon Dog	Population #1	07/07/2020	07/07/2020	Wales	Trapping
<i>Vespa velutina nigrithorax</i> <i>Note that this table records incursions not individual nests; multiple nests may have been destroyed in each of these incursions.</i>	Asian hornet	Population #1	20/09/2016	20/10/2016	South West (England)	Chemical
		Population #2	26/09/2017	26/10/2017	South West (England)	Chemical
		Population #3	03/09/2018	03/10/2018	South West (England), South East (England)	Chemical
		Population #4	16/07/2019	16/08/2019	South East (England)	Chemical
		Population #5	02/09/2019	02/10/2019	West Midlands (England)	Chemical
<i>Hydrocotyle ranunculoides</i>	Floating Pennywort	Population #1	18/04/2016	31/10/2019	North East (Scotland)	Mechanical/physical

Section 4. Species subject to management measures during the reporting period

Scientific name	Common name	Starting date	End date	Objective of the measure(s)	Part of the territory	Method(s) used
<i>Alopochen aegyptiacus</i>	Egyptian goose	01/01/2015	31/12/2020	Control	East Of England	Mechanica / physical
<i>Elodea nuttallii</i>	Nuttall's waterweed	01/01/2015	31/12/2020	Containment	Great Britain	Mechanica / physical
<i>Eriocheir sinensis</i>	Chinese mitten crab	01/01/2015	31/12/2020	Containment	North East (England), North West (England), Yorkshire And The Humber, East Midlands (England), West Midlands (England), East Of England, London, South East (England), South West (England), Wales	Mechanica / physical
<i>Gunnera tinctoria</i>	Chilean rhubarb	01/01/2015	31/12/2020	Containment	Great Britain	Mechanica / physical, Chemical
<i>Heracleum mantegazzianum</i>	Giant hogweed	01/01/2015	31/12/2020	Control	Great Britain	Chemical, Mechanica / physical
<i>Hydrocotyle ranunculoides</i>	Floating pennywort	01/01/2015	31/12/2020	Control	North East (England), North West (England), Yorkshire And The Humber, East Midlands (England), West Midlands (England), East Of England, London, South East (England),	Mechanica / physical, Chemical

Scientific name	Common name	Starting date	End date	Objective of the measure(s)	Part of the territory	Method(s) used
					South West (England), Wales, Northern Ireland	
<i>Impatiens glandulifera</i>	Himalayan balsam	01/01/2015	31/12/2020	Control	Great Britain	Mechanica / physical, Biological, Chemical
<i>Lagarosiphon major</i>	Curly waterweed	01/01/2015	31/12/2020	Containment	Great Britain	Mechanica / physical
<i>Lysichiton americanus</i>	American skunk cabbage	01/01/2015	31/12/2020	Control	Great Britain	Mechanica / physical, Chemical
<i>Muntiacus reevesi</i>	Muntjac deer	01/01/2015	31/12/2020	Control	North East (England), North West (England), Yorkshire And the Humber, East Midlands (England), West Midlands (England), East Of England, London, South East (England), South West (England), Wales	Mechanica / physical
<i>Oxyura jamaicensis</i>	Ruddy duck	01/01/2015	31/12/2020	Eradication	North East (England), Yorkshire And the Humber, East Midlands (England), West Midlands (England),	Mechanica / physical

Scientific name	Common name	Starting date	End date	Objective of the measure(s)	Part of the territory	Method(s) used
					East of England, London, South East (England), South West (England), North West (England)	
<i>Pacifastacus leniusculus</i>	Signal crayfish	01/01/2015	31/12/2020	Containment	North East (England), North West (England), Yorkshire And the Humber, East Midlands (England), West Midlands (England), East Of England, London, South East (England), South West (England), Wales, Scotland	Mechanica / physical, Chemical
<i>Sciurus carolinensis</i>	Grey squirrel	01/01/2015	31/12/2020	Control	Great Britain	Mechanica / physical
<i>Trachemys scripta</i>	Red-eared, yellow-bellied and Cumberland sliders	01/01/2015	31/12/2020	Control	Great Britain	Mechanica / physical
<i>Myriophyllum aquaticum</i>	Parrot's feather	01/01/2015	31/12/2020	Containment	Great Britain	Mechanica / physical
<i>Arthurdendyus triangulatus</i>	New Zealand flatworm	01/01/2015	31/12/2020	Containment	Great Britain	Mechanica / physical
<i>Lepomis gibbosus</i>	Pumpkinseed	01/01/2015	31/12/2020	Containment	England	Mechanica / physical
<i>Ailanthus altissima</i>	Tree of heaven	01/01/2015	31/12/2020	Containment	England	Mechanica / physical

Section 5. Priority pathway codes (and species covered by each pathway)

Priority pathways addressed	Species covered
4.9 Transport - stowaway - Ship/boat hull fouling	<i>Hydrocotyle ranunculoides</i> L. f.
2.9 Escape from confinement - Ornamental purpose other than horticulture	<i>Ailanthus altissima</i>
	<i>Baccharis halimifolia</i> L.
	<i>Cabomba caroliniana</i> Gray
	<i>Eichhornia crassipes</i> (Martius) Solms
	<i>Elodea nuttallii</i> (Planch.) St. John
	<i>Gunnera tinctoria</i> (Molina) Mirbel
	<i>Heracleum mantegazzianum</i> Sommier & Levier
	<i>Hydrocotyle ranunculoides</i> L. f.
	<i>Lagarosiphon major</i> (Ridley) Moss
	<i>Impatiens glandulifera</i> Royle
	<i>Ludwigia grandiflora</i> (Michx.) Greuter & Burdet
	<i>Ludwigia peploides</i> (Kunth) P.H. Raven
	<i>Lysichiton americanus</i> Hultén and St. John
	<i>Myriophyllum aquaticum</i> (Vell.) Verdc.
<i>Myriophyllum heterophyllum</i> Michaux	
3.6 Transport - contaminant - Contaminant on plants (except parasites, species transported by host/vector)	<i>Arthurdendyus triangulatus</i>
	<i>Alternanthera philoxeroides</i> (Mart.) Griseb.
	<i>Hydrocotyle ranunculoides</i> L. f.
	<i>Microstegium vimineum</i> (Trin.) A. Camus
	<i>Vespa velutina nigrithorax</i> de Buysson, 1905
4.8 Transport - stowaway - Ship/boat ballast water	<i>Eriocheir sinensis</i> H. Milne Edwards, 1854
2.3 Escape from confinement - Botanical garden/zoo/aquaria (excluding domestic aquaria)	<i>Myocastor coypus</i> Molina, 1782
	<i>Ondatra zibethicus</i> Linnaeus, 1766
	<i>Procyon lotor</i> Linnaeus, 1758
	<i>Threskiornis aethiopicus</i> Latham, 1790

Priority pathways addressed	Species covered
	<i>Trachemys scripta</i> Schoepff, 1792
	<i>Sciurus niger</i> Linnaeus, 1758
	<i>Tamias sibiricus</i> Laxmann, 1769
	<i>Nasua nasua</i> Linnaeus, 1766
	<i>Herpestes javanicus</i> É. Geoffroy Saint-Hilaire, 1818
	<i>Callosciurus erythraeus</i> Pallas, 1779
4.1 Transport - stowaway - Angling/fishing equipment	<i>Hydrocotyle ranunculoides</i> L. f.

Section 6. Further details of measures taken to inform the public

Identification Information

We have developed ID guides for 69 species (see Appendix B), including 23 of the INNS of special concern listed below:

1. American Skunk-cabbage (*Lysichiton americanus*)
2. Asian Hornet (*Vespa velutina*)
3. Bull Frog (*Lithobates catesbeianus*)
4. Carolina Watershield (*Cabomba caroliniana*)
5. Chinese Mitten Crab (*Eriocheir sinensis*)
6. Coatimundi (*Nasua nasua*)
7. Curly Waterweed (*Lagarosiphon major*)
8. Egyptian Goose (*Alopochen aegyptiacus*)
9. Floating Pennywort (*Hydrocotyle ranunculoides*)
10. Giant Hogweed (*Heracleum mantegazzianum*)
11. Giant Rhubarbs (*Gunnera species*)
12. Indian House Crow (*Corvus splendens*)
13. Muntjac Deer (*Muntiacus reevesi*)
14. New Zealand flatworm (*Arthurdendyus triangulatus*)
15. Nuttall's Waterweed (*Elodea nuttallii*)
16. Parrot's Feather (*Myriophyllum aquaticum*)
17. Red-eared Terrapin (*Trachemys scripta elegans*)
18. Ruddy Duck (*Oxyura jamaicensis*)
19. Sacred Ibis (*Threskiornis aethiopicus*)
20. Salvinia moss (*Salvinia molesta*)
21. Siberian Chipmunk (*Tamias sibiricus*)
22. Signal Crayfish (*Pacifastacus leniusculus*)
23. Water Primrose (*Ludwigia grandiflora*)

These are available to download from the NNSS website (<http://www.nonnativespecies.org/index.cfm?sectionid=47>) and provided free to stakeholders to assist citizens. They are used by a wide range of citizens. Since 2015 approximately 7,000 hard copy ID sheets have been disseminated.

The following INNS of special concern have been featured in awareness raising materials and citizens asked to report sightings and follow good biosecurity practice to prevent their spread:

- *Eriocheir sinensis*
- *Heracleum mantegazzianum*
- *Hydrocotyle ranunculoides*
- *Impatiens glandulifera*
- *Ludwigia* spp.

- *Lysichiton americanus*
- *Lithobates catesbeianus*
- *Muntingia calabura*
- *Myriophyllum heterophyllum*
- *Pacifastacus leniusculus*
- *Procyon lotor*
- *Sciurus carolinensis*
- *Trachemys scripta*
- *Vespa velutina*

Invasive Species week: previous engagement:

- 2015: number of organisations involved unknown, 0 events held (campaign was focused on social media).
- 2016: 160 organisations involved and 21 events held
- 2017: 340 organisations involved and 50 events held
- 2018: over 310 organisations involved (note this is likely to be an underestimate) and 90 events held.
- 2019: over 320 organisations involved (note this is likely to be an underestimate) and 93 events held.

Invasive Species Week 2020 was cancelled due to COVID-19 .

E-learning modules

The current e-learning modules include:

- Module 1. Introduction to Invasive Non-native Species
- Module 2a Introduction to Identification and Recording
- Module 2b Identification of invasive freshwater plants
- Module 2c Identification of invasive freshwater invertebrates
- Module 2d Identification of invasive riparian plants
- Module 3a. Biosecurity
- Module 3b Biosecurity for the Overseas Territories
- Module 3c: Biosecurity Inspections for the Overseas Territories

Appendix A: Alert materials (note, INNS of special concern are marked *)

ID sheets and alert posters

American Lobster (*Homarus americanus*)

ID sheet:

<https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=1177>

*Asian hornet, *Vespa velutina*

<https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=872>

*Bull Frog (*Lithobates catesbeianus*)

ID sheet:

<https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=80>

*Carolina Watershield (*Cabomba caroliniana*)

ID sheet:

<https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=354>

Monk Parakeet (*Myiopsitta monachus*)

ID sheet:

<https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=65>

*Ruddy Duck (*Oxyura jamaicensis*)

ID sheet:

<https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=67>

*Sacred Ibis (*Threskiornis aethiopicus*)

ID sheet:

<https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=77>

*Siberian Chipmunk (*Tamias sibiricus*)

ID sheet:

<https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=76>

*Water primrose, *Ludwigia grandiflora*

Alert poster:

<https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=87>

[ID sheet:](#)

<https://secure.fera.defra.gov.uk/nonnativespecies/downloadDocument.cfm?id=861>

Appendix B: ID sheets (note, INNS of special concern are marked *)

ID sheets (available at: <http://www.nonnativespecies.org/index.cfm?sectionid=47>)

African Clawed-toad (*Xenopus laevis*)

Alpine Newt (*Mesotriton alpestris*)

American Mink (*Mustela vison*)

American Lobster (*Homarus americanus*)

*American Skunk-cabbage (*Lysichiton americanus*)

*Asian Hornet (*Vespa velutina*)

Asian Shore Crab (*Hemigrapsus sanguineus*)

Australian Flatworm (*Australoplana sanguinea*)

Bar-headed Goose (*Anser indicus*)

Black Swan (*Cygnus atratus*)

Brush Clawed Crab (*Hemigrapsus takanoi*)
*Bull Frog (*Lithobates catesbeianus*)
Canada Goose (*Branta canadensis*)
Canadian Goldenrod (*Solidago canadensis*)
Canadian Waterweed (*Elodea canadensis*)
*Carolina Watershield (*Cabomba caroliniana*)
Carpet Sea Squirt (*Didemnum vexillum*)
*Chinese Mitten Crab (*Eriocheir sinensis*)
Chinese Water Deer (*Hydropotes inermis*)
*Coatimundi (*Nasua nasua*)
Cotoneaster (*Cotoneaster* species)
*Curly Waterweed (*Lagarosiphon major*)
Edible Dormouse (*Glis glis*)
*Egyptian Goose (*Alopochen aegyptiacus*)
Emperor Goose (*Chen canagicus*)
Eurasian Eagle Owl (*Bubo bubo*)
Evergreen Oak (*Quercus ilex*)
False Acacia (*Robinia pseudoacacia*)
*Floating Pennywort (*Hydrocotyle ranunculoides*)
Garlics (*Allium* species)
*Giant Hogweed (*Heracleum mantegazzianum*)
*Giant Rhubarbs (*Gunnera* species)
*Giant Salvinia (*Salvinia molesta*)
*Himalayan Balsam (*Impatiens glandulifera*)
Hottentot Fig (*Carpobrotus edulis*)
*Indian House Crow (*Corvus splendens*)
Japanese Rose (*Rosa rugosa*)
Killer Shrimp (*Dikerogammarus villosus*)
Kontikia Flatworms (*Kontikia ventrolineata* and *andersoni*)
Leathery Sea Squirt (*Styela clava*)

Marsh Frog (*Pelophylax ridibundus*)
Midwife Toad (*Alytes obstetricans*)
Monk Parakeet (*Myiopsitta monachus*)
Montbretia (*Crocasmia x crocosmiiflora*)
*Muntjac Deer (*Muntiacus reevesi*)
*New Zealand Flatworm (*Arthurdendyus triangulatus*)
New Zealand Pigmyweed (*Crassula helmsii*)
*Nuttall's Waterweed (*Elodea nuttallii*)
Orange Sheath Tunicate (*Botrylloides violaceus*)
*Parrot's Feather (*Myriophyllum aquaticum*)
*Red-eared Terrapin (*Trachemys scripta elegans*)
Rhododendron (*Rhododendron ponticum*)
Rose-ringed Parakeet (*Psittacula krameri*)
*Ruddy Duck (*Oxyura jamaicensis*)
Russian-vine (*Fallopia baldschuanica*)
*Sacred Ibis (*Threskiornis aethiopicus*)
*Siberian Chipmunk (*Tamias sibiricus*)
*Signal Crayfish (*Pacifastacus leniusculus*)
Sika Deer (*Cervus nippon*)
Slipper Limpet (*Crepidula fornicata*)
Turkey Oak (*Quercus cerris*)
Wakame (*Undaria pinnatifida*)
Water Fern (*Azolla filiculoides*)
Water Lettuce (*Pistia stratiotes*)
*Water Primrose (*Ludwigia grandiflora*)
Western Green Lizard (*Lacerta bilineata*)
Wireweed (*Sargassum muticum*)
Wood Duck (*Aix sponsa*)
Zebra Mussel (*Dreissena polymorpha*)

Section 7. Information on the cost of action undertaken to comply with this regulation

Collated costs for the implementation of the EU regulation (now retained EU Regulation) across GB are not available; however, they are likely to be significant. Examples of indicative costs of measures covering species of special concern and wider INNS, where available, for aspects of the implementation are provided below.

Prevention:

- Preventative measures taken in GB have focussed on raising awareness and working with stakeholders to promote better biosecurity on priority pathways (e.g. hull fouling, angling and horticultural escapes). Since the start of the reporting period, government has spent at least £240k on these actions; with additional resources provided by industry (c. £250k), the EU Life project 'reducing and preventing invasive species dispersal (RAPID)' (c. £50k) and in-kind contributions from a wide range of stakeholders (e.g. Royal Yachting Association, Angling Trust, British Canoeing, etc). These are just examples and do not take into account additional costs which are unavailable, such as staff time (both government and non-government) associated with developing Pathway Action Plans, strategic media and communications plans and a wide range of associated materials, events and activities.
- In Wales, the Welsh Government has funded (Phase 1 £49k, Phase 2 £500k) a project called the Wales Resilient Ecological Network (WaREN) which aims to deliver a collaborative pan Wales framework to support a more joined up and sustainable approach for the management of INNS and to more effectively address the risks to ecosystem resilience. Phase 1 of the project (development) undertook the baseline assessment of INNS impacts and distribution in Wales, identified key stakeholders and scoped a variety of toolkits and action recording tools. Phase 2 of the WaREN project (from April 2021) will build on phase 1 to expand and build on the collaborative network, facilitate the formation of a sustainable network of Local Action Groups (LAGs), produce and communicate project tools to support collaborative effective INNS actions including toolkits, training programme, surgeries, knowledge sharing forum and funding opportunities and enable preventative measures to reduce the number of INNS becoming established in Wales, by developing an INNS Prevention and Biosecurity strategy for Wales.

Early detection

- The main mechanism for delivering early detection in GB is the Non-native Species Information Portal, which has received a total of £558k since the start of the reporting period. Additional costs, for example the costs of recording in

the field, the maintenance of recording schemes and societies, the maintenance of the Asian hornet sentinel apiary network and other aspects of relevant biological recording systems are not available.

Eradication

- Example costs for the eradication of coati (c. £8k) and Asian hornet in 2018 (c. £36.5k)¹⁰ are available. This does not reflect the cost of developing and maintain the capacity to deliver specialist eradication responses.

Management measures

- Figures for the considerable sums spent managing widespread invasive non-native species of special concern across GB are not collated. Examples of cost since the start of the reporting period include the management of ruddy duck (c. £220k) and control of floating pennywort (c. £1.95M).
- In Scotland, the total expenditure (government and other) on management of species of special concern during the reporting period was approx. £6.5 million (Table 1).
- Defra has contributed a total of £244,000 for work by the Animal and Plant Health Agency for the development of a fertility control method for grey squirrels. Further research is needed; however, the results continue to show promise as one potentially effective and humane method to control grey squirrel numbers in the longer term.
- A considerable amount of research is required to support long-term management. Example costs for this since the start of the reporting period include research into Egyptian goose management (c. £125k) and the development of biocontrol agents for Himalayan balsam and floating pennywort (c. £450k over the reporting period).

¹⁰ The cost provided for Asian hornet is the total of additional costs incurred in 2018 not covered by existing resources used during the response. The Asian hornet eradication work has to date been dealt with under existing resources with bee health inspectors reprioritised from dealing with other pests and diseases. 2018 saw our biggest contingency response with four nests being discovered. The costs total £36.5k which paid for additional elements of our contingency responding such as physical and molecular analysis of the nests, additional surveillance work including the use of an unmanned aerial vehicle, and tree surgeons.

Table 1. Total spend on management of species of special concern in Scotland during reporting period January 2015 to December 2020.

Scientific name	Common name	Government spend (£)	Other spend † (£)	Total spend (£)
<i>Sciurus carolinensis</i>	Grey Squirrel	412,000	4,135,000	4,547,000
<i>Heracleum mantegazzianum</i>	Giant hogweed	625,000	1,329,000	1,954,000
<i>Impatiens glandulifera</i>	Himalayan balsam			
<i>Lysichiton americanus</i>	American skunk cabbage			
<i>Fallopia japonica</i>	Japanese knotweed*			
<i>Neovison vison</i>	American mink*			
<i>Gunnera tinctoria</i>	Chilean rhubarb	5,750	8,250	14,000

* Other species controlled under the same projects. It is not possible to disaggregate spend on individual species.

† National Lottery Heritage Fund was a major contributor to projects in Scotland. Includes financial and in-kind contributions from NGOs, local authorities, fisheries trusts, landowners and volunteers.