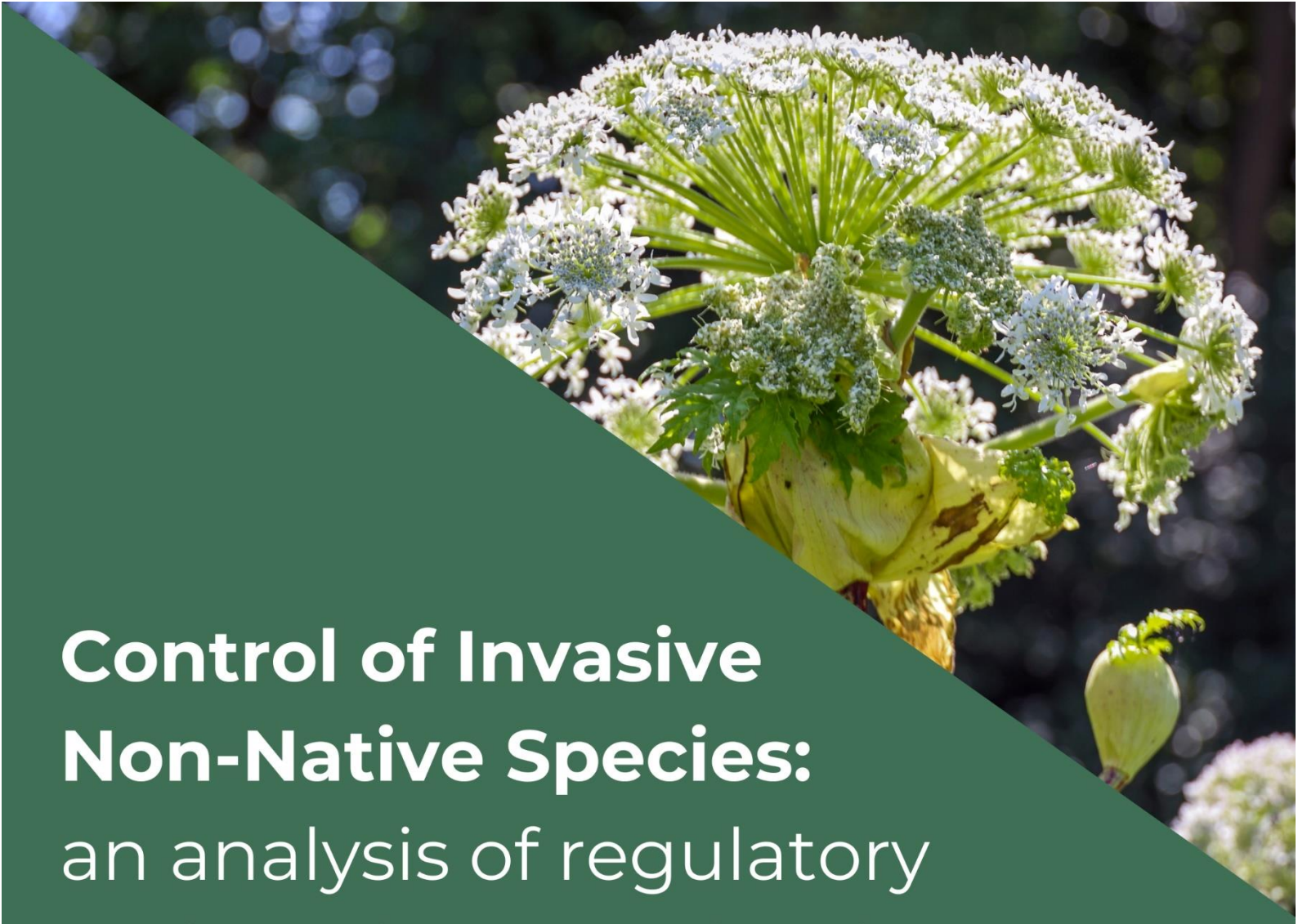

Control of Invasive Non-Native Species: an analysis of regulatory tools and approaches in Scotland

June 2026

ENVIRONMENTAL Standards Scotland
Ìrean Àrainneachdail na h-Alba

Contents

Glossary

AECS - Agri-Environment Climate Scheme

CBD - Convention on Biological Diversity

CPN - Community Protection Notices

EASR – Environmental Authorisations (Scotland) Regulations

ESS – Environmental Standards Scotland

FGS – Forestry Grant Scheme

GBF – Global Biodiversity Framework

IAS – Invasive Alien Species

INNS – Invasive Non-Native Species

IPBES - The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

SCA – Species Control Agreement

SCO – Species Control Order

SEPA – Scottish Environment Protection Agency

SSSIs - Sites of Special Scientific Interest

The 1981 Act – Wildlife and Countryside Act 1981 (as amended)

The 2011 Act – Wildlife and Natural Environment (Scotland) Act 2011

1. Key findings and recommendations

Key finding 1: The current regulatory framework governing invasive non-native species control is not consistently understood or applied in practice and is therefore not fully effective. Uncertainty regarding evidential thresholds, procedural requirements and the sequencing of statutory powers, together with limited clarity in supporting guidance, is likely to reduce how readily species control provisions are used in practice.

The management of invasive non-native species (INNS) in Scotland relies primarily on voluntary cooperation and partnership-based delivery. In many cases, this operates effectively, with regulators reporting high levels of landowner engagement.

However, where voluntary cooperation cannot be secured, the effectiveness of the regulatory framework depends not only on the existence of statutory powers but also on how easily and effectively those powers can be applied.

ESS concludes that, while the statutory framework broadly reflects its original policy intent, uncertainty regarding how species control provisions should be interpreted and applied in practice affects how readily they are used.

In particular, uncertainty exists regarding evidential thresholds, the relationship between powers of entry and evidence gathering, and the sequencing and use of Species Control Agreements (SCAs), Species Control Orders (SCOs) and emergency SCOs. While the legislation provides a framework for intervention, these elements are not clearly articulated in legislation or supporting guidance.

Taken together, this evidence indicates that challenges arise not only from the structure of the legislation, but from uncertainty in how its provisions are interpreted, communicated and applied in practice.

Recommendation 1: The Scottish Government should update the existing policy and regulatory framework and associated guidance governing invasive non-native species control to ensure that the operation of species control provisions is clear, consistently understood and capable of being applied effectively in practice.

This should, at a minimum, provide clear operational guidance on evidential thresholds, the use of powers of entry and the sequencing of statutory tools, including when more rapid intervention is appropriate, and support consistent interpretation and application across regulators.

Key finding 2: The current regulatory framework does not provide a sufficiently flexible or comprehensive range of tools to support proportionate and effective intervention, particularly at landscape-scale, and is therefore not fully effective.

Voluntary approaches are central to INNS management in Scotland, but their effectiveness depends on the availability of proportionate escalation mechanisms where cooperation cannot be secured.

ESS concludes that the current framework provides limited intermediate enforcement options between voluntary cooperation and statutory species control powers. Evidence from England suggests that additional tools, such as civil sanctions, can support more flexible and proportionate responses.

The existing framework is also poorly suited to large-scale and coordinated control programmes, particularly for highly mobile species. Many INNS control initiatives operate across multiple landholdings and require consistent participation to be successful. In these contexts, the premises-based structure of the legislation and associated procedural requirements may introduce administrative complexity and delay.

ESS has also identified differences in the investigative and operational powers available to inspectors in Scotland compared to other parts of Great Britain, which may affect the ability to respond effectively in situations involving rapid spread or biosecurity risk.

Taken together, this indicates that effectiveness depends not only on the existence of powers, but on whether the framework enables intervention at the appropriate scale and in a proportionate way.

Recommendation 2: The Scottish Government should bring forward proposals to strengthen and expand the range of regulatory tools available for invasive non-native species management, ensuring that regulators are equipped to intervene effectively, proportionately and at the appropriate scale.

This should, at a minimum, introduce more proportionate and graduated enforcement mechanisms, address limitations in supporting landscape-scale intervention across multiple landholdings, and strengthen the investigative and operational powers available to inspectors.

Key finding 3: Information on invasive non-native species control activity is fragmented and not consistently reported at a national level, limiting transparency and the ability to assess effectiveness of control measures.

A significant proportion of INNS management in Scotland is delivered through voluntary and partnership-based programmes. While monitoring is undertaken at project level, approaches vary and are not consistently reported.

As a result, information on the overall extent, coverage and effectiveness of INNS management is fragmented. This limits the ability to develop a clear national picture of activity and outcomes.

Recent policy developments recognise this issue, including commitments to improve data and reporting. However, a consistent and accessible system is not yet fully in place.

Improving monitoring, reporting and transparency would support greater oversight and understanding of how INNS management contributes to Scotland's biodiversity objectives.

Recommendation 3: The Scottish Government should ensure that data and supporting information on invasive non-native species management is collected consistently and made publicly accessible in an appropriate and usable format, to provide a clear national picture of activity and outcomes. This should include both statutory and voluntary control activity, and should set out more clearly how this activity contributes to Scotland's biodiversity objectives and INNS targets.

This should, at a minimum, ensure that all relevant data on INNS management is collected and reported consistently, made publicly accessible, to enable progress against Scotland's strategic policy framework for biodiversity and INNS (including the Scottish Biodiversity Strategy and the Scottish Action Plan for Invasive Species) to be monitored and assessed.

As a public authority, the Scottish Government has duties under Section 23 of the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021 to make all reasonable efforts to:

- swiftly resolve any matter which Environmental Standards Scotland (ESS) raises concerning the authority's failure to comply with environmental law, to make effective environmental law or to implement or apply it effectively

- reach agreement with ESS on any remedial action the authority should take for the purpose of environmental protection

In line with these duties, ESS requests the Scottish Government to reach agreement for a plan of remedial action, which will be used to track progress against delivering recommendations 1 to 3 in this report.

Recommendation 4: The Scottish Government must agree a plan of remedial actions, with a clear timeline for delivery, to resolve the issues highlighted in this report and implement ESS' recommendations. This should be agreed with ESS as soon as possible and no later than six months from the date of publication.

This should include defined milestones, responsibilities and mechanisms for monitoring progress.

2. About this report

2.1 Environmental Standards Scotland's (ESS) strategic plan 2022 – 2025 identified several analytical priorities relating to the effectiveness of environmental law in Scotland. One aspect of this work relates to the control and impact of invasive non-native species in Scotland.

2.2 Invasive non-native species (INNS) are widely recognised as a significant driver of biodiversity loss globally and within Scotland.[1] In Scotland, the policy focus on INNS has increased over time. The Scottish Biodiversity Strategy to 2045 identifies INNS as a key pressure on biodiversity and emphasises the need for effective mechanisms to prevent their introduction and spread and to control established populations.[2]

2.3 In Scotland, there are a range of INNS that are of local or widespread concern. The following are three examples of a plant species, an invertebrate and a mammal. Japanese knotweed (*Reynoutria japonica*) is widespread, forming dense clumps that outcompete native species and can exacerbate erosion to riverbanks and is costly to manage in urban environments.[3] Signal crayfish (*Pacifastacus leniusculus*) has a more limited distribution in Scotland currently but cause significant impacts on native flora and fauna through increased grazing and predation.[4] American mink (*Neogale vison*) are highly efficient predators which have caused devastating reductions on water vole populations and threatening the breeding success of ground-nesting seabirds and wildfowl.[5]

2.4 ESS' functions are defined in section 20 of the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021 ("the 2021 Act"). These include monitoring and taking action to improve the effectiveness of environmental law and its implementation. This report is produced in accordance with those functions.

2.5 This report examines the effectiveness of the legislative and regulatory framework governing the control of INNS in Scotland. It considers how the statutory tools available to regulators operate in practice and whether the framework remains fit for purpose in supporting current biodiversity objectives.

2.6 The work in this report initially focused on Species Control Agreements (SCAs) and Species Control Orders (SCOs), introduced by the Wildlife and Natural Environment (Scotland) Act 2011.

2.7 However, ESS' analysis indicated that these powers operate within a wider system of INNS management, including voluntary approaches, alternative enforcement tools and investigative powers. This report therefore examines the effectiveness of the broader regulatory framework.

2.8 This report focuses on the effectiveness of the legislative and regulatory framework governing INNS within Scotland. Evidence from England and Wales is referenced for contextual and comparative purposes only. The overarching legislation, the Wildlife and Countryside Act 1981, applies across Great Britain but not in Northern Ireland. Scotland, and England and Wales have different versions of this INNS legislation, whereas Northern Ireland operates under a separate legislative framework for INNS.

2.9 The analysis builds on a public call for evidence undertaken by ESS in 2024, which identified issues relating to the implementation of existing legislation and the operation of statutory control powers. These issues were explored further through engagement with regulators and stakeholders, supported by additional analytical work. In addition, some stakeholders raised concerns on the impacts of specific species as well as which species are designated as INNS or are provided specific exemptions. These issues are beyond the scope of this report.

2.10 Nothing in this report, or the recommendations made within it, prejudices ESS' ability to undertake further scrutiny of the issues considered here or other issues relative to invasive non-native species.

2.11 The findings and recommendations are based on the following sources of evidence:

- responses to ESS' call for evidence
- information provided by relevant public authorities under section 23 of the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021
- stakeholder engagement with regulatory bodies and environmental organisations
- review of the relevant legislative and policy framework
- comparative insights from England and Wales
- legal advice on the interpretation and operation of species control powers

2.12 ESS asks the Scottish Government to reach agreement with it for a plan of remedial actions, with a clear timeline for delivery, to resolve the issues highlighted in this report and implement ESS' recommendations. This plan of remedial action should be agreed with ESS as soon as possible and no later than six months from the date of publication, in line with their duties under section 23 of the 2021 Act as a public authority.

3. Introduction

The growing challenge posed by INNS

3.1 Invasive Non-Native Species are widely recognised as a significant driver of biodiversity loss globally and represent a growing environmental challenge in Scotland.[1],[2] The Great Britain Invasive Non-Native Species Strategy defines invasive non-native species (INNS), also referred to as invasive alien species (IAS), as species that have been introduced, either deliberately or accidentally, outside their natural range and which have the potential to cause harm to the environment, the economy, human health or the way we live.[6] The terms INNS and IAS are used interchangeably in policy and scientific literature to describe the subset of non-native species that become invasive. This report uses the term INNS throughout.

3.2 While many non-native species coexist with native species without causing significant harm, a subset become invasive. These INNS can spread rapidly and cause significant ecological, economic and social impacts.[1] The Scottish Biodiversity Strategy reflects this and recognises INNS as a key pressure on biodiversity, highlighting their role in degrading habitats and undermining nature's contributions to people and a good quality of life.[2]

3.3 INNS are addressed across several layers of Scotland's environmental governance framework. The Scottish National Adaptation Plan 3 considers INNS in the context of nature networks and highlights how climate change, alongside changing land-use and sea-use, can increase opportunities for their establishment and spread. At the same time, some invasive species exacerbate the effects of climate change, for example by altering ecosystem processes in ways that reduce resilience.[7]

3.4 INNS are also identified as a risk area requiring further action in the UK Climate Change Risk Assessment 3, which highlights that climate change is expected to increase the establishment and spread of invasive species, exacerbating risks to terrestrial and freshwater ecosystems and biodiversity.[8]

3.5 In addition, the Scottish River Basin Management Plan 2021 – 2027 includes specific measures to prevent the introduction and spread of INNS within the water environment.[9] This reflects their significance for the ecological health of Scotland's rivers, lochs and coastal waters.

3.6 International assessments underline the scale of the issue. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has identified invasive species as one of the five major global drivers of biodiversity loss. INNS have contributed solely or alongside other drivers to 60% of recorded extinctions and are the only driver in 16% of the documented global animal and plant extinctions.[10],[11] INNS can cause ecological damage through a variety of mechanisms including competition with native species, predation, disease transmission and habitat modification.[1]

3.7 In the UK, recent estimates suggest that between 10 and 12 new non-native species become established each year, of which approximately 10 to 15% of established non-native species go on to cause significant adverse impacts [6]. Once established, INNS can be extremely difficult to eradicate, and management often requires sustained effort over many years. In some cases, species become so widely established and self-sustaining that eradication is no longer feasible in practice, either technically or economically, and management is therefore limited to long-term control and mitigation.[1]

3.8 Across the UK, the number of INNS has increased significantly over recent decades. This trend is illustrated in Figure 1. The UK Biodiversity Indicator B6 (pressure from invasive species) shows that the number of INNS established across freshwater, terrestrial and marine environments has risen steadily since 1969. Between 2020 and 2024, 14 freshwater, 30 marine and 64 in terrestrial invasive species were recorded as being established across at least 10% of Great Britain's land area or coastline.[12] Much of the available long-term monitoring data on INNS is collected and reported at a Great Britain or UK scale, and equivalent Scotland-specific time series are more limited.

3.9 At a Scottish level, NatureScot reported in 2021 that over 1,100 non-native species were established, of which around 16% were considered to have negative ecological impacts as INNS.[13] This illustrates that while only a minority of non-native species become invasive, those that do can exert disproportionate pressure on biodiversity and ecosystems.

3.10 This trend reflects wider global patterns driven by climate change, international trade, travel and the movement of goods, which provides greater opportunities for species to be transported outside their native ranges.[14] Climate change is also expected to influence the distribution and establishment of some invasive species, although its effects are complex and may vary across regions and taxa.[15]

3.11 This underpins a widely recognised staged approach to tackling INNS, often conceptualised as an “invasion curve”. International guidance emphasises prevention as the most effective and cost-effective measure, followed by early detection and rapid response. Where species become established, eradication may be feasible, particularly if undertaken early, while longer-term control and mitigation measures are required where eradication is no longer possible. This staged approach has implications for the design and effectiveness of regulatory tools, which must support both rapid intervention and sustained management where eradication is not feasible.[16]

3.12 Beyond ecological impacts, INNS impose substantial economic costs. A 2023 assessment estimated that invasive non-native species cost the UK economy approximately £4 billion per year, based on aggregated annual costs across the four nations, including £499 million annually in Scotland.[17]

3.13 Climate change is expected to interact with, and in some cases exacerbate, the challenges associated with INNS. The Climate Change Committee has highlighted that climate change is altering the condition of habitats and species in Scotland and that adaptation responses should explicitly address both climate-sensitive and invasive species.[18] This aligns with broader evidence indicating that climate change can increase the vulnerability of ecosystems to invasion.[11] However, these effects are not uniform across all species and environments. Some evidence suggests that for certain taxa, invasion dynamics may differ under climate change, and geographic barriers (such as those affecting island systems) may constrain future spread.[15]

3.14 Evidence indicates that additional non-native species are likely to arrive in Scotland in the coming years, although the scale and distribution of this risk is uncertain and varies by pathway, taxa and environmental conditions. A 2023 horizon-scanning study commissioned by the Scottish Government assessed 171 non-native species and produced a prioritised list of 30 species considered most likely to arrive, establish and have significant impacts on biodiversity and ecosystems in Scotland within the next decade.[19] These findings indicate that pressures from INNS are likely to persist, and may increase in some contexts, without effective preventative and management measures.

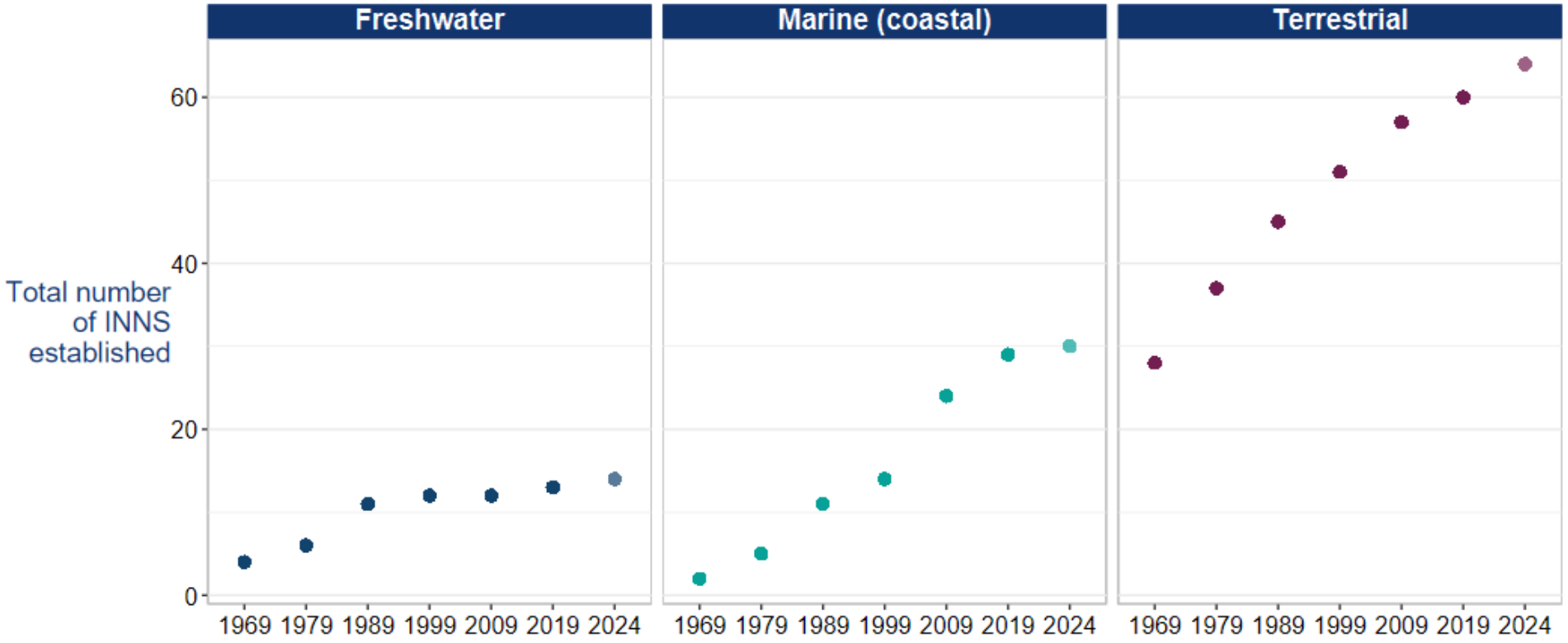

Figure 1: Cumulative net total number of invasive non-native species established across or along 10% or more of the land area or coastline of Great Britain, 1969 to 2024. Reproduced from Joint Nature Conservation Committee data, via UK Government Environmental Indicator Framework Theme H. Points show the cumulative count of INNS established by the end of that 10-year monitoring period, e.g. 1969 = the total number of INNS established by 1969. The latest data reported is 2024 so this point does not show the full 10-year period.

Policy ambitions and commitments

3.15 Recognising the risks posed by INNS, Scotland and the wider UK have committed to a range of international and domestic policy objectives aimed at reducing the introduction and spread of INNS and mitigating their impacts.

3.16 At the international level, the Convention on Biological Diversity (CBD) identifies 'invasive alien species' as a key threat to biodiversity, and has done since its inception in 1992. Under the Strategic Plan for Biodiversity 2011-2020, the Aichi Biodiversity Target 9 required that by 2020, "invasive alien species and pathways are identified and prioritised, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment".[20]

3.17 Global assessments have since concluded that most countries failed to meet Aichi Target 9. Within Scotland, NatureScot's 2021 assessment found that insufficient progress was made in controlling established INNS and managing pathways of introduction by 2020, indicating the need for more ambitious and better coordinated action.[13]

3.18 International ambition was strengthened in 2022 through the adoption of the Kunming-Montreal Global Biodiversity Framework (GBF). GBF Target 6 sets a clear quantitative ambition to reduce the rate of introduction and establishment of INNS by at least 50% by 2030, while minimising their impacts on biodiversity, ecosystem services and human wellbeing.[21]

3.19 These international commitments are reflected at the Great Britain level through the Great Britain Invasive Non-Native Species Strategy (2023-2030), jointly delivered by the Scottish Government, the UK Government and the Welsh Government. The Strategy provides a coordinated, cross-administration approach to prevention, early detection, rapid response and long-term management of INNS. A core objective is to reduce the rate at which INNS become established by at least 50% compared with 2000 levels, directly aligning British policy with the GBF's 2030 target [6].

3.20 At the national level, Scotland's policy frameworks place strong emphasis on tackling INNS. The Scottish Biodiversity Strategy to 2045, published in its updated form in 2024, is anchored in Scotland's wider ambition to be Nature Positive by 2030 and to achieve widespread biodiversity recovery by 2045. The Strategy identified INNS as one of the key direct pressures driving biodiversity loss in Scotland and includes a specific commitment to develop and implement a Scottish Plan for

Invasive Non-Native Species. The Strategy highlights the need for strengthened action to manage their impacts.[2]

3.21 In Scotland, INNS management has also been identified as a potential means of delivering biodiversity improvements alongside wider environmental and land management interventions. For example, invasive species control is recognised as a key mechanism for restoring habitats and delivering measurable biodiversity gains within conservation and restoration programmes.[11],[2]

3.22 Large-scale eradication and control programmes have already been undertaken in Scotland and elsewhere in the UK. These include landscape-scale efforts to control, and in some cases, eradicate invasive mammalian predators such as American mink from sensitive ecosystems.[22]

3.23 Island restoration programmes have demonstrated the potential ecological benefits of INNS eradication. Removing invasive predators from islands has led to significant recovery of seabird populations and other native wildlife.[23] For example, the eradication of black rats (*Rattus rattus)* from the Shiant Isles has been associated with early evidence of increased breeding success of seabird species including razorbill (*Alca torda*) and Atlantic puffin (*Fratercula arctica*) and recolonisation by European storm petrels *(Hydrobates pelagicus)*.[24]

3.24 Ongoing programmes, including the Orkney Native Wildlife Project targeting invasive stoats (*Mustela erminea*), aim to deliver comparable benefits for internationally important populations of ground nesting birds like puffins, oystercatchers *(Haematopus ostralegus)*, curlews *(Numenius arquata)*, and hen harriers *(Circus cyaneus)*, alongside the Orkney vole *(Microtus arvalis orcadensis)*.[25]

3.25 Recent eradication efforts elsewhere in the UK further illustrate the potential for successful intervention in appropriate contexts. For example, the eradication of feral ferrets from Rathlin island in Northern Ireland has been reported as successful, contributing to the protection of seabird populations.[26] While the scale and land ownership context of Rathlin differ from more complex programmes in Scotland, such as the Orkney Native Wildlife Project, this example demonstrates that eradication can be achieved where sufficient access, coordination and sustained efforts are secured.

3.26 INNS management also plays an important role in responding to emerging biosecurity threats. Stakeholders, including responsible bodies, have highlighted

potential challenges associated with contingency planning for the yellow-legged hornet (*Vespa velutina*), an INNS that poses risks to pollinators and native ecosystems. The contingency plan for this species aims to locate and destroy nests quickly to prevent establishment and spread, and delays in implementing control measures could undermine containment efforts. In this context, the importance of ensuring that available legal powers allow rapid intervention where new INNS are detected has been highlighted to ESS by responsible bodies.

4. Legislation and policy context

Legislative framework for invasive non-native species control in Scotland

4.1 The primary legislative framework governing INNS control in Scotland is set out in the Wildlife and Countryside Act 1981 (the 1981 Act), as amended by the Wildlife and Natural Environment (Scotland) Act 2011 (the 2011 Act). These provisions establish offences relating to the release and spread of non-native species and provide a range of powers intended to enable authorities to prevent the establishment and spread of INNS.

4.2 The 2011 Act introduced a strengthened regulatory framework for INNS in Scotland by amending Part 1 of the 1981 Act. In particular, the 2011 Act introduced provisions enabling public authorities to require action to control INNS where voluntary measures are insufficient. These provisions are set out primarily in sections 14D to 14P of the 1981 Act, which establish the statutory framework for SCAs and SCOs.

4.3 The 2011 Act also strengthened preventative provisions relating to the release of non-native species. These changes were introduced in response to increasing recognition of the ecological and economic impacts of INNS, and concerns that the existing framework under the 1981 Act did not adequately address the risks associated with the release and spread of species beyond their native range.

4.4 Section 14 of the 1981 Act made it an offence to release, or allow to escape, any animal that is not ordinarily resident in Great Britain, or to plant or otherwise cause to grow in the wild any plant listed in Schedule 9. The 2011 Act amended this to broaden the provision, by revoking Schedule 9 in Scotland and making it an offence to release any non-native species outside its native range. This preventative approach reflects a broader shift in policy towards reducing the risk of new introductions of INNS.

4.5 The 1981 Act also includes provisions relating to notification requirements for certain species, powers of entry for authorised persons, and offences relating to the keeping, sale and release of INNS.

4.6 The regulatory framework governing INNS in Scotland includes the Invasive Alien Species Regulation (Regulation (EU) No 1143/2014 on the prevention and management of the introduction and spread of invasive alien species) (the "Regulation"). This Regulation was originally adopted at EU level to establish a coordinated approach to preventing and managing INNS across Member States. Following the United Kingdom's withdrawal from the EU, the Regulation was retained in domestic law under the European Union (Withdrawal) Act 2018 and continues to apply as assimilated law across Great Britain, including Scotland.

4.7 The Regulation establishes a list of "invasive species of Union concern", which are species considered to pose significant risks to biodiversity or ecosystem services. For species included on this list, the Regulation imposes restrictions including prohibiting the keeping, breeding, transporting, selling, using, permitting to reproduce, growing, cultivating or releasing of such species. The Regulation also requires authorities to undertake surveillance of species of special concern, implement rapid eradication measures where new populations are detected, and adopt management measures for species that have become widely spread. In Scotland, the equivalent list is now known as the Scottish list of species of special concern.

4.8 The Regulation allows competent authorities to permit certain otherwise prohibited activities in limited circumstances, such as for scientific research or other activities carried out under strictly controlled conditions. These permits may include conditions designed to ensure appropriate containment and biosecurity measures are implemented to minimise the risk of further spread of INNS.

4.9 While the retained Regulation applies across Great Britain, the transposition differs between jurisdictions. In England and Wales, enforcement arrangements are established through the Invasive Alien Species (Enforcement and Permitting) Order 2019, which designates enforcement authorities and introduces additional enforcement tools, including civil sanctions. These are non-criminal enforcement tools, such as fines and compliance notices, used as an alternative to prosecution. Equivalent civil sanction provisions do not apply in Scotland where enforcement relies primarily on criminal offences and the species control provisions contained within the Wildlife and Countryside Act 1981 (as amended).

Species Control Agreements and Species Control Orders

4.10 The central regulatory tools for controlling INNS under the 1981 Act are SCAs and SCOs. These tools were established to play a key role within the wider

Box 1: Role, purpose and intent of SCAs and SCOs

Purpose and policy intent

- SCAs and SCOs were introduced through the Wildlife and Natural Environment (Scotland) Act 2011, which amended the 1981 Act, to provide a statutory mechanism for requiring action where voluntary cooperation alone is insufficient to manage invasive non-native species
- the powers were designed primarily as backstop tools

Situations the provisions were intended to address

- early detection and rapid response, where action is required to prevent a newly detected invasive species from becoming established
- landscape-scale control programmes, where refusal by a small number of landowners risks undermining the effectiveness of coordinated control efforts

Species Control Agreements (SCAs)

- SCAs are voluntary statutory agreements between a relevant authority and a landowner or occupier
- they set out specific actions to control or eradicate an invasive species, including measures such as removal, monitoring or biosecurity requirements. They are intended to:
    - formalise agreed action where cooperation exists
    - establish clear, time-bound responsibilities
    - enable monitoring of compliance
    - provide a clear pathway of escalation for instances of non-compliance with the agreement

Species Control Orders (SCOs)

- SCOs are compulsory measures that may be imposed where an SCA cannot be agreed or where there is non-compliance with an SCA
- an SCO requires specified control operations to be undertaken and may, in certain circumstances, allow the authority to undertake those operations itself and recover costs
- the legislation also provides for emergency SCOs, which may be made without first offering an SCA where urgent action is necessary

management framework by providing a mechanism to secure action where voluntary approaches are not sufficient. The role, purpose and intended use of SCAs and SCOs are summarised in Box 1.

4.11 SCAs set out the actions that will be taken to control or eradicate the species and may include measures such as removal, containment or monitoring.

4.12 Where a voluntary agreement cannot be reached, or has not been complied with, a relevant authority may impose an SCO, which requires the specified control operations to be undertaken (section 14D of the 1981 Act). If the landowner fails to comply with the order, the authority may undertake the required operations itself and recover the costs, where appropriate.

4.13 In addition, the 1981 Act provides for emergency Species Control Orders, which may be made without first offering an SCA where the relevant authority considers that urgent action is necessary to control the species. While the majority of invasive species management relies on cooperation and partnership-based delivery, effective control ultimately depends on the ability of authorities to ensure that necessary measures can be implemented consistently, as necessary.

4.14 The relevant Scottish authorities empowered to make SCAs and SCOs are Scottish Government's Marine Directorate, NatureScot, SEPA and Scottish Forestry. These authorities are responsible for exercising the powers within their respective areas of regulatory responsibility.

4.15 The distribution of responsibilities reflects the different environments in which INNS may occur. NatureScot is responsible for a wide range of biodiversity and wildlife management functions; they are the lead coordinating body for the INNS framework and are the lead body for invasive species on land. SEPA's responsibilities relate to the aquatic environment, including the management of INNS affecting rivers, lochs and other freshwater systems. Scottish Forestry is responsible for forestry regulation and therefore addresses INNS that affect woodland systems or forestry operations. The Marine Directorate exercises responsibilities relating to the marine environment, including INNS affecting aquaculture operations, marine habitats and marine infrastructure.

4.16 Associated powers of entry are provided under sections 14M to 14O of the 1981 Act, enabling authorised persons to enter land for purposes related to investigating the presence of INNS or carrying out control operations.

Policy intent behind the species control provisions

4.17 The Policy Memorandum accompanying the Wildlife and Natural Environment (Scotland) Bill when it was laid in Parliament stated that species control provisions were intended to address two principal situations:

1. early detection and rapid response: where an INNS is newly detected and swift action is required to prevent it from becoming established
2. landscape-scale control programmes: where a coordinated programme to control a widespread INNS is underway and the refusal of a small number of landowners to participate risks undermining the effectiveness of the programmes

4.18 The provisions were designed primarily to enable authorities to address newly detected populations of INNS or to ensure that a small number of non-participating landowners do not undermine wider control programmes. During parliamentary scrutiny, the Scottish Parliament's Rural Affairs and Environment Committee noted that a system of Species Control Provisions is necessary as a backstop to the general invasive non-native species regulations and to provide statutory backing for the code of practice.[27]

Statutory tools used to control invasive non-native species in Scotland

4.19 Whilst SCAs and SCOs are the primary tools designed specifically for INNS control, regulatory bodies in Scotland can also rely on a range of other statutory powers when addressing INNS risks. These tools sit within different regulatory regimes designed primarily for plant health, animal health or environmental protection but may be used in circumstances where INNS pose a risk to ecosystems or agricultural systems. These are set out in Box 2.

Box 2: Other regulatory and enforcement tools relevant to INNS management

Plant health legislation

- under the Plant Health (Scotland) Order 2005, Scottish Ministers and authorised inspectors may issue Statutory Plant Health Notices requiring landowners and occupiers to take specified actions to control statutory plant pests or diseases
- notices may require destruction of infected plants, movement restrictions or biosecurity measures
- these powers are generally broader and more immediately enforceable than species control provisions and are designed to enable rapid intervention

Environmental regulation

- regulators such as SEPA may impose conditions relating to INNS management through environmental authorisations or permits (e.g. under the Environmental Authorisations (Scotland) Regulations (EASR))
- these conditions may apply where regulated activities pose a risk of spreading invasive species

Other biosecurity regimes

- certain sector-specific regimes (e.g. the Bee Act 1980) provide inspectors with strong powers of entry and enforcement to enable rapid action where notifiable bee pests pose significant biosecurity risks

Retained EU Invasive Alien Species Regulation

- applies across Great Britain and includes restrictions on keeping, breeding, transport, sale and release of listed species
- requires surveillance, rapid eradication of newly detected populations and management measures for widely spread species of special concern
- provides licensing powers allowing otherwise prohibited activities under strictly controlled conditions

Enforcement tools in other jurisdictions

- in England and Wales, regulators have access to civil sanctions, providing intermediate enforcement options between voluntary engagement and criminal prosecution
- equivalent tools are not currently available in Scotland

4.20 Regulators have also highlighted animal health legislation as an example of a more direct and enforceable framework than that available for INNS management. In

particular, they enable more immediate intervention, include powers to declare infected areas and impose movement restrictions, and are supported by explicit offences and penalties for non-compliance.

Comparison with other regulatory regimes in Scotland

4.21 The regulatory framework governing INNS can also be compared with other biosecurity regimes that provide inspectors with broader powers to intervene where risks are identified.

4.22 One example cited by a regulatory body is the Bees Act 1980, which provides inspectors with powers to enter premises and take action to control pests affecting honey bees. The Bees Act enables authorised inspectors to enter premises, examine hives and destroy infected bees or equipment where necessary to control pests such as the small hive beetle (*Aethina tumida*) or other notifiable pests.

4.23 The Bees Act provides inspectors with strong powers of entry and enforcement to enable rapid intervention where pests threaten bee populations. In response to an information request by ESS, a regulatory body highlighted the Bees Act as an example of a regulatory regime that allows more immediate action than the powers available under the 1981 Act INNS provisions.

4.24 Other biosecurity regimes provide similar inspection and enforcement powers. For example, plant health inspectors operating under plant health legislation may enter premises without prior notice to inspect plant material and impose statutory notices requiring remedial action.

4.25 These regimes illustrate a different regulatory model in which inspectors are provided with broad powers to investigate and address biosecurity risks without requiring the establishment of formal agreements or orders with landowners.

Legislative frameworks in England and Wales

4.26 The legislative framework governing INNS in England and Wales is broadly similar to that in Scotland, as the species control provisions of the 1981 Act apply across Great Britain. However, in England and Wales these powers are supplemented by additional enforcement mechanisms, including civil sanctions under the Invasive Alien Species (Enforcement and Permitting) Order 2019. This

gives effect to Regulation (EU) No 1143/2014 of the European Parliament and of the Council on the prevention and management of the introduction and spread of invasive alien species. These powers provide a broader range of enforcement options than are currently available in Scotland, where equivalent civil sanction provisions have not been introduced.

4.27 In England and Wales, the sanctions allow regulators to impose administrative penalties or require remedial action for certain breaches of INNS legislation without pursuing criminal prosecution.

4.28 Public authorities in England and Wales also have access to Community Protection Notices (CPNs) under the Anti-social Behaviour, Crime and Policing Act 2014. CPNs allow local authorities to require individuals to address activities that have a detrimental effect on the quality of life of those in the locality and have been used to require control of Japanese knotweed.[28]

4.29 In addition, regulators in England and Wales may use licensing and permitting powers associated with the retained EU Regulation to authorise certain restricted activities involving INNS of Union concern. These licensing powers arise from the retained INNS Regulation, which applies across Great Britain but is implemented through different enforcement frameworks in each jurisdiction.

Comparative overview of regulatory tools across Great Britain

4.30 Key differences in the regulatory frameworks across Great Britain arise from the wider enforcement tools available to regulators, rather than the core statutory provisions, which are broadly shared. As outlined above, regulators in England and Wales have access to additional enforcement mechanisms, including civil sanctions under the Invasive Alien Species (Enforcement and Permitting) Order 2019 and, in some cases, Community Protection Notices under the Anti-social Behaviour, Crime and Policing Act 2014. In Scotland, equivalent tools are not available, and regulators rely more heavily on voluntary cooperation, criminal offences and SCAs/SCOs under the 1981 Act.

5. Implementation of invasive non-native species control in practice

Voluntary and partnership-based approaches in Scotland

5.1 It is clear that INNS control in Scotland is delivered primarily through voluntary cooperation and partnership-based programmes rather than through routine use of statutory enforcement powers.

5.2 NatureScot reported that since the early 2000s it has supported the development of large-scale voluntary INNS control programmes across Scotland. These programmes are typically delivered through partnerships involving public bodies, environmental organisations, landowners and volunteers and now cover more than one third of Scotland's land area.

5.3 These programmes coordinate management across multiple landholdings and are typically implemented through project teams working with contractors, land managers and volunteers. Volunteers make a significant contribution to these activities. NatureScot estimates that volunteers collectively contribute more than 10,000 hours annually to INNS control programmes per year.

5.4 Participation in these programmes is generally secured through voluntary cooperation with landowners and occupiers. NatureScot estimates that between 2500 and 3000 landowners and occupiers participated in voluntary INNS control programmes during 2025.

5.5 In some cases, cooperation with landowners is formalised through project-level voluntary agreements. For example, the Scottish Invasive Species Initiative has established more than 60 voluntary landowner agreements under which landowners commit to carrying out ongoing management of invasive plants on their land following initial support from the programme. This approach enables project resources to be redirected to new sites once initial control has been completed.

5.6 Evidence provided by NatureScot also suggests that voluntary engagement with landowners is generally effective in securing access for INNS control. Fewer than 1% of landowners involved in INNS programmes are reported to refuse access for control activities.

5.7 Where landowners are initially reluctant to participate, project staff typically attempt to resolve the issue through engagement and negotiation rather than formal enforcement. NatureScot estimates that between 30 and 50 cases since 2015 required additional intervention after project partners encountered difficulties securing cooperation. In nearly all of these cases, the issue was resolved through meetings or correspondence without the need to resort to statutory powers such as SCAs or SCOs.

5.8 A similar approach was described by the Scottish Government's Marine Directorate, which has received approximately 40 reports of potential INNS occurrences from a range of sources. Responses to these reports have varied depending on the circumstances of each case and have included actions to confirm whether an INNS is present, providing advice to relevant parties on biosecurity measures or control approaches, and engaging informally with stakeholders to resolve issues.

5.9 Regulators noted that partnership-based approaches are particularly important where INNS are widespread and effective control requires coordination across multiple landholdings.

5.10 Regulators highlighted several examples of coordinated programmes, including Saving Scotland's Red Squirrels initiative, a nationwide partnership programme involving public bodies, environmental organisations and volunteers to coordinate grey squirrel control in areas where the species threaten native red squirrel populations. Scottish Forestry participates in the programme as a supporting partner, providing funding and policy support through the Forestry Grant Scheme. The initiative coordinates grey squirrel control across large areas of woodland, helping to protect red squirrel populations and ensure public funding for INNS management is effectively targeted.

Financial incentives and grant-funded control mechanisms

5.11 Financial incentives represent an important mechanism for encouraging participation in INNS control programmes.

5.12 NatureScot reported that the Agri-Environment Climate Scheme (AECS) include options supporting the control of invasive non-native plants. These options allow land

managers to receive financial support for undertaking control measures as part of wider land management agreements.

5.13 However, uptake of this option has been relatively limited. Since 2015, NatureScot has approved 23 AECS contracts supporting INNS plant control. NatureScot reported that it is currently working with the Scottish Government's Agriculture and Rural Economy Directorate to explore ways of increasing uptake by modifying eligibility criteria, scoring systems and reporting requirements associated with the scheme.

5.14 In the forestry sector, Scottish Forestry reported that INNS management is primarily delivered through the Forestry Grant Scheme (FGS). This scheme provides financial incentives for landowners and forestry managers to undertake management activities including the control of INNS such as rhododendron (*Rhododendron ponticum*) and grey squirrel (*Sciurus carolinensis*).

5.15 Between 2016 and 2025, Scottish Forestry funded 143 grey squirrel control projects and 145 rhododendron control projects. An evaluation of the FGS covering the period 2015 to 2021 reported that 44 funded projects included rhododendron control, resulting in approximately 1,337 hectares of habitat being cleared. During the same period, 120 applications for grey squirrel control were approved, supporting trapping across approximately 19,200 hectares of woodland and funding more than 13,000 trap locations.

5.16 NatureScot also reported that INNS control may be supported through management agreements where specific actions are required to restore protected sites to favourable condition. These agreements are typically used on Sites of Special Scientific Interest (SSSIs) or other designated sites where INNS are affecting conservation features.

5.17 NatureScot stated that since 2015, they have supported INNS control on SSSIs through 35 management agreements with landowners. There are 1,422 SSSIs in Scotland. Invasive species, including both native and non-native species, are the single biggest negative pressure on natural features on protected sites.[29]

5.18 In addition to these mechanisms, NatureScot reported that it is piloting a sika deer *(Cervus nippon)* management incentive scheme covering approximately

527km^2 on the south side of Loch Ness. This scheme provides financial incentives for wildlife managers to increase the culling of invasive sika deer in native woodland and commercial forestry areas.

5.19 While regulators collect information on individual programmes, agreements and funded activities, this information is not consistently collated or reported at a national level. Monitoring approaches vary between organisations and programmes, and there is no single framework for assessing the overall scale, coverage or effectiveness of INNS management across Scotland.

Other regulatory tools used by Scottish authorities

5.20 In addition to voluntary approaches and financial incentives, regulators may use other regulatory mechanisms in certain circumstances to address INNS or reduce threats.

5.21 Competent authorities and plant health inspectors may use statutory powers under plant health legislation where invasive organisms are regulated as plant pests or diseases. These powers provide a mechanism for requiring landowners to undertake actions such as felling infected trees, removing infected plant material or implementing biosecurity measures.

5.22 Regulators also indicated that in some situations INNS management may be incorporated into existing management agreements relating to designated sites, forestry grant agreements or other land management schemes.

Use of Species Control Agreements and Species Control Orders in Scotland

5.23 Across the three regulators – Scottish Ministers (the Marine Directorate and Scottish Forestry), NatureScot and SEPA, a total of ten SCAs have been established since 2012, while no SCOs or emergency SCOs have been issued.

5.24 This indicates that the compulsory elements of the statutory framework have not been used in practice since their introduction.

5.25 Examples of the use of Species Control Agreements in Scotland are summarised in Box 3.

Box 3: Use of Species Control Agreements in Scotland

NatureScot

Two SCAs (giant hogweed (*Heracleum mantegazzianum*), black-tailed prairie dog (*Cynomys ludovicianus*)).

Marine Directorate (Scottish Government)

Six SCAs (carpet sea squirt (*Didemnum vexillum*), Loch Creran).

SEPA

One SCA (signal crayfish (*Pacifastacus leniusculus*) in Galloway Forest Park)

Scottish Forestry

One SCA (rhododendron (*Rhododendron ponticum*) at Invergarry Dam)

5.26 Evidence from the regulators indicates that SCAs have been used in a limited number of cases, typically in specific and well-defined circumstances. These include situations where there is a clear management objective, a limited number of parties involved, and where statutory underpinning is considered necessary to support coordinated or time-bound action.

5.27 In the case of NatureScot, SCAs have been used in site-specific situations, including control of species such as giant hogweed and black-tailed prairie dog. NatureScot also reported that requests from landowners or members of the public for the use of species control powers are occasionally received, particularly in relation to invasive plants spreading between neighbouring properties.

5.28 However, such situations are generally not considered appropriate uses of the powers, which were primarily designed to support early eradication of newly detected INNS or to ensure participation in coordinated control programmes.

5.29 The Marine Directorate's use of SCAs has been focused on the management of carpet sea squirt at a site in Loch Creran. These six SCAs were established using an adaptive management approach to prevent the species spreading and reduce the

presence at this location. The agreements set out specified and excluded procedures and operations relating to the biosecurity of shellfish stock and aquaculture infrastructure within the loch, along with inspection and reporting requirements.

5.30 SEPA's use of an SCA in Galloway Forest Park applied across a large operational area and focused on ensuring that activities undertaken by Forestry and Land Scotland and its contractors incorporated appropriate biosecurity measures. SEPA indicated that the use of a statutory SCA in this case provided added value by introducing a formal requirement for biosecurity measures to be implemented consistently, including any contractors undertaking forestry operations.

5.31 Scottish Forestry reported that its SCA was established in relation to rhododendron control, where the presence of the species was considered detrimental to the conservation status of the Garry Falls SSSI.

Implementation of INNS control tools in England and Wales

5.32 Discussions with Natural England and Natural Resources Wales indicate that INNS management in England and Wales, as in Scotland, is delivered primarily through voluntary cooperation and partnership-based programmes. Examples of how regulators in England and Wales use INNS control tools are summarised in Box 4.

5.33 Catchment-scale initiatives have been used to coordinate the control of invasive riparian plants such as Japanese knotweed (*Reynoutria japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*). These initiatives often involve collaboration between environmental regulators, river trusts, local authorities and landowners to undertake coordinated control across entire river systems.

5.34 SCAs and SCOs are also available to regulators in England and Wales. These powers were introduced through the Infrastructure Act 2015. These powers are broadly comparable to those in Scotland but, as in Scotland, appear to be used infrequently in practice.

5.35 Natural Resources Wales indicated that it has issued three SCAs since 2023 but has not issued any SCOs or emergency SCOs. The powers are considered to be

tools of last resort, intended to be used where voluntary cooperation cannot be secured or where more formal intervention is required.

5.36 Instead, regulators describe operating within a more graduated enforcement framework. Natural England outlined an approach comprising regulatory engagement, civil sanctions and, where necessary, criminal enforcement.

5.37 Regulatory engagement represents the primary mechanism used in practice, with most INNS cases addressed through written advice or warning letters that set out required corrective actions and clearly indicate the potential for escalation. Natural England reported high levels of compliance following such engagement. The availability of civil sanctions provides a credible intermediate escalation mechanism between voluntary compliance and criminal enforcement, even where these powers are used infrequently.

5.38 Civil sanctions, available under the Invasive Alien Species (Enforcement and Permitting) Order 2019, include measures such as compliance notices, restoration notices and stop notices. While these powers have not yet been used in relation to INNS, they are considered to provide an important intermediate enforcement mechanism. Criminal enforcement is used as a last resort and is rare in the INNS context due to cost and the high evidential threshold.

5.39 In addition to INNS-specific powers, regulators may also draw on other statutory tools where INNS cause environmental harm or nuisance. For example, CPNs under the Anti-Social Behaviour, Crime and Policing Act 2014 have been used in some cases to address invasive plant infestations like Japanese knotweed. A notice may require the landowner to undertake specified control measures within a defined timeframe, and failure to comply may result in financial penalties or further enforcement action.

Box 4: Examples of INNS control in England and Wales

Natural Resources Wales

- issued three SCAs since 2023 to address Himalayan balsam on SSSIs

Natural England

- operates a tiered enforcement model including regulatory engagement (advice, warning letters) as the primary tool
- civil sanctions available under the Invasive Alien Species (Enforcement and Permitting) Order 2019
- criminal enforcement used rarely as a last resort

Use of alternative powers (England and Wales)

- Community Protection Notices used in some cases to address invasive plant species e.g. Japanese knotweed

6. Assessment of the legislative framework

Policy intent and legislative design of the species control provisions

6.1 The intended role, purpose and design of Species Control Agreements and Species Control Orders are set out in Box 1. This section assesses how those intentions are reflected in practice.

6.2 As outlined in Section 5, the limited use of SCAs in Scotland broadly aligns with the original policy objectives. The SCAs identified in regulator responses were used in circumstances involving discrete infestations or specific sites where formal arrangements were required to coordinate control measures.

6.3 Evidence from regulators indicates that SCAs can provide added value over non-statutory arrangements in several ways. These include establishing clear and time-bound obligations, formalising roles and responsibilities between parties, and enabling compliance monitoring. In some cases, they have also been used to ensure that agreed biosecurity measures are implemented consistently by third parties, such as contractors, or to provide a statutory basis for prioritising or justifying control actions within existing operational programmes. SCAs also provide a pathway to escalation, as failure to comply with an agreement may lead to the imposition of a Species Control Order.

6.4 Against the changing context for INNS management described in Section 3, the evidence indicates that the situations in which INNS management is now required in Scotland may extend beyond the circumstances originally envisaged when the legislation was introduced. In particular, regulators and stakeholders highlighted to ESS challenges associated with landscape-scale eradication programmes, highly mobile species and situations requiring rapid intervention.

6.5 The policy framework underpinning the species control provisions was developed in a different operational context from that which exists today. At the time the Wildlife and Natural Environment (Scotland) Act 2011 was introduced, Scotland had limited experience of landscape-scale invasive species eradication, with the principal examples being the Hebridean Mink Project, an island-based programme initiated in

2001 to eradicate American mink from the Outer Hebrides and the Tweed Invasives Project, controlling invasive plants on riverbanks.[30, 31]

6.6 More recent initiatives such as the Orkney Native Wildlife Project involve complex landownership patterns, with a large number of separate landholdings, creating demands on the regulatory framework that extend beyond those anticipated when the legislation was designed.

6.7 The following sections therefore examine how the wider system of INNS management operates in practice and whether the current regulatory framework enables an effective response to these circumstances.

Predominance of voluntary and partnership-based approaches

6.8 As outlined in Section 5, INNS management in Scotland is delivered primarily through voluntary cooperation and partnership-based programmes.

6.9 These approaches typically operate across large geographic areas and involve collaboration between public bodies, environmental organisations, landowners and volunteers. Regulators indicated that voluntary engagement with landowners is generally effective in securing access for surveys and control work. There are also a limited number of organisations able to deliver complex, large-scale INNS management projects.

6.10 The predominance of voluntary approaches reflects both practical considerations and the policy intent behind species control provisions. SCAs and SCOs were introduced primarily as backstop tools intended to be used where voluntary cooperation cannot be secured rather than as routine regulatory instruments.

6.11 Evidence from England indicates that voluntary compliance can also be reinforced by the availability of credible escalation mechanisms. Natural England reported that most INNS cases are resolved through early-stage regulatory engagement, such as written advice and warning letters, which explicitly reference potential escalation to civil or criminal sanctions if compliance is not achieved.

6.12 This suggests that the effectiveness of voluntary approaches may be influenced not only by cooperation but also by the existence of a clear and proportionate

enforcement pathway. In England and Wales, regulators operate within a more graduated enforcement framework, including regulatory engagement, civil sanctions and where necessary, criminal enforcement. The Scottish framework relies heavily on voluntary engagement followed by species control measures where intervention is required.

6.13 This may limit flexibility in situations where voluntary cooperation cannot be secured but where full statutory intervention may be considered disproportionate or operationally challenging.

6.14 However, reliance on voluntary cooperation also means that the effectiveness of the system depends on the continued participation by landowners and land managers. In situations where cooperation cannot be obtained, or where rapid intervention is required, regulators may need to rely on statutory powers.

6.15 A further cross-cutting issue relates to the availability of evidence on INNS management activity in Scotland. While extensive control work is undertaken through voluntary and partnership-based programmes, information on the scale, geographic coverage and effectiveness of these activities is not systematically collected or reported on at a national level.

6.16 This limits the ability to assess how the overall system is functioning, identify gaps in coverage, and evaluate the relative contribution of different delivery mechanisms. It also constrains transparency and accountability in relation to how INNS management is delivered across Scotland.

6.17 Use of alternative statutory tools

6.18 Some regulators indicated that where statutory intervention is required, they may rely on alternative regulatory tools rather than species control powers.

6.19 Scottish Forestry reported that in situations involving tree health risks it may use Statutory Plant Health Notices under plant health legislation rather than SCAs or SCOs.

6.20 These notices allow regulators to require specific actions such as felling infected trees or implementing biosecurity measures.

6.21 SEPA indicated that they provide guidance outlining requirements relating to INNS for all relevant activities regulated under the Environmental Authorisations (Scotland) Regulations (EASR).

6.22 Regulators indicated that such tools may be more straightforward to apply in certain circumstances because they are embedded within established regulatory regimes with clear operational procedures.

6.23 Regulators also indicated that SCAs may be used in situations where voluntary arrangements exist but require formalisation to ensure consistent implementation. This may arise where agreed measures depend on multiple parties or contractors, or where there is a risk that voluntary commitments may not be delivered in practice without a statutory mechanism to support compliance.

6.24 Evidence from England suggests that where alternative enforcement tools are available, including civil sanctions, regulators may favour these over species control provisions due to their relative simplicity, flexibility and lower administrative burden.

Practical operation of species control powers

Powers of entry and evidential thresholds

6.25 The effective use of species control powers depends on the ability of regulators to access land to investigate the presence of INNS, assess risks and undertake or require control operations.

6.26 Under sections 14M to 14O of the 1981 Act, authorised persons may enter premises for purposes connected with the species control framework. These include determining whether an INNS is present, assessing whether a Species Control Agreement or Species Control Order may be required, or monitoring compliance and carrying out operations under an order.

6.27 The legislation therefore does not provide a general or standalone power of entry for inspection or investigation purposes.

6.28 While these powers are not framed as a standalone power to search for invasive species, the powers do enable the investigating, monitoring and surveillance of suspected INNS presence. Evidence from NatureScot indicates that these powers have been used in practice to ascertain the presence of INNS on land.

6.29 However, this position is not clearly articulated in the guidance or understood consistently in practice. As a result, there is uncertainty about whether entry powers can be used proactively, particularly in the absence of confirmed evidence of species presence.

Procedural issues including notice requirements and warrants

6.30 The use of species control powers involves procedural steps including:

- providing notice prior to entry in most circumstances
- obtaining a warrant where access is refused or cannot otherwise be secured
- preparing and serving formal agreements or orders

6.31 Regulators indicated that these requirements can contribute to administrative complexity, particularly in cases where:

- land ownership is unclear or fragmented
- multiple landholdings are involved
- legal input is required to prepare documentation

6.32 Under the legislation, authorised persons must normally provide advanced notice before entering premises. Where access is refused or the occupier cannot be located, regulators may apply to the sheriff for a warrant authorising entry. This warrant is a form of court order issued by the sheriff, permitting entry to the premises where voluntary access is unavailable.

6.33 While these requirements do not prevent regulators from entering land, they introduce additional procedural steps that may affect both the timing and certainty of access. In practice, the need to provide notice and potentially obtain a warrant may limit the ability of regulators to respond quickly in situations where early investigation or intervention is required, unless an emergency SCO is being used. Stakeholders highlighted similar challenges in relation to eradication programmes, as illustrated by the Orkney Native Wildlife Project case study (see Box 5).

6.34 Regulators indicated that identifying the owner or occupier of land may be difficult in some circumstances, particularly where ownership records are unclear or where land is held through complex ownership structures. These factors may further affect the time required to secure access for surveys or control activities.

Box 5: Case study - Orkney wildlife project

INNS: stoats

Aim: to eradicate invasive stoats from the Orkney Islands

Challenge: requires access across a large number of landholdings to implement trapping and monitoring operations effectively

Progress: project partners reported that voluntary access has been secured across the vast majority of landholdings in the programme in Orkney. However, access has not been obtained for properties representing approximately 7% of priority stoat habitat. Stakeholders indicated that even relatively small areas of inaccessible habitat may allow populations to persist and potentially undermine eradication efforts.

Sequencing, emergency powers and timeliness of intervention

6.35 Stakeholders also raised questions regarding whether authorities are required to attempt to establish a SCA before imposing a SCO.

6.36 Under section 14D of the Wildlife and Countryside Act 1981, authorities are required to seek to establish a voluntary SCA before imposing a SCO. This reflects the policy intention that voluntary approaches should be pursued before compulsory measures are used. This requirement does not apply where the making of a SCO is urgently necessary. However, where agreement cannot be reached, or where an agreement is not complied with, authorities may impose a SCO. Such orders may require the owner or occupier to carry out specified operations or may provide for the relevant authority to undertake those operations directly. However, this would not

apply for an emergency SCO, where the owner or occupier is not expected to bear the costs of any activity.

6.37 ESS' understanding is that SCOs may, in principle, provide for operations to be carried out directly by the relevant authority, although this is not explicitly articulated in the legislation or guidance and may be subject to scrutiny in individual cases. This lack of clarity may contribute to cautious interpretation in practice.

6.38 However, this structure establishes a general expectation that authorities will seek to use a sequential process before undertaking control work themselves. This sequencing is not absolute and does not prevent alternative approaches where justified, although this may have implications for cost recovery or any potential prosecution.

6.39 The legislation provides for the use of emergency SCOs where action is "urgently necessary", allowing authorities to bypass the agreement stage and initiate control measures more quickly.

6.40 The term "urgently necessary" is not defined in the legislation. This creates a broad discretionary test with no limiting criteria. This suggests that relevant authorities have significant flexibility in determining when emergency powers may be used. The limited use of emergency orders in practice may reflect operational interpretation or risk appetite rather than limitations inherent in the statutory framework.

6.41 The guidance on SCAs and SCOs used by regulators provides practical examples of circumstances in which emergency SCOs may be appropriate, including situations where delay would allow further spread or undermine control efforts.

6.42 However, the guidance frames urgency primarily by reference to the delay associated with the standard SCA/SCO process. This may risk narrowing the interpretation of the statutory test in practice, which legal advice suggests is intended to be broader and not tied to a fixed timeframe.

6.43 Emergency orders are time-limited (up to 49 days) and are subject to appeal. While operations may begin before an appeal is determined, the possibility of challenge may introduce uncertainty regarding the continuation of control measures.

Where longer-term action is required, authorities may need to revert to the standard SCA/SCO process.

6.44 ESS' understanding is that, while emergency SCOs can take effect immediately, the ability of a Sheriff to suspend their effect pending appeal may act as a disincentive to their use, particularly in time-sensitive scenarios.

6.45 ESS' understanding is that emergency SCOs may be used to secure immediate action while a standard SCO process is undertaken in parallel. This provides a mechanism for ensuring continuity of control measures beyond the lifespan of the emergency SCO.

6.46 Stakeholders expressed concern that sequencing of agreements and orders may affect the ability of regulators to initiate control or eradication activity, particularly in situations where rapid intervention would be most effective.

Practical constraints on the use of powers

6.47 In addition to procedural factors, regulators highlighted practical constraints that may influence the use of statutory species control powers.

6.48 Regulators highlighted both financial and staff resource implications associated with using statutory species control powers. NatureScot indicated that preparing a SCA costs approximately £2,500, while preparing a SCO costs approximately £1,500, with an additional £600 required to obtain a warrant where access is refused. Scottish Forestry similarly indicated that the routine use of SCAs or SCOs would require significant additional staff capacity due to the administrative work involved in preparing agreements or orders, verifying land ownership, liaising with landowners and coordinating technical input.

6.49 Regulators and stakeholders also highlighted concerns regarding the potential implications of enforcement action for relationships with landowners. Large-scale eradication programmes rely heavily on voluntary cooperation. Stakeholders indicated that the use of compulsory powers may affect the willingness of some landowners to continue with voluntary access.

6.50 The possibility of appeals against SCOs may introduce uncertainty regarding the timing and outcome of enforcement action. Regulators indicated that this may

influence decisions regarding whether statutory powers are used, particularly where programmes rely on continued cooperation from landowners across a wider area.

Premises-based design and landscape-scale challenges

6.51 Stakeholders highlighted challenges arising from the premises-based structure of the species control provisions. Under the legislation, SCAs and SCOs are made in relation to specific premises and must be directed to the owners or occupier of those premises. Where invasive species occur across multiple landholdings, agreements or orders may therefore need to be negotiated or issued separately for each owner or occupier. This structure may be particularly challenging in situations involving highly mobile species or landscape-scale eradication programmes.

6.52 Where INNS populations move across multiple landholdings, the premises-based structure of the legislation may make it more complex to coordinate control actions across the full geographic area required to achieve effective management action. This issue is compounded by uncertainty regarding the scope of the word ‘premises’ within the legislation, which may affect how these powers can be applied in practice.

6.53 ESS’ understanding is that there is uncertainty as to how the term ‘premises’ should be interpreted in Scotland. While it has been suggested that the term may be interpreted narrowly as referring to land and buildings only, it is also possible that a broader interpretation could be applied, though this may require definition. The absence of an explicit definition, in contrast to England and Wales, creates ambiguity as to the extent to which the powers apply to structures, vehicles, or other non land-based contexts.

6.54 This ambiguity arises in part because amendments made in England and Wales explicitly expanded the definition of ‘premises’ to include additional categories such as moveable structures and means of transport. Equivalent amendments were not made in Scotland. Legal analysis suggests that this difference may support an inference that the Scottish provisions were intended to have a narrower scope.

Inspection powers

6.55 The Non-Native Species Inspectorate, part of the Animal and Plant Health Agency, was established in 2021 to enforce legislation governing INNS in Great Britain. Regulators highlighted differences in the investigative powers available to inspectors responsible for INNS enforcement in Scotland compared with those available in other parts of Great Britain.

6.56 In Scotland, inspectors primarily operate under the general powers available to wildlife inspectors in Part I of the 1981 Act, alongside powers of entry associated with species control provisions. These powers are largely framed around investigating suspected offences or determining whether the relevant authority should offer or make use of SCAs or SCOs.

6.57 NatureScot indicated that, in practice, these powers are more limited in scope and operational flexibility than those available to inspectors in England and Wales under legislation implementing the retained EU Invasive Alien Species Regulation, particularly the Invasive Alien Species (Enforcement and Permitting) Order 2019.

6.58 This may be particularly relevant where invasive species are transported via vehicles, vessels or equipment, as uncertainty regarding whether such context fall within the definition of ‘premises’ may affect the extent to which existing powers can be applied.

6.59 Additionally, inspectors in Scotland do not have a general power to stop and search persons or vehicles (including boats) to investigate the movement or potential release of INNS. As a result, where such powers are required (for example, to inspect vehicles, cargoes or containers), inspectors may need to rely on collaboration with other authorities, such as police constables or plant health inspectors.

6.60 There are also differences in seizure powers across Great Britain. In Scotland, powers to seize specimens under the 1981 Act are generally exercisable by police constables in connection with suspected offences, or by inspectors in limited circumstances linked to evidential purposes. There is no clearly defined power for inspectors to seize specimens on a precautionary basis where there is a risk of escape, spread or release.

6.61 In England and Wales, the Invasive Alien Species (Enforcement and Permitting) Order 2019 provides authorised officers with more explicit and flexible powers, including the ability to seize specimens and take other enforcement actions where necessary to prevent the spread of invasive species, including outside the context of a criminal investigation.

6.62 Inspectors in Scotland do not have a general standalone power to destroy INNS outside the species control framework. This distinguishes the Scottish framework from that in England and Wales, where inspectors may have access to more direct operational enforcement powers, including seizure and disposal of specimens.

6.63 The enforcement regime in England and Wales appears to have developed a more tailored and operationally flexible set of powers specific to INNS, including a more graduated set of enforcement tools and clearer escalation pathways. This may have implications for the speed, flexibility and effectiveness of detection, investigation and response, particularly in time-sensitive scenarios.

6.64 ESS is aware that work is currently underway through the Great Britain Non-Native Species Programme Board to review the powers available for invasive species management. This work is examining the range of powers currently available to inspectors responsible for invasive species enforcement and considering whether additional powers may be required to support operational activities.

7. Implications for the effectiveness of the regulatory framework

Synthesis of the evidence and implications for improvement

7.1 The evidence presented in the preceding sections provides an overview of how invasive non-native species control is implemented in Scotland and how the legislative framework supporting that work operates in practice. Taken together, this evidence provides a basis for assessing how effectively the current policy and regulatory framework operates in the context of evolving biodiversity challenges and policy objectives.

7.2 The analysis indicates that the management of INNS in Scotland relies heavily on voluntary cooperation and partnership-based delivery. Large-scale programmes involving public bodies, environmental organisations, land managers and volunteers play a central role in the management of many established invasive species.

7.3 These programmes often operate across substantial areas of Scotland and involve participation from large numbers of landowners and land managers. Regulators consistently reported that most landowners cooperate with INNS management initiatives and that formal enforcement action is rarely required.

7.4 In this context, the limited use of statutory species control powers does not necessarily indicate that the legislative framework is ineffective. Rather, it reflects the intended role of these powers as a backstop to support voluntary approaches where necessary.

7.5 However, evidence from England suggests that the effectiveness of an enforcement framework depends both on the availability of statutory powers and on how they operate in practice alongside other enforcement mechanisms. Natural England indicated that most INNS cases are resolved through early-stage regulatory engagement, supported by the availability of intermediate enforcement tools such as civil sanctions.

7.6 This comparative evidence suggests that voluntary approaches may be reinforced by the availability of clear and credible escalation measures, including

tools that enable regulators to response proportionately where cooperation cannot be secured.

7.7 The evidence gathered during this analysis indicates that, while the current framework broadly reflects its original policy intent, several operational, structural and procedural factors limit how effectively statutory powers can be used in practice. These include limitations relating to access to land, the sequencing of statutory processes, evidential thresholds, and the scope of investigative and enforcement powers available to inspectors.

7.8 Where voluntary cooperation cannot be secured, the ability of the regulatory framework to provide timely and effective intervention becomes particularly important. In such circumstances, the effectiveness of the regulatory framework depends not only on the existence of statutory powers but on how easily and effectively those powers can be used.

7.9 As set out in Section 3, Scotland has committed to ambitious international biodiversity targets, including the objective of reducing the rate of introduction and establishment by at least 50% by 2030. In addition, INNS control is increasingly being considered as a component of wider biodiversity restoration initiatives, including island eradication programmes and potential biodiversity compensation mechanisms.

7.10 These developments provide the context against which the effectiveness of existing regulatory mechanisms for coordinated, landscape-scale INNS management need to be assessed.

7.11 ESS concludes that challenges identified by regulators and stakeholders arise not only from the availability of statutory powers, but from uncertainty regarding how those powers should be interpreted and applied in practice, including ambiguity in key terms and limitations in supporting guidance.

7.12 Comparative evidence also indicates that the availability of a broader range of enforcement tools may support more effective and proportionate responses, even where such tools are used infrequently.

7.13 In addition, information on the extent and effectiveness of INNS management activity is not consistently available at a national level, limiting transparency and the ability to assess progress against biodiversity objectives.

7.14 Taken together, the evidence indicates that Scottish Government should update the policy and regulatory framework governing invasive non-native species control in Scotland. That update should address three broad areas:

- the clarity and operation of the existing framework
- the range and flexibility of regulatory tools available
- the monitoring, reporting and transparency of invasive species management activity and outcomes

Clarity and operation of species control provisions

Key finding 1

The current regulatory framework governing invasive non-native species control is not consistently understood or applied in practice and is therefore not fully effective.

Uncertainty regarding evidential thresholds, procedural requirements and the sequencing of statutory powers, together with limited clarity in supporting guidance, is likely to reduce how readily species control provisions are used in practice.

7.15 The evidence gathered during this analysis indicates that, while the statutory framework for invasive non-native species control in Scotland broadly reflects its original policy intent, uncertainty regarding how species control provisions should be interpreted and applied in practice affects how readily they are used.

7.16 Species control provisions have been used only rarely since their introduction. Across the regulators with responsibility for implementing the powers, a total of ten SCAs have been established and no SCOs have been issued. Regulators indicated that this reflects the intended role of these powers as a backstop where voluntary approaches are ineffective. However, evidence also indicates that limited use is influenced by a range of practical and interpretation factors.

7.17 Evidence from regulators suggests that SCAs have been used not only where voluntary approaches have failed, but also where voluntary arrangements have required formalisation. In particular, SCAs can provide value by clarifying responsibilities between parties, establishing time-bound requirements for action, enabling compliance monitoring and supporting escalation where required.

7.18 However, this role is not clearly articulated in current guidance, and greater clarity on when and how SCAs should be used would support more consistent and effective application.

7.19 A key issue identified through this analysis is uncertainty regarding the interpretation and practical application of the legislative provisions. While the

framework provides powers of entry and mechanisms for requiring control action, the relationship between evidential thresholds, access for investigation and monitoring, and formal enforcement is not clearly set out in legislation or guidance. Uncertainty regarding the level of evidence required at different stages, including what constitutes sufficient basis to justify entry or proceed to an order, affects decisions about whether and when statutory powers are used.

7.20 Questions were also raised regarding the sequencing of agreements and orders. The legislation generally requires authorities to seek to establish a voluntary SCA before imposing a compulsory SCO. While this reflects the policy intention that voluntary approaches should be attempted first, regulators indicated that this sequential process may significantly increase the time required to implement control measures, particularly in situations where rapid intervention may be necessary.

7.21 Legal advice obtained during this project indicates that the statutory framework provides greater flexibility than may be reflected in current practice, including the ability to use emergency SCOs where action is “urgently necessary”. The breadth of this test suggests that the framework is capable of supporting more rapid intervention in appropriate circumstances. However, this flexibility is not clearly reflected in the guidance and does not appear to be consistently understood or applied in practice, which contributes to cautious use of available powers.

7.22 A comparison with guidance used in other parts of Great Britain suggests that more explicit articulation of these issues is possible. In particular, guidance in Wales sets out clearer thresholds for the use of powers of entry, including where there are reasonable grounds to suspect the presence of an invasive species, and provides more structured criteria for decision-making. The relative lack of equivalent clarity in Scottish guidance may contribute to greater uncertainty in practice by Scottish public bodies.

7.23 In addition to legal and interpretive issues, regulators highlighted several practical factors affecting how easily species control provisions can be used. These include:

- **administrative complexity** associated with establishing statutory agreements or orders. Implementing these powers requires identification of land ownership, preparation of formal notices and engagement with legal advisors.

These administrative requirements affect the practicality of using statutory powers in programmes involving large numbers of landholdings

- **resource considerations**, which are an important factor in influencing the use of statutory powers. Regulators indicated that pursuing enforcement action can require significant staff time and legal resources, particularly if appeals are lodged against orders
- **the appeals process**, which is a potential operational factor affecting the use of statutory powers. While appeals provide an important safeguard for landowners, regulators indicated that the possibility of appeals can introduce uncertainty regarding the time required to implement control measures. This is particularly relevant where rapid intervention is required to prevent the spread of invasive species
- **procedural requirements** associated with securing access to land. These include requirements to provide notice prior to entry, the need to obtain warrants where access is refused and the potential complexity of identifying landowners in some circumstances

7.24 Stakeholders also highlighted that the premises-based structure of the powers affects how effectively the framework can be used to address invasive species that occur across large geographic areas or move across multiple landholdings.

7.25 The Scottish Action Plan on Invasive Non-Native Species (2026-2032) includes a commitment to publish guidance in 2027 on the use of powers of entry and species control provisions to support inspections, surveillance and control activity. This represents a positive step towards addressing some of the uncertainties identified in this report. However, it is not yet clear whether this will address the full range of practical and legal uncertainties identified in this report.

7.26 Taken together, the evidence indicates that challenges in the use of species control provisions arise not only from the structure of the legislation, but from uncertainty in how its provisions are interpreted, communicated and applied in practice. This uncertainty is likely to influence how readily these powers are used and may limit their effectiveness as a regulatory backstop.

Recommendation 1

The Scottish Government should update the existing policy and regulatory framework and associated guidance governing invasive non-native species control to ensure that the operation of species control provisions is clear, consistently understood and capable of being applied effectively in practice

7.27 This update should include:

- providing clear operational guidance on evidential thresholds and the relationship between investigation, powers of entry and enforcement
- clarifying the sequencing and use of SCAs, SCOs and emergency SCOs, including when more rapid intervention is appropriate
- ensuring guidance reflects the full extent of flexibility available within the existing legislative framework, including the use of emergency powers
- clarifying the role of SCAs within the wider framework, including their use to formalise voluntary agreements
- supporting consistent interpretation and application across regulators through updated, accessible and practical guidance

7.28 This work should be taken forward through a defined programme of review and update, as part of a clear implementation plan setting out scope, milestones and timescales. This should be informed by engagement with relevant regulators and stakeholders and should align with commitments set out in the Scottish Action Plan for Invasive Non-Native Species (2026-2032).

Range and flexibility of regulatory tools

Key finding 2

The current regulatory framework does not provide a sufficiently flexible or comprehensive range of tools to support proportionate and effective intervention, particularly at landscape-scale, and is therefore not fully effective.

There is a significant gap in the current policy and regulatory approach between voluntary management and statutory species control measures. This reduces the capacity for regulators to act swiftly, proportionately and in a cost-effective manner to control INNS.

7.29 The evidence gathered during this analysis indicates that, while the existing framework provides a basis for intervention, it does not consistently provide the range or flexibility of tools required to support effective INNS management in all circumstances.

7.30 In Scotland, enforcement typically operates through a two-stage model of voluntary cooperation followed by statutory species control measures. Where voluntary cooperation cannot be secured, the principal statutory mechanisms available are SCAs and SCOs. However, there are limited intermediate options available in situations where voluntary approaches are insufficient, but full statutory intervention may be considered disproportionate or operationally burdensome.

7.31 Comparative evidence suggests that the availability of additional tools, such as civil sanctions, can support more proportionate and flexible responses. While these tools have not been widely used to date in the INNS context, they provide a credible escalation pathway that exists in other regulatory regimes and can reinforce voluntary compliance.

7.32 The evidence also highlights challenges in delivering coordinated, landscape-scale control. Many INNS management programmes operate across large geographic areas and require sustained action across multiple landholdings. Stakeholders indicated that achieving comprehensive coverage is critical, as gaps in participation are likely to undermine wider control efforts.

7.33 The premises-based structure of species control provisions means that agreements and orders are established individually for each property. This creates administrative complexity and may limit the ability to deliver coordinated intervention at scale, particularly in programmes involving large numbers of landowners or highly mobile species.

7.34 In addition, limitations were identified in the investigative and operational powers available to inspectors. Compared with other jurisdictions, inspectors in Scotland have limited powers to search, seize or take precautionary action where there is a risk of spread. This may constrain the ability to respond quickly and effectively in some circumstances.

7.35 Taken together, the evidence indicates that the current framework does not consistently provide the flexibility, range of tools or operational capability required to support proportionate, timely and landscape-scale intervention.

Recommendation 2

The Scottish Government should bring forward proposals to strengthen and expand the range of regulatory tools available for invasive non-native species management, ensuring that regulators are equipped to intervene effectively, proportionately and at the appropriate scale.

7.36 This should include:

- considering additional enforcement tools that provide a more graduated and proportionate response where voluntary cooperation cannot be secured
- addressing structural limitations associated with the premises-based approach, including options to support coordinated action across multiple landholdings
- strengthening investigative and operational powers available to inspectors responsible for invasive species enforcement

- ensuring that the framework can support timely intervention in situations involving rapid spread, highly mobile species or urgent biosecurity risks
- reviewing procedural requirements, including access arrangements and appeals processes, to ensure that they do not unduly delay necessary control action

7.37 This work should be taken forward through a defined programme of review and reform, including stakeholder engagement and public consultation.

7.38 While the focus of this report and this recommendation is on invasive non-native species control, ESS recognises that similar issues arise across wider biodiversity regulatory frameworks. In this context, there may be opportunities for the Scottish Government to consider whether the introduction of additional enforcement tools, such as civil sanctions, could be undertaken in a way that applies more broadly. This should aim to maximise the potential for good environmental outcomes, rather than being limited only to reform of regulatory powers for INNS control and management.

Monitoring, reporting and transparency of invasive non-native species activity and outcomes

Key finding 3

Information on invasive non-native species control activity is fragmented and not consistently reported at a national level, limiting transparency and the ability to assess the effectiveness of control measures.

This fragmentation significantly reduces the ability to obtain a clear national picture of how invasive species management is being implemented in practice. In particular, it is difficult to assess the relative contribution of voluntary initiatives, grant-funded programmes and statutory mechanisms, or to identify gaps in implementation across geographic areas or species.

7.39 Following the evidence set out above, ESS' analysis indicates that a significant proportion of invasive species control in Scotland is delivered through voluntary programmes, partnership initiatives and grant-funded projects. Regulators indicated

that monitoring and evaluation is routinely undertaken within individual programmes and agreements, including through annual reporting, site monitoring and project-level evaluation.

7.40 However, approaches to monitoring and reporting vary between programmes and organisations, and information is not consistently collected or published in a standardised format. As a result, data on the overall extent and effectiveness of invasive species management remains limited and fragmented across multiple sources.

7.41 This fragmentation significantly reduces the ability to obtain a clear national picture of how invasive species management is being implemented in practice. In particular, it is difficult to assess the relative contribution of voluntary initiatives, grant-funded programmes and statutory mechanisms, or to identify gaps in implementation across geographic areas or species.

7.42 It also limits transparency and reduces the ability to assess how management activity contributes to national biodiversity objectives. This includes targets set out in the Scottish Biodiversity Strategy, as well as international commitments such as reducing the rate of introduction and establishment of invasive species.

7.43 While individual programmes and regulators may hold relevant data, the absence of a consistent and accessible national framework for reporting means that this information is not routinely brought together in a way that supports oversight, evaluation or strategic decision-making.

7.44 Recent policy developments recognise these challenges. The Scottish Action Plan for Invasive Non-Native Species (2026-2032) includes commitments to develop data standards for recording the effectiveness of INNS management, establish national indicators and baselines, and improve reporting through integration with biodiversity monitoring frameworks. While these measures represent a positive step, they also indicate that a comprehensive, consistent system for monitoring and reporting INNS management outcomes is not yet fully in place.

7.45 Taken together, the evidence demonstrates that improvements in monitoring, reporting and transparency are required to support a clearer understanding of

management activity and outcomes, and to enable more effective assessment of progress towards Scotland's biodiversity objectives and INNS targets.

Recommendation 3

The Scottish Government should ensure that data and supporting information on invasive non-native species management is collected consistently and made publicly accessible in an appropriate and usable format, to provide a clear national picture of activity and outcomes.

This should include both statutory and voluntary control activity, and should set out more clearly how this activity contributes to Scotland's biodiversity objectives and INNS targets.

7.46 This should include:

- providing publicly accessible information on INNS control activity more consistently and transparently at a national level
- ensuring that monitoring and reporting of INNS management has clear links to the delivery of biodiversity commitments, including those in the Scottish Biodiversity Strategy to support implementation
- considering how existing data and reporting mechanisms can be used more effectively to communicate action already being taken and the outcomes to which it contributes
- providing a publicly accessible, clearer national picture of management activity, coverage and outcomes through better utilisation of existing data collection systems

Delivery and implementation

As a public authority, the Scottish Government has duties under Section 23 of the UK Withdrawal from the European Union (Continuity) (Scotland) Act 2021 to make all reasonable efforts to –

- swiftly resolve any matter which ESS raises concerning the authority's failure to comply with environmental law, to make effective environmental law or to implement or apply it effectively, and
- reach agreement with Environmental Standards Scotland on any remedial action the authority should take for the purpose of environmental protection

In line with these duties, ESS asks the Scottish Government to reach agreement with ESS for a plan of remedial action, which will be used by ESS as the basis for tracking progress against recommendations 1 to 3 in this report**.**

Recommendation 4

The Scottish Government must agree a plan of remedial actions, with a clear timeline for delivery, to resolve the issues highlighted in this report and implement ESS' recommendations. This should be agreed with ESS as soon as possible and no later than six months from the date of publication.

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