REPORT

Overstrand Japanese Knotweed Strategy

Client:	North Norfolk District Council
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Haskoning
Enhancing Society Together

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1 Introduction

1.1 Project Background

Haskoning has been commissioned by North Norfolk District Council (NNDC) to develop a strategy for managing a known infestation of Japanese Knotweed on an area of soft cliff adjacent to the promenade in Overstrand, Norfolk.

Japanese knotweed is a highly invasive, non-native plant species that presents significant ecological, structural, and legal challenges in the United Kingdom. This strategy sets out a comprehensive approach to managing Japanese knotweed in Overstrand, with the aim of ensuring compliance with relevant legislation while minimising both environmental and financial impacts.

The purpose of this report is to:

- Assess the current extent and condition of Japanese knotweed on the cliff at Overstrand.
- Review applicable legislation and outline potential legal implications.
- Evaluate appropriate management and control methods.
- Provide clear recommendations to assist NNDC in making informed decisions to address challenges posed by established stands of Japanese knotweed locally.

1.2 Site Description

This assessment is based on information provided by the client, and has not been validated locally by Haskoning. The assumed extents of the Japanese knotweed along the cliffs adjacent the promenade in Overstrand is shown in Figure 1 in Appendix A. This location is centred upon National Grid Reference TG 24954 40952 and is herein referred to as the ‘Site’. The promenade is actively used for beach access by local people and tourists.

The area within and immediately surrounding the Site is designated as a County Wildlife Site (CWS, Figure 2 in Appendix A). The wider surrounding area forms part of the Norfolk Coast Area of Outstanding Natural Beauty (AONB) and is recognised for its national and international importance in terms of nature conservation and geological interest. This includes the Overstrand Cliffs, which are designated as both a Site of Special Scientific Interest (SSSI) and a Special Area of Conservation (SAC), as well as the nearby Sidestrand and Trimingham Cliffs SSSI and the Great Wash Special Protection Area (SPA) (Figure 3 in Appendix A).

The fact that the Site is located within a CWS and is surrounded by SSSIs demonstrates that there is an ecological interest as maritime cliffs and slopes are often of high biodiversity value due to the range of microhabitats that support and act as a natural corridor for coastal species; often those that are rare or restricted to this habitat type.

The primary habitat type of the site is classified as maritime cliffs and slopes (UK Habs, 2023). These coastal landforms range from sloping to vertical and are primarily shaped by marine erosion and slippage. They include both hard cliffs, formed from resistant rocks such as chalk or sandstone, and soft cliffs, composed of less consolidated materials like boulder clay or shale. Additionally, maritime cliff and slopes habitats are considered of principal importance for biodiversity conservation (DEFRA, 2022) and are used by public bodies, landowners, and funding organizations to guide nature recovery and land management efforts.

North Norfolk is particularly renowned for its soft cliffs, which are highly dynamic and susceptible to erosion. These cliffs dominate much of the coastline, particularly between Cromer and Overstrand, and

are composed of glacial till and other unconsolidated materials, making them prone to frequent slumping, landslips, and erosion. They support a diverse mosaic of habitats, including bare ground, seepages, marshy patches, and early successional vegetation.

According to information from NNDC (2025), the cliffs in the central area of Overstrand consist of clay, silt, gravel, chalk, and sand, which are materials that are naturally unstable and particularly susceptible to collapse. This instability was evident in February 2025, when cliff movement prompted the Council to temporarily close the promenade between two points for public health and safety reasons (Figure 4). The erosion of the cliffs is a threat to properties and community assets on the clifftop.

It is not known how long the stand of Japanese knotweed has been present at the Site. There is no evidence or historical record of management activities or ecological surveys that could provide insight into the species' local establishment, spread, or behaviour over time.

Photograph 1 Aerial view of the Overstrand Promenade adjacent to the Site following cliff movement in March 2025

2 Ecology and distribution of Japanese knotweed

Japanese knotweed *Reynoutria japonica* also known by the synonyms *Fallopia japonica* and *Polygonum cuspidatum.* It is the most common of four invasive knotweed plant species in the UK, which include the following species: Japanese knotweed, dwarf knotweed, giant knotweed, bohemian (hybrid) knotweed (DEFRA, 2023). Native to East Asia, Japanese knotweed has a natural range that spans over Japan, China and Korea, where it typically thrives in volcanic soils, along forest edges and near riverbanks. In its native environment, its growth is naturally regulated by local predators, diseases and competition from other native plants.

Plants of Japanese Knotweed form dense clumps and grow up to 3 metres tall. The stem is hollow with distinct nodes like bamboo and breaks easily. In spring, it is fleshy and red-tinged, and in summer it is green with purple speckles. Leaves in spring are pinky red and uncurl as the stem grows. In summer, they become large, oval or heart-shaped, and mid-green. Flowers are cream-coloured and appear in drooping clusters towards the end of August. The plant normally dies before November, often leaving behind the upright brown, hollow, woody stalks.

The species was introduced to Europe in the mid-19th century, arriving in the United Kingdom around 1850. It was initially valued for its ornamental appeal and was widely planted in gardens, parks, and estates. Additionally, it was promoted for erosion control along railway embankments and riverbanks due to its rapid growth and dense root system.

However, outside its native range, Japanese knotweed quickly became invasive. In the absence of natural predators and competitors, it spread aggressively across Europe and North America, particularly in temperate climates. Its ability to regenerate from small fragments of rhizome or stem allowed it to colonize new areas rapidly, often outcompeting native vegetation.

Ecologically, Japanese knotweed is extremely adaptable. It can thrive in a wide range of environmental conditions, from full sun to deep shade, and it tolerates drought, flooding, and even high salinity. Its primary mode of reproduction is vegetative, through an extensive underground rhizome system. These rhizomes can regenerate new plants from even tiny fragments, making the species very difficult to eradicate. Although plants can produce seeds, vegetative spread is far more common and effective. Since only female plants have been recorded in the UK, all individuals are genetically identical clones originating from a single introduction (Bailey & Conolly, 2000). However, epigenic modifications (changes in gene expression that do not involve alterations to the DNA sequence) that can affect how genes are “turned on or off” in response to environmental factors may be responsible for the ability of Japanese knotweed to invade and thrive in such diverse habitats (Holden et al., 2021).

Increasingly, the species is also being reported in coastal areas across the UK and internationally (Richards et al., 2008; Yuan et al., 2024), where it presents unique ecological and management challenges. Although traditionally associated with inland and disturbed environments, its growing presence in coastal zones highlights its adaptability and resilience. The finding of an investigation carried out in Cornwall indicated that Japanese knotweed rhizomes can survive for periods of several months in saline conditions, even when submerged in seawater, therefore suggesting that there is potential for such parts of the plant to be carried downstream and out to sea and to reestablish if washed up further down the coast (Macfarlane, 2013).

Today, Japanese knotweed is considered one of the most problematic invasive species of plant in the UK and other temperate regions. So much so that it has been included in the list of the world’s 100 worst invasive species (Lowe et al., 2000) due to its significant impact on biodiversity, ecosystems, and human activities in areas where it occurs outside its natural distribution range. It is especially prevalent in urban

environments, river corridors, transport infrastructure, and brownfield sites, where it causes significant ecological and economic damage. Its presence can reduce biodiversity, alter soil chemistry as it releases chemicals into the soil that inhibit the growth of nearby plants (allelopathic effect), and negatively affect property values and development potential (see Drazan et al., 2021 and NNNSI, 2025 for further local information).

Photograph 2: dense growth of Japanese knotweed (left) and the plant in flower late summer (right)

3 Legal status of knotweed in England

3.1 Key Legislation

While it is not illegal to have Japanese knotweed on private land, there are strict legal responsibilities associated with its control, disposal, and the prevention of its spread to adjacent properties or the wider environment. These responsibilities are governed by several key pieces of legislation, including:

Wildlife and Countryside Act 1981 (as amended): Section 14(2) states that it is an offence to plant or cause Japanese knotweed to grow in the wild. Landowners must ensure the plant does not spread beyond their property including accidental spread through soil movement or improper disposal.

Environmental Protection Act 1990: under this Act, Japanese knotweed is classified as "controlled waste". Any contaminated soil or plant material must be disposed of by licensed waste carriers at authorised facilities and improper disposal can result in legal penalties.

Anti-social Behaviour, Crime and Policing Act 2014: this Act allows local authorities to issue Community Protection Notices (CPNs) to individuals or organisations that fail to manage knotweed on their land. Non-compliance can lead to criminal prosecution and fines of up to £2,500 for individuals and £20,000 for businesses

3.2 Property and Civil Law Implications

Neighbour Disputes and Private Nuisance: where Japanese knotweed spreads from one property to an adjoining property, liability may arise under civil nuisance law. In such cases, the courts may require:

- Remediation of the infestation; and/or
- Compensation for any resulting property damage or diminution in value.

Property Sales and Disclosure: under current property transaction protocols, sellers are required to disclose the presence of Japanese knotweed using the TA6 property information form. Failure to provide accurate information may result in legal claims for misrepresentation and associated financial liability.

4 Management Objectives

This section outlines the strategic objectives and corresponding actions for the effective management of Japanese knotweed on and around the Site. These objectives are designed to prevent further spread, reduce the extent of the existing infestation, restore affected areas, and ensure compliance with relevant environmental legislation. Each objective is supported by targeted, practical actions aimed at achieving long-term control and sustainable site restoration.

Additionally, the objectives address the risk of Japanese knotweed fragments entering the marine environment due to cliff erosion, landslides, or extreme weather events. In particular, storm conditions may cause the sea to overtop the promenade and reach the cliff face, accelerating erosion and dislodging plant material. Such fragments could then be transported by tidal or coastal currents, potentially leading to new infestations along the shoreline or within sensitive intertidal habitats.

4.1 Objective 1 - Prevent further spread of Japanese knotweed on and off Site

Objective
Implement strict measures and biosecurity protocols to contain the infestation and prevent Japanese knotweed from spreading via soil movement, runoff, human activity, or through fragments entering the marine environment as a result of cliff erosion, landslides, or extreme weather events.

Actions

- Establish clear site boundaries and signage to alert any personnel working in the area, local residents, and visitors.
- Train staff and contractors in identification and handling procedures.
- Restrict movement of contaminated soil and plant material.
- Use dedicated equipment for infested areas and clean thoroughly after use.
- Identify and map knotweed stands located on or near cliff edges vulnerable to erosion or slippage.
- Stabilise infested cliff sections where feasible using erosion control measures (e.g. geotextiles, vegetative buffers) to reduce rhizome detachment and fragmentation.
- Avoid mechanical disturbance of knotweed near cliff edges during high-risk weather or tidal conditions.
- Install sediment traps or natural barriers at the base of cliffs to intercept plant material before it reaches the intertidal zone.
- Conduct regular monitoring of the cliff base and adjacent shoreline for signs of knotweed colonisation and respond rapidly to any new growth.

4.2 Objective 2 - Reduce the extent of the infestation through targeted control measures

Objective
Apply effective, site-specific control methods to systematically reduce the knotweed population over time.

Actions

- Conduct a detailed survey to map the extent of the infestation.
- Use a single or a combination of chemical (e.g., glyphosate-based herbicides), mechanical (e.g., excavation), and biological control methods where appropriate, as described further in Section Control Methods.
- Monitor treatment effectiveness and adapt strategies based on results.

- Schedule treatments to coincide with optimal growth stages for maximum impact.

4.3 Objective 3 - Restore affected areas to a condition suitable for their intended use

Objective
Rehabilitate treated areas to support their designated land use (e.g. ecological, erosion and cliff protection, visual interest).

Actions
- Remove dead plant material and contaminated soil where necessary.
- Reintroduce native vegetation or appropriate measure to stabilise soil and prevent re-infestation.
- Monitor regrowth and conduct follow-up treatments as needed.
- Engage with stakeholders to align restoration with community or development goals.

4.4 Objective 4 - Ensure legal compliance and reduce long-term management costs

Objective
Fulfil all legal obligations under relevant environmental and invasive species legislation while minimising future expenditure.

Actions
- Adhere to the Wildlife and Countryside Act 1981 and Environment Agency guidelines.
- Maintain detailed records of treatment, monitoring, and disposal activities.
- Develop a long-term management plan with cost-effective, sustainable practices.
- Seek expert advice and potential funding opportunities where available.

5 Control Methods

Given its status as arguably the most economically significant invasive non-native species in England and elsewhere in the UK, Japanese knotweed presents serious challenges for landowners and developers. Its management can be legally required, and eradication efforts are often costly. As a result, there is a wealth of guidance available on how to prevent its spread, including official advice from the Department for Environment, Food & Rural Affairs (DEFRA, 2023) and the Great Britain Non-Native Species Secretariat (NNSS, 2018).

Effective management typically requires a combination of control methods, tailored to the specific site conditions and any relevant health and safety constraints. This section describes the available methods in general terms and how these could be applied and combined. Section Discussion and recommendations provides recommendations for the Overstrand Site.

5.1 Chemical Control

One of the most widely used and effective methods for managing Japanese knotweed is the application of herbicides, particularly those containing glyphosate. Glyphosate functions by being absorbed through the plant's foliage and translocated to the underground rhizome system, where it disrupts essential physiological processes and ultimately kills the plant. This systemic action is crucial for targeting the extensive and resilient root network that characterises Japanese knotweed.

In England, glyphosate is the only herbicide officially recommended for the control of Japanese knotweed. It is also the only active herbicidal ingredient permitted for use near water bodies, including rivers, streams, lakes, ponds estuarine and coastal waters. Among the available formulations, biactive glyphosate formulations are generally regarded as the most suitable due to their lower environmental toxicity and enhanced performance in aquatic or sensitive environments.

To further enhance the efficacy of glyphosate, the use of non-ionic surfactants is often recommended. These adjuvants improve the herbicide's ability to adhere to and penetrate the plant's waxy leaf surface, facilitating more efficient absorption and deeper translocation into the rhizomes. A commonly used adjuvant is Codacide Oil, a plant-based product that enhances herbicide uptake. A typical application rate for foliar application is 6 litres of glyphosate per hectare, diluted in 400 litres of water used in combination with 1 litre of Codacide Oil per hectare.

The method of herbicide application for Japanese knotweed control should be selected based on site-specific factors such as the size and density of the infestation, proximity to sensitive habitats, and any access or safety constraints. Available methods are foliar spraying, stem injection and cut-stem treatment.

- Foliar spraying is generally the most practical and effective approach, particularly during late summer when the plant enters its translocation phase and actively draws nutrients - and herbicides - into its rhizome system.
- Stem injection, which involves delivering herbicide directly into the plant's vascular system, offers a highly targeted method with minimal risk to non-target species. However, it is labour-intensive and may not be feasible for large or dense infestations.
- Cut-stem treatment, where herbicide is applied to freshly cut stems, is another effective method in areas where spraying is impractical or undesirable. Like stem injection, it is also labour-intensive and best suited to smaller or more sensitive sites.

Regardless of the method used, herbicide treatment typically requires multiple applications over several years. This is due to the extensive and resilient nature of the rhizome system, which can regenerate from small fragments if not completely eradicated.

It is important to note that herbicide applications should adhere to best practice and follow the guidance provided by the Environment Agency. Operators or contractors carrying out herbicide treatments must be suitably qualified. This typically involves holding certification such as PA1 and PA6 for handheld applicators, or PA2 for vehicle-mounted sprayers. Furthermore, herbicides must be applied only in appropriate weather conditions and strictly in accordance with the product label to ensure both effectiveness and environmental safety.

5.2 Physical Control

Physical control of Japanese knotweed involves the direct removal or suppression of the plant through mechanical or manual means. This approach can be effective in certain contexts, particularly where chemical use is restricted or undesirable, such as in conservation areas, near watercourses, or on organic land. However, physical methods often require significant labour, careful planning, and long-term commitment to be successful.

One of the most direct physical methods is excavation, which involves digging out the plant along with its extensive rhizome system. This method can be effective if the entire rhizome network is removed, but it is often challenging due to the depth and spread of the roots, which can extend several metres horizontally and up to two metres deep. According to Macfarlane (2013), even small fragments of rhizome, as little as 0.01 grams, can regenerate under suitable conditions. Therefore, excavation must be thorough, and all removed material must be treated as controlled waste and disposed of at licensed facilities.

Another physical approach is repeated cutting of the above-ground stems. While this does not eradicate the plant, it can reduce its vigour over time by depleting the energy reserves stored in the rhizomes. However, cutting must be carried out consistently and frequently, typically several times per growing season, and over multiple years. If cutting is irregular or incomplete, it may stimulate the plant to produce more vigorous regrowth, potentially worsening the infestation.

Other physical techniques include the use of root barriers to contain the spread of rhizomes, particularly along property boundaries or infrastructure. These barriers must be installed to sufficient depth and with materials resistant to penetration by knotweed roots. Additionally, covering infested areas with heavy-duty geotextile membranes can suppress growth by excluding light, though this method is generally more effective when combined with other treatments and requires ongoing maintenance to prevent damage or displacement.

Overall, physical control methods can play a valuable role in an integrated management strategy, particularly in areas where herbicide use is restricted or where immediate removal is necessary. However, the dynamic nature of cliff habitats, combined with the resilience and regenerative capacity of Japanese knotweed, makes precise application of these methods extremely challenging. The constant movement of the cliff can hinder effective implementation of this control method, necessitating long-term monitoring and follow-up to ensure lasting success.

5.3 Biological Control

As of 2025, the biological control of Japanese Knotweed in England remains a developing field of research, with some promising advances, though large-scale implementation is yet to occur. The primary focus has been on the introduction of *Aphalara itadori*, a host-specific psyllid native to Japan that feeds

exclusively on Japanese Knotweed. Field trials with this insect have been underway for several years, aiming to assess its ability to establish stable populations and reduce the plant's vigour in a natural setting. While preliminary results have shown potential, the insect has faced challenges adapting to the UK climate and has not yet achieved widespread success in controlling Knotweed in the wild (CABI, 2025).

Concerns also remain regarding the ecological safety of releasing non-native biological control agents. Regulatory bodies continue to closely monitor for any unintended impacts on native flora and fauna. In parallel, researchers are investigating additional biological agents—such as specific fungi and alternative insect species—but these remain in experimental stages and are not yet approved for release.
Despite these limitations, biological control is increasingly recognised as a valuable component of integrated weed management strategies. When used alongside physical removal and chemical treatments, it offers the potential for long-term, sustainable suppression of invasive species such as Japanese Knotweed. However, biological control alone is not currently considered a viable standalone solution, and long-term research and ecological monitoring are essential to validate its effectiveness and safety in the UK context.

In this broader framework, the use of goats as a form of biological management early in the season (e.g. March-June) has also gained attention. Targeted grazing presents a sustainable and low-impact method particularly suitable for sites with difficult terrain or ecological sensitivities. Goats naturally graze on a wide variety of plant material, including Japanese Knotweed's tender shoots and leaves. Repeated grazing over successive growing seasons can significantly reduce the plant's above-ground biomass, thereby limiting photosynthesis and gradually depleting the energy reserves stored in its extensive rhizome system. Nevertheless, goats are not capable of eradicating Knotweed entirely, as they do not eliminate the resilient underground root structure. Consequently, their use is most effective as part of a coordinated management approach that includes chemical, mechanical, and/ or ecological interventions. Careful site assessment, fencing, and ongoing monitoring are also essential to prevent unintentional spread, poaching, erosion impacts and to protect desirable vegetation.

5.4 Integrated Approach

A combination of treatment methods is often recommended for more effective and large-scale control of Japanese Knotweed. For example, grazing and/ or excavation followed by targeted herbicide application to any regrowth can accelerate the suppression of the plant and reduce the likelihood of long-term re-establishment. Integrating herbicide treatment with physical methods such as excavation or bunding can enhance outcomes, particularly when timed appropriately within the plant's growth cycle.

It is important to tailor the chosen control methods to the specific constraints of the site and the overall project timeline. Factors such as the presence of sensitive habitats, proximity to watercourses, and seasonal access limitations should all be considered when planning treatment.

However, at this particular site, mechanical control may present significant challenges. Restricted access, uneven or steep topography, and the unstable, crumbling nature of the ground may limit the feasibility of excavation or the use of heavy machinery. These constraints highlight the need for a carefully considered, site-specific approach that balances effectiveness with practicality and environmental sensitivity.

5.5 Key Considerations

Ongoing monitoring is a critical component of Japanese Knotweed management. Due to the plant's ability to remain dormant underground for extended periods, monitoring must continue for a minimum of five years following the final treatment. Even after apparent dieback, viable rhizome fragments can persist in

the soil and regenerate under favourable conditions, making long-term vigilance essential to prevent re-establishment.

It is also important to recognise that physical disturbance of Japanese Knotweed, such as natural cliff movements, digging or cutting, can inadvertently stimulate regrowth. Such actions, if not carefully managed, may also result in a breach of legal obligations under the Wildlife and Countryside Act 1981 as previously mentioned. Under Schedule 9 of this Act, Japanese Knotweed is classified as a controlled plant, and it is an offence to plant or cause it to grow in the wild—whether intentionally or through neglect.

Therefore, the lack of action to control Japanese knotweed infestations or implementation of a control strategy must be implemented with a clear understanding of both ecological dynamics and legal responsibilities. Proper containment, disposal by licensed waste carriers, correct application of herbicides and adherence to Environment Agency guidance are essential to ensure compliance and avoid potential penalties.

6 Discussion and recommendations

6.1 Management approach

The presence of Japanese Knotweed on the cliff at Overstrand should be regarded as an environmental hazard. Although the stand of knotweed at this location has likely been established for many years, it remains a persistent and problematic invasive species that will not resolve without active management. While the plant's extensive rhizome system can temporarily help stabilise soil by binding it together, this benefit is offset by the long-term risks it poses. Although some suggest knotweed may contribute to cliff stability by binding soil, there is no empirical evidence available to support this effect locally. Even if some cohesion is provided, the rhizome network could also contribute to instability by displacing soil or creating voids, particularly in soft or eroding cliff environments.

An important point to consider is the plant's seasonal dieback. Japanese Knotweed dies back in winter, leaving behind brittle, hollow stems and exposing the soil surface. This seasonal dormancy removes the dense vegetative cover that had previously protected the soil, making it more vulnerable to erosion, especially on steep slopes or coastal cliffs. Since knotweed suppresses the growth of native vegetation, its absence during winter can result in large areas of bare soil, increasing the risk of surface runoff, slippage, and further cliff degradation during the winter months until regrowth begins in spring.

Soil movement, including landslides or cliff collapses, can also facilitate the spread of Japanese Knotweed. Any soil or debris containing viable rhizome fragments must be treated as controlled waste under environmental legislation. The handling, transport, and disposal of such material are subject to strict regulations and can be extremely costly and logistically challenging. Recent cliff slides at Overstrand highlight the potential for knotweed-contaminated material to be mobilised, requiring careful management to prevent further spread.

Another important factor is the plant's tolerance to saline conditions. In the event of further cliff movement, or significant storms, there is a real risk that Japanese Knotweed could be moved by seawater and dispersed into coastal environments, where new plants may establish. This would not only create additional areas requiring management but could also constitute a breach of the Wildlife and Countryside Act 1981, which prohibits the planting or causing the spread of invasive species such as Japanese Knotweed in the wild.

Despite the significant challenges associated with managing this invasive species at the Site, such as difficult access, health and safety risks, and the dynamic nature of soft cliff systems, chemical control remains the most viable option. Foliar herbicide application is likely to be the most practical and effective initial treatment method and, once the vigorous growth has been suppressed, there may be potential to introduce stem injection techniques for more targeted control of any regrowth.

Given the steep terrain and restricted access, herbicide treatments could be applied using mobile elevated working platforms (MEWPs), either from the promenade or the cliff top, depending on the location of the infestation. Where appropriate and safe, rope access systems anchored at secure points may also be considered. These operations should be carried out by specialist contractors and must be supported by a detailed risk assessment to ensure safety and compliance with best practice.

The chemical control strategy could potentially be complemented with biological control through targeted grazing by goats in spring, provided challenges, such as issues with site access, fencing and impacts from poaching, are recognised and effectively managed, potentially as part of a community project.

A long-term, site-specific management plan that includes regular monitoring, legal compliance, and adaptive treatment strategies will be essential to control the spread of Japanese Knotweed and mitigate its environmental impact on the Overstrand cliffs.

The risk of cliff erosion to properties and community infrastructure in Overstrand is significant, and this needs to be a major consideration in deciding about the management approach. Intervention methods that cause further cliff instability, such as heavy machinery use, deep excavation, or vegetation removal, should be avoided or carefully controlled. On the other hand, there may be opportunities to select management approaches that contribute to temporary cliff stabilisation, thereby supporting multiple objectives, including ecological restoration and infrastructure protection.

It is also important to acknowledge that the dynamics of coastal erosion are complex and influenced by a variety of natural and human-related factors, including weather patterns, rising sea levels, and existing coastal defences. In this context, we recognise the potential need for a future project to address structural issues affecting parts of the Overstrand promenade. The relationship between this project and the measures required to manage Japanese knotweed may present both logistical and environmental challenges, as well as opportunities for coordinated planning. These connections will need to be carefully evaluated to ensure that the goals of coastal protection and invasive species management are achieved without compromising the stability or ecological value of the site.

6.2 Stakeholder Engagement and Community Awareness

Effective management of Japanese knotweed, particularly in publicly accessible and ecologically sensitive areas like Overstrand's coastal cliffs, requires more than technical interventions. Engaging local stakeholders, such as residents, landowners, visitors, and contractors, is vital to the long-term success of control measures and to minimise inadvertent spread. There may be potential to combine this with the Coastwise programme’s community engagement in relation to coastal change.

6.2.1 Public Awareness and Education

Given the location of the infestation adjacent to a popular promenade, raising public awareness is essential. Many members of the public may be unaware of the appearance, ecological risks, or legal implications associated with Japanese knotweed. Informing the public can:

- Encourage early reporting of sightings in other areas.
- Prevent unintentional spread via soil disturbance, plant handling, or illegal disposal.
- Improve community support for control operations that may temporarily limit access or alter site appearance.

Recommended Actions:

- Install informative signage at key access points explaining the nature of the knotweed problem, legal responsibilities, why treatment is being undertaken and how the public can help prevent spread.
- Distribute leaflets or digital material (e.g., via NNDC’s website or local community groups) outlining identification tips, reporting mechanisms, responsible behaviour around infested areas.
- Collaborate with local schools or conservation groups to deliver educational talks or field activities focused on invasive species and coastal ecology.

6.2.2 Stakeholder Coordination

Engagement should not be limited to the general public as coordination with specific stakeholders is equally important:

- Local landowners: collaborative action is crucial to prevent reinfestation.
- Contractors and maintenance personnel: must be trained in biosecurity protocols to avoid spread via contaminated machinery or soil.
- Local tourism operators or businesses: these stakeholders may have concerns about visual impact, site access, or public perception. Early communication can help mitigate negative responses and identify ways to maintain visitor satisfaction during control works.

Benefits of Engagement:

- Builds community trust and transparency.
- Reduces legal risk through due diligence.
- Enhances the effectiveness and sustainability of the management strategy.
- Provides a mechanism for feedback and adaptive improvement.

6.3 Monitoring and Cost Implications

6.3.1 Long-Term Monitoring Requirements

Japanese knotweed is notoriously difficult to fully eradicate due to its regenerative rhizome system. Therefore, any successful management strategy must incorporate a robust, long-term monitoring programme. Even after visible dieback, viable rhizome fragments can persist in the soil for years, potentially leading to regrowth under favourable conditions.

6.3.1.1 Recommended Monitoring Plan:

- Frequency: inspections should be carried out at least twice annually—once during peak growth (late summer) and again in spring—to detect early signs of regrowth.
- Duration: monitoring should continue for a minimum of five years after the final herbicide treatment, as recommended by best practice guidance (NNSS, 2018).
- Methods: visual surveys, photographic records, and drone-based imagery (where appropriate) can help track changes in infestation size and vegetation cover.
- Documentation: maintain a log of each monitoring visit, including GPS-tagged photos, treatment history, weather conditions, and any evidence of regrowth or new infestations.

Long-term monitoring should also include regular checks on biosecurity compliance, such as ensuring no soil movement from the treated area and verifying that access points are not contributing to inadvertent spread.

6.3.1.2 Cost Considerations

Managing Japanese knotweed—especially in challenging terrain like soft coastal cliffs—is resource-intensive. Costs will vary depending on the size of the infestation, chosen control method(s), site accessibility, and monitoring requirements.

Indicative cost categories to consider:

- Initial Survey and Mapping
- Herbicide Treatment:

    - Foliar spray
    - Stem injection.
- Number of treatments to consider typically, 2–3 per season for 3–5 years.
- Specialist contractor access (e.g. MEWPs, rope access) per deployment.
- Waste handling and removal.
- Monitoring and reporting over 5 years.
- Compile a total programme cost projection to facilitate effective financial and operational planning.

Cost Mitigation Strategies:

- Prioritise early action to control spread.
- Coordinate with landowners to share costs.
- Seek external funding through conservation grants or environmental programmes.
- Engage community groups for light-duty tasks to reduce contractor hours.

Together, these measures can help ensure effective control of Japanese knotweed in Overstrand while managing financial and operational burdens in a sustainable way.

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Appendix A

Figure 1 Site location

Figure 2 Non statutory designated sites

Figure 3 Statutory designated sites

Figure 1 Site Location

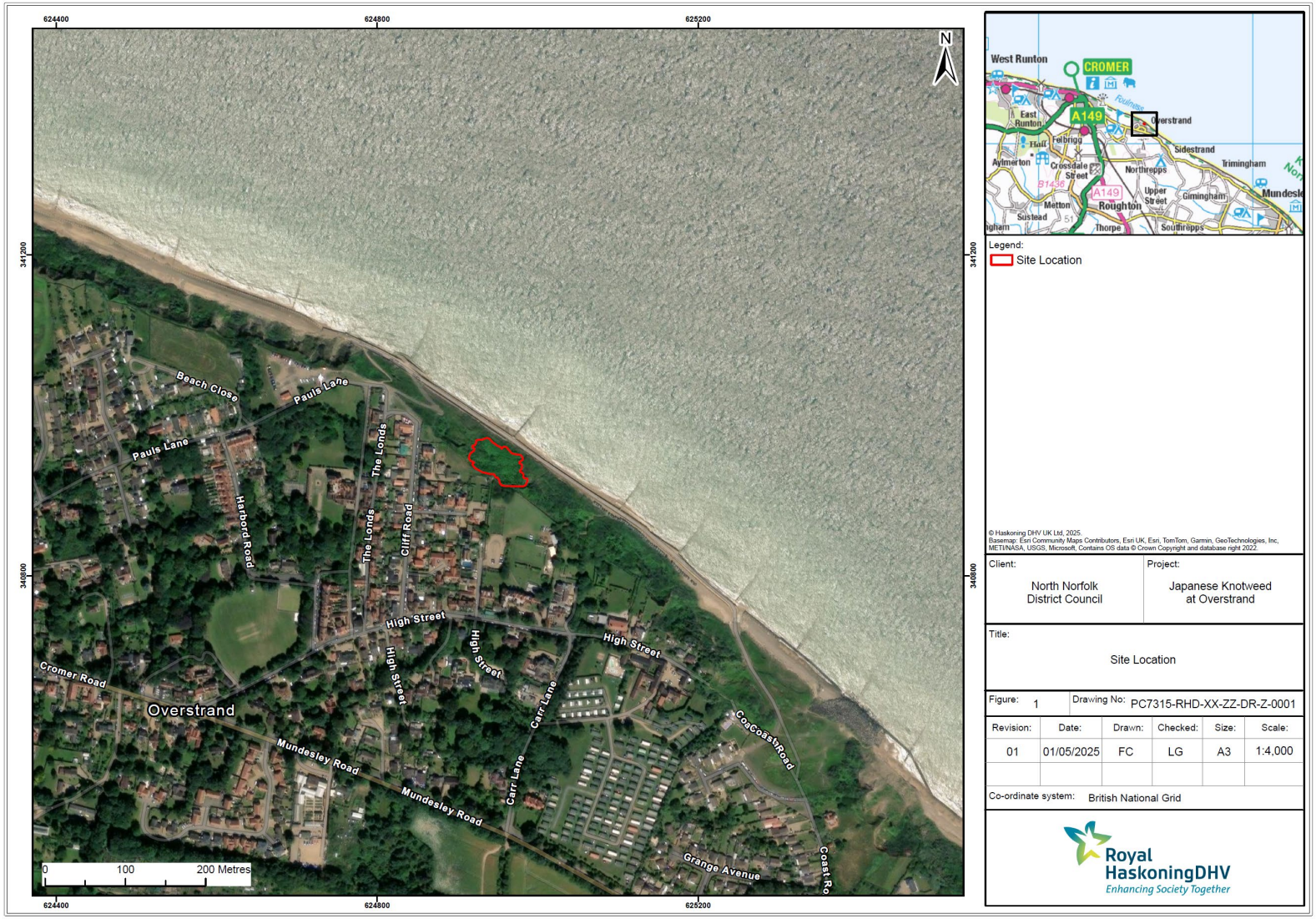

Figure 2 Non statutory designated sites

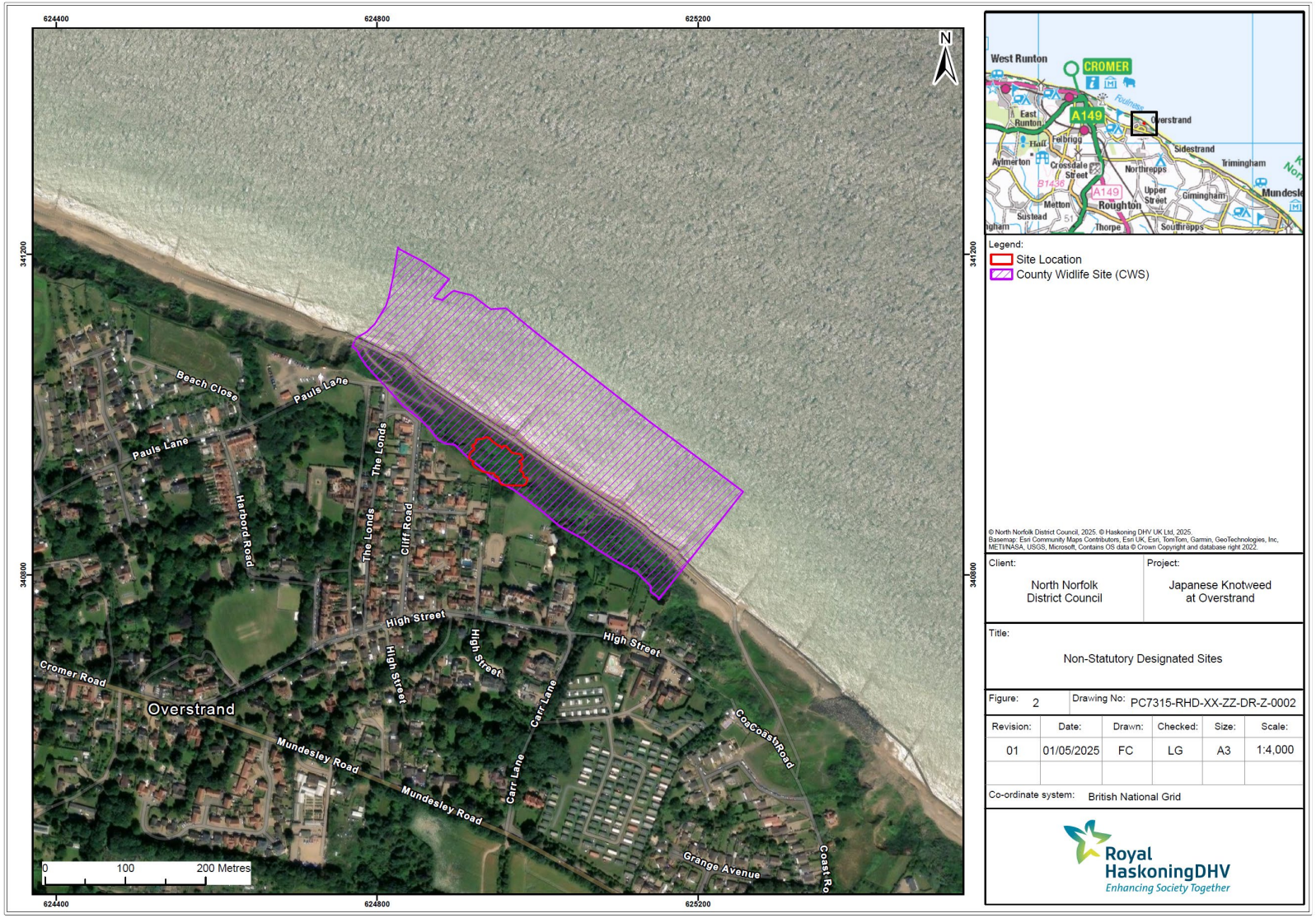

Figure 3 Statutory designated sites