Ymddiriedolaeth Natur Gogledd Cymru
North Wales Wildlife Trust

#NNF3 Garden Escapers! North West Wales Development Project

Evaluation Report

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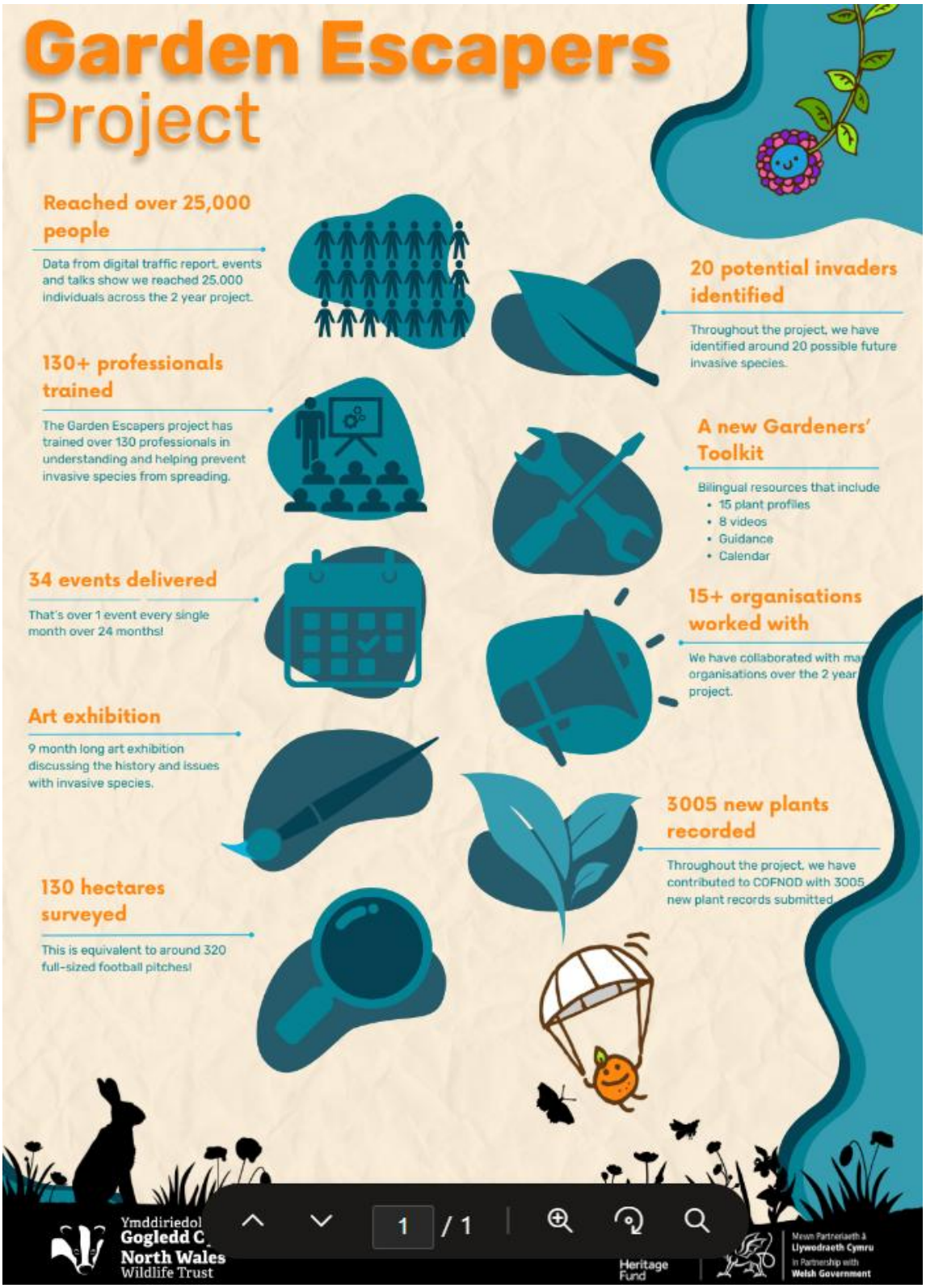
North Wales Wildlife Trust

Cronfa Treftadaeth Heritage Fund

Mewn Partneriaeth â Llywodraeth Cymru
In Partnership with Welsh Government

1. Summary


Garden Escapers Project
Reached over 25,000 people
Data from digital traffic report, events and talks show we reached 25,000 individuals across the 2 year project.
20 potential invaders identified
Throughout the project, we have identified around 20 possible future invasive species.
130+ professionals trained
The Garden Escapers project has trained over 130 professionals in understanding and helping prevent invasive species from spreading.
A new Gardeners' Toolkit
Bilingual resources that include
• 15 plant profiles
• 8 videos
• Guidance
• Calendar
34 events delivered
That's over 1 event every single month over 24 months!
15+ organisations worked with
We have collaborated with ma organisations over the 2 year project.
Art exhibition
9 month long art exhibition discussing the history and issues with invasive species.
3005 new plants recorded
Throughout the project, we have contributed to COFNOD with 3005 new plant records submitted.
130 hectares surveyed
This is equivalent to around 320 full-sized football pitches!
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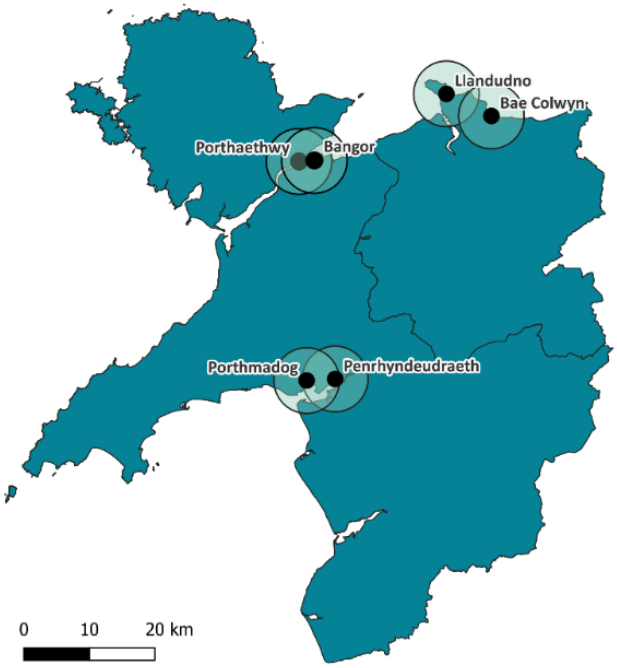
2. Introduction

Target 6 of the Global Biodiversity Framework highlights invasive species as a main threat to nature globally. In Wales, SoNaRR identifies invasive species as a cross-cutting theme and a direct driver of change affecting all ecosystems. Preventing invasive species is therefore key to enhancing the resilience of protected sites, their connectivity and the benefits they provide. In North West Wales—where towns, gardens and transport corridors sit alongside a dense network of designated and locally important sites—early action to prevent new introductions is an efficient way to reduce long-term ecological impacts and management costs.

This evaluation report summarises delivery and learning from the #NNF3 Garden Escapers! North West Wales Development Project, led by North Wales Wildlife Trust. The project explored how best to engage communities and key stakeholders to **prevent** invasive (and potentially invasive) plants escaping from gardens, focusing on Anglesey, Conwy and Gwynedd, with the following target areas: Menai Bridge and Bangor, Colwyn Bay and Llandudno, and Porthmadog and Penrhyndeudraeth (as shown below).



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The report brings together evidence from in-person events and training, the *Beyond the Boundary* multi-media exhibition, digital communications, and the development of the Gardeners' Toolkit. The report also captures the project's innovative analytical and field-survey approach to identifying current and future invasive plant risks to protected sites—producing invasive species risk scores, site reports and baseline records to support long-term monitoring and prioritised management—before concluding with reflections on legacy and challenges.

See Appendix B for the Monitoring and Evaluation Framework.

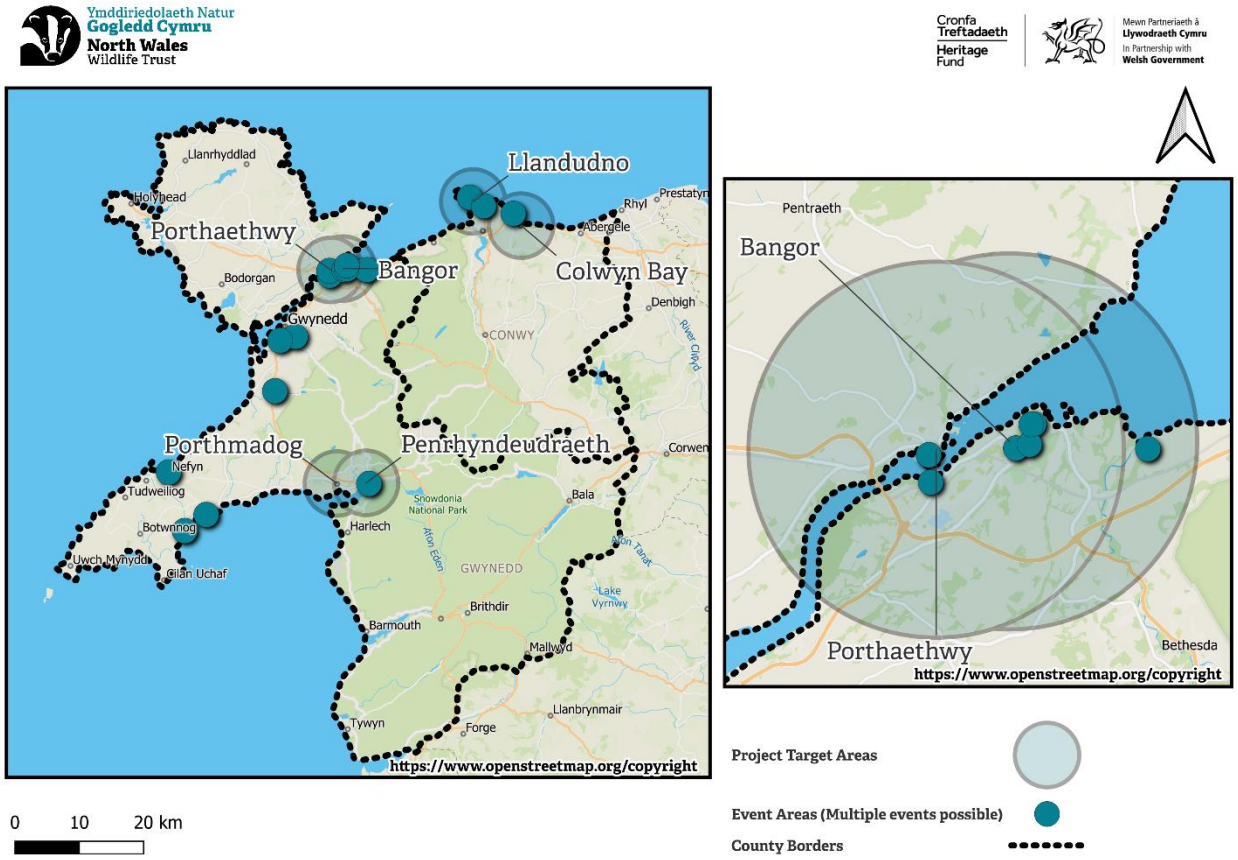
3. Garden Escapers engagement in numbers

3.1. Events

The project delivered **34 events** reaching **826 people** through:

- 16 local events (e.g. walks and talks) organised by NWWT and open to the public
- 13 outreach visits where NWWT staff visited a group of people (e.g. a school or community group) in a location where they themselves would naturally meet
- 2 onsite visits where a group of people (e.g. a school or community group) visit a NWWT Nature Reserve
- 3 training sessions delivered by project staff

The location of the events is shown on the next page.



Note that above map excludes the two events held outside of North Wales (one being involvement at a Biodiversity Day at the Senedd and one training session for Royal Horticultural Society staff) and an online webinar. Full details of the 34 events can be found in the Activity List tab of Appendix B, including the name of the **12 different groups** engaged with.

3.2. Beyond the Boundary exhibition

A thought-provoking multi-media exhibition was developed through the project, called ***Beyond the Boundary***. A key aim of this exhibition was to reach varied audiences, which were identified as: artists, historians, gardeners, environmentalists, Welsh language audiences and families. For example, to appeal to historians, the exhibition included historical artefacts such as herbarium specimens of invasive species loaned from Bangor University (see the on the left from the Spring 2025 issue of the NWWT magazine).

If you have some time to spare this spring, why not delve into the world of invasive species from distant lands? Our travelling exhibition, *Beyond the Boundary: A Case of Garden Escapers*, aims to highlight the problem of invasive species through a combination of history, art and environmentalism. Discover how they were brought across the sea by plant-hunters – and how their escape beyond garden boundaries has been impacting nature ever since!

Launching at Storiel in Bangor on 5 April, the exhibition will move to the Great Orme Country Park Visitor Centre in Llandudno in June, before finishing at Plas Glyn-y-Weddw near Pwllheli later this year. It will include a new sculpture by local artist Manon Awst, which explores the porous boundaries between gardens and wider, wilder habitats and will consist of two main features, one of which will sit on North Wales Wildlife Trust's own Gwaith Powdwr Nature Reserve, Penrhyndeudraeth.

Whatever venue you visit, access to the exhibition is free – with no booking required.

Find out more: **northwaleswildlifetrust.org.uk/garden-escapers**

The exhibition launched in April 2025 at Storiel (Bangor) with a recorded statement from Huw Irranca-Davies, Deputy First Minister and Cabinet Secretary for Climate Change and Rural Affairs. The exhibition moved to Visitor Centre at the Great Orme (Llandudno) before Oriel Plas Glyn-y-Weddw (Llanbedrog) to end in December 2025.

13 of the project events were delivered as part of the exhibition. In addition to the 826 people we engaged with through events, estimated visitor numbers[1] at the exhibition venues are: **Storiel = 4,805 people**; **Plas Glyn-y-Weddw = 3, 750 people**. Visitor numbers at the Great Orme Visitor Centre could not be estimated.

Feedback from exhibition visitors included: ***"Brilliant exhibition. As I am changing my garden layout I am thinking of native plants to replace invasive ones. Job well done NWWT."*** While feedback from visitors was overwhelmingly positive, with 100% of visitors who responded to being asked to rate their experience of the exhibition doing so as 'good' or 'excellent', there was one visitor who did not agree: ***"Basically a small room with a lot of wordy interpretation boards, two cases and a boulder with a video. Extremely disappointing."*** This demonstrates that trying creative and engaging ways of engaging audiences does not please everyone. The information panels encouraged visitors to take action in tackling invasive species in their

[1] These are estimated as visitor numbers at the venues while the exhibition was there. It is not possible to determine how many of these engaged with the exhibition directly.

gardens; **67% of visitors who responded to being asked if the exhibition inspired them to tackle invasive species said yes**.

A central component of this multi-media exhibition was the commissioning of a sculpture **by local artist Manon Awst**.

Feedback about the sculpture, in response to being asked via an online survey 'What thoughts or feelings does this sculpture provoke for you?' Included:

"Littering…..looks like an abandoned supermarket trolley!"

"It gave me a feeling of nature taking back it´s [sic] own place but it is heavy work to do so. Humans leave a trace as heavy as a large boulder and it is not easily done."

These mixed responses highlight the different ways art can be received and the importance of interpretation when increasing awareness of invasive species through creative means. More information about the exhibition, including more feedback from event participants and exhibition venues, can be found in Appendix C.

3.3. Digital reach including social media

Alongside in-person engagement through events, the project reached wider audiences through digital channels, including the project webpages, social media and email communications. Digital reach can be measured with impressions[2] and reach[3].

A focused period of online promotion was used to raise awareness of the Gardeners' Toolkit (more information in section 4) following its launch. During the dedicated promotion week in February, the Toolkit webpage received **780 page views**, with the highest single-day traffic occurring on 19 February. This peak aligned with the distribution of the Wild Weekly email newsletter and a coordinated social media push, indicating that audiences responded promptly to the messaging and accessed the online resources during this period.

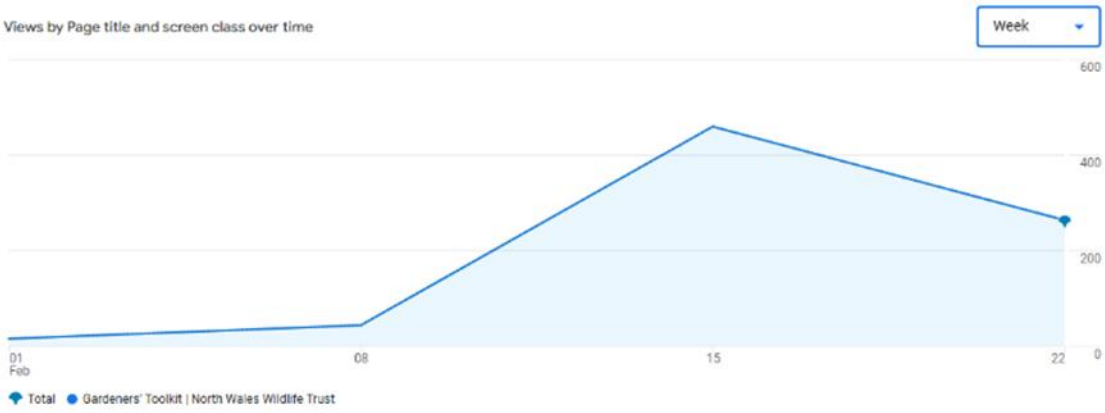


Fig. 6: Gardeners' Toolkit (English Language) weekly webpage views from the start of February to the end of February.

The project also tested different social media formats to understand how audiences engaged with content. A pilot Instagram Reel was published in February and performed more strongly than traditional static posts. The Reel reached **866 accounts (individual users)** and generated **1,347 video views**, compared with an average reach of approximately 614 accounts for standard in-feed posts. It also produced 82 interactions, including likes, comments and saves, which was higher than typical engagement levels seen on static posts.

[2] Impressions refer to the total number of times a piece of content is displayed on users' screens. This includes multiple views from the same user (impressions measure visibility).

[3] Reach refers to the number of unique users who have seen the content. Each person is only counted once, regardless of how many times they view the content (reach measures audience size).

Fig. 2: Views for Garden Escapers 'pilot' reel on Instagram.

Facebook continued to provide the largest digital audience for the project. During 2024, Facebook posts promoting Garden Escapers content generated approximately **1,800 link clicks**, alongside around 550 reactions, comments and shares. These figures show that users were not only seeing the content but also selecting links to access further information and project resources. Facebook activity was particularly effective at reaching older audiences, who are a key group for practical gardening guidance.

Overall, the digital activity supported the project by increasing awareness of Garden Escapers resources, directing users to the Gardeners' Toolkit, and complementing in-person engagement by extending the project's reach beyond physical events. See Appendix D for more information.

4. The Gardeners' Toolkit

A new multi-media Gardeners' Toolkit was developed through the project, to improve engagement with non-professional gardeners and garden owners. The aim of the Toolkit was to:

1) To raise awareness amongst gardeners of invasive and potentially invasive ornamental plants.
2) To encourage and enable gardeners to tackle invasive species in their garden to stop their spread.

To ensure it met these aims, workshops – example shown below - were held with gardeners to hear what they wanted the Toolkit to look like (see Appendix E).

The Toolkit[4] contains the following online resources:

- 15 plant profiles - 10 recognised invasive species and 5 which might become invasive in future
- Sheets to explain terminology and legislation
- Guidance on tackling invasive species in the garden
- A print-out calendar
- Video series containing 16 videos in Welsh and English:
    - Welcome video
    - Focus species
    - Weeds vs invasive species
    - Expert accounts and volunteer stories

The calendar has also been included in the Spring 2026 issue of the NWWT Magazine, **reaching around 10,000 people**.

[4] Which can be accessed here: www.northwaleswildlifetrust.org.uk/gardeners-toolkit

5. Invasive species as threats to protected sites into the future

This project adopted an innovative way to identifying invasive species which pose a future threat to protected sites. This was done in three parts:

5.1. Part 1 (Scoping Report) and Part 2 (Site Reports)

The Scoping Report involved a geospatial data analysis was conducted across three target areas:

- Bae Colwyn & Llandudno
- Bangor & Porthaethwy
- Penrhyndeudraeth & Porthmadog

Data sources included the Botanical Society of Britain and Ireland (BSBI), Cofnod and the NBN Atlas. The study mapped non-native plant records, habitat networks, and potential introduction sources, such as urban areas, gardens, parks and allotments. Results were compiled into site-specific reports and risk scores to guide future field survey. Key findings:

- **Over 22,000 records of non-native vascular plants were analysed**
- Several protected sites were identified as at high risk due to proximity to urban areas, presence of non-native plants and connectivity to non-native plants via habitat networks
- Small urban sites (e.g. Upper Dingle Woods LNR) had high risk scores, suggesting significant invasive species threats
- Coastal and marine sites (e.g. Y Fenai a Bae Conwy SAC) showed suppressed risk scores due to their large size and unthreatened marine habitats, though specific coastal areas remain vulnerable.

Through this Scoping Report, innovative measure was developed for risk of current or future invasion from non-native plants at protected sites, referred to as **normalised potential INNS (npINNS) risk scores.** Because the Sites Reports exceeds 300 pages, the npINNS risk scores also offer a quick way to summarise the analysis. The below table shows that despite key taxa[5] not being found at many sites (with 100% confidence) through the Scoping Report (in this case in the Bae Colwyn and Llandudno target area) they are highly connected to protected sites.

[5] These were based on Jones et al. (2024), which identified these taxa (and others) as being priorities at a GB level for their invasive potential to be explored.

Taxon	Number of sites	Number of connecting networks
Alchemilla mollis	2	102
Anemone hupehensis × *vitifolia* = *A.* × *hybrida*	0	1
Arum italicum subsp. *italicum*	0	67
Erigeron karvinskianus	4	92
Euphorbia amygdaloides subsp. *robbiae*	0	3
Euphorbia cyparissias	0	0
Geranium nodosum	0	0
Houttuynia cordata	0	0
Leycesteria formosa	3	108
Lysimachia ciliata	0	18
Pilosella aurantiaca	0	83
Soleirolia soleirolii	2	119
Symphyotrichum novi-belgii agg.	0	22
Verbena bonariensis	0	49
Vinca major	3	284

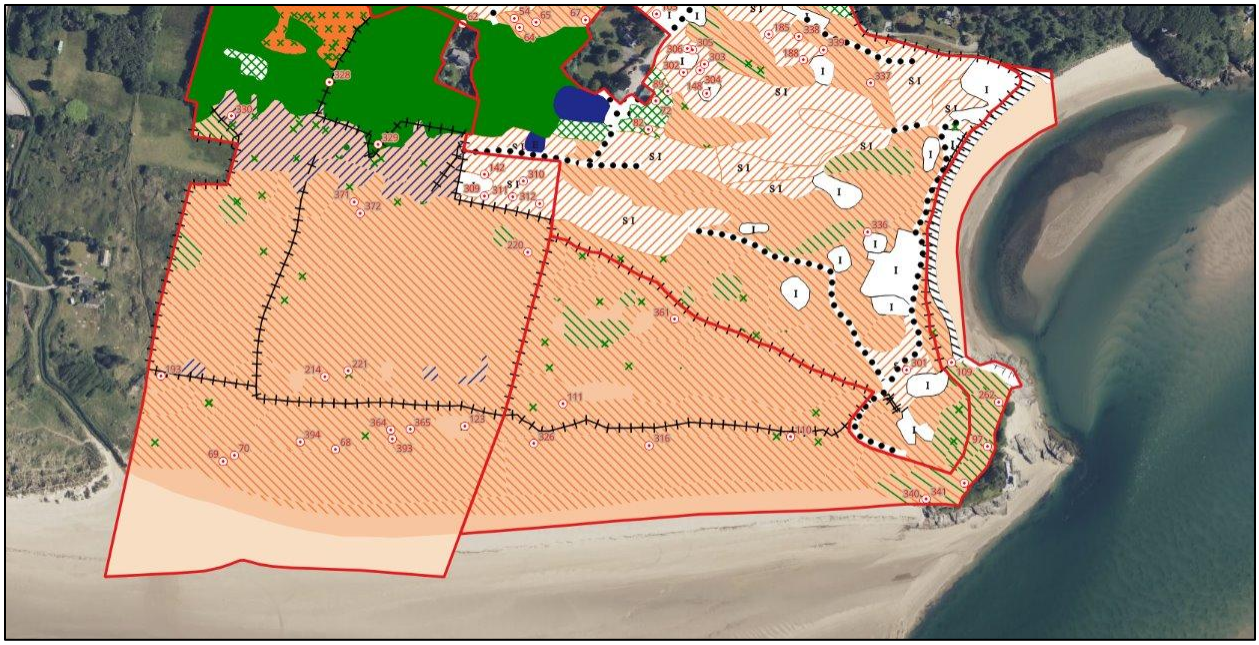
Based on the Scoping Report, Site Reports were produced for **48 protected sites or NWWT Nature Reserves** within the target areas. Each report included data on:

- Number of non-native vascular plants with records intersecting the site and each buffer
- Non-native vascular plants that have definitely been recorded from the site
- Non-native vascular plants connected by habitat networks
- Probable residences
- Greenspace sources of non-native plants
- Built up areas
- Garden centres and nurseries

A npINNS score was also calculated for each protected site and NWWT Nature Reserve. See Appendices F and G for more information.

5.2. Part 3 - Survey Report

A programme of **field surveys at eight protected sites and NWWT Reserves** was carried out in 2025 to test predictions made in Parts 1 and 2, record non-native plants present, and provide baseline data for future monitoring and management. **A total of 136.99 ha was surveyed and mapped to Phase 1 habitats, with 3,005 new plant records.** The records have been shared with the Local Environmental Records Centre (Cofnod) so the data can be used beyond the project. An example of the Phase 1 data for Morfa Bychan is shown below.



Key findings from the field surveys include:

- Non-native vascular plants were recorded across all the surveyed protected sites, though the extent and diversity varied widely between sites
- Some protected sites contained only scattered individual non-native vascular plants, while others supported well-established populations that may threaten native habitats if left unmanaged
- Overall, the scoping study predictions proved useful: sites highlighted as higher risk often did show greater numbers of non-native species
- However, non-native vascular plants were also found in some lower-scoring sites, underlining the importance of ground-truthing predictions with field evidence
- The survey results provide an important baseline that can be built on through repeat monitoring, helping to detect change and inform management over time.

The non-native vascular plants identified during the field survey were assessed against set criteria to identify **twenty-three[6] potentially invasive non-native vascular plants, such as Himalayan honeysuckle** (see below).

[6] Around three of these can be disregarded because of being widely regarded as invasive species already (depending on the course).

These are proposed as candidates to add to the list of key potentially invasive plants used by the Garden Escapers project. See Appendix H for more information. The list includes key taxa identified in section 4.6.

5.3. The importance of this innovative approach

This approach gives a much clearer picture of non-native vascular plant pressures in the region. The combined approach demonstrates how predictive tools and on-the-ground surveys can work hand in hand to guide priorities. The approach was specifically developed in a way which could be readily applied elsewhere over much larger areas.

This has resulted in an evidence-based list of 1) protected sites in the project target area at the highest risk of invasive species impacts; and 2) potentially invasive species. This work is being disseminated to key stakeholders, including the GB Non-Native Species Secretariat, so that it can inform preventative efforts and help ensure that conservation resources are focused where they can make the greatest difference, protecting the ecological integrity of protected sites and supporting wider efforts to tackle current and potential invasive non-native vascular plant species in North Wales and elsewhere in the UK.

5.4. Citizen Science data

Parts 1 and 2 used data collected by Citizen Scientists, through another innovative approach; NWWT collaborated with Crowdsorsa – to pilot mapping target species through a mobile game. This was innovative because participants earned £1 for each record by video recording the sighting. This financial incentive to recording invasive species in not known to have been piloted in the UK before. The pilot engaged with **12 participants** who collectively submitted **603 sightings**. An example of a participant submitting a sighting of one target species, Mexican fleabane (*Erigeron karvinskianus*) is shown below.

See Appendix I for more information. No NNF budget was used for this pilot, beyond covering project staff time.

6. Project legacy

Ensuring project legacy has been embedded into its delivery from the outset. The following steps have been taken:

- The Gardeners' Toolkit has been specifically designed as an online resource on the NWWT website, which can be maintained beyond the project by NWWT staff
- A 'bank' of bilingual social media posts have been prepared which can be used by NWWT and key stakeholders to promote the Toolkit into the future
- The calendar has been included in the Spring 2026 issue of the NWWT Magazine, reaching around 10,000 people (after the project ended)
- All materials in the Gardeners' Toolkit have linked to existing resources, mainly the Be Plant Wise Campaign. This is coordinated by the GB Non-Native Species Secretariat
- NWWT blogs cover the exhibition as a permanent resource
- The sculpture at the NWWT Gwaith Powdwr Nature Reserve (as part of the exhibition) remains as a permanent thought-provoking and creative legacy

- The records collected through the work on invasive species as threats to protected sites into the future have already been shared with the Local Environmental Records Centre (Cofnod) so the data can be used beyond the project
- Project staff continue to engage with key stakeholders to promote project deliverables, including with The Wildlife Trusts to see how the Toolkit can be used beyond North Wales

7. Challenges

7.1. Welsh language

Another challenge has been reaching Welsh language speaking communities. Despite project materials being fully bilingual, and project staff either being fluent or confident learners, reaching Welsh language speaking communities was challenging. An example of this is social media and digital reach, see Appendix D. Every effort was made to address this challenge, including delivering a guided walk for Cymdeithas Edward Llwyd, a Welsh language natural history organisation.

7.2. Lack of responses to consultation

A consultation as part of the Scoping Report received no responses. It is not clear how many consultees followed the link to the consultation from the email, though one NRW staff member said that they found the form very difficult to use and ran out of time. This limited feedback suggests that the consultation app was badly designed, but it is difficult to identify major improvements. It was designed to simplify the consultation as much as possible, with a focus on useability and reducing the work required to respond. The feedback may relate to problems with understanding the way the app worked in evidently limited time. It may also be due to the difficulty summarising such a large volume of data in a succinct and easy to understand manner, and the commitment required to review the linked scoping report and site summaries for more detail.

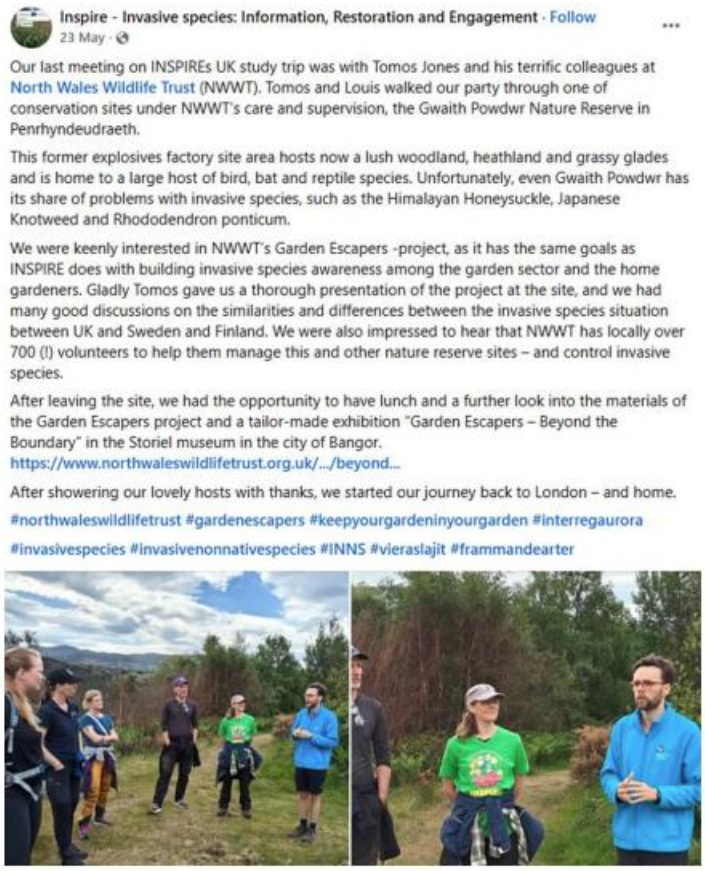
Nevertheless, small improvements could have been made. Notably, it would have been useful to include a location and boundary map for each protected site, as consultees may have struggled to quickly identify the sites they were responsible for. It was also not possible within the time available to alert consultees when selecting a different site before submitting their response, which risked losing unsaved responses. However, it is not clear that either of these improvements would have increased the success of the consultation.

The main reason for the lack of responses is most likely to have been a mix of existing consultee workloads and bad timing. Many of the consultees would have increased workloads during the consultation period, as they approached the end of the Financial Year. Responding to the consultation was optional and would have been low priority, so was less likely to be completed. Undertaking the consultation at a less busy time might have led to some responses, but this was not possible within the project timetable.

7.3. Building parentships

The project engaged with key stakeholders, as identified in the Communication Plan including through training sessions such as for Royal Horticultural Society staff (see below).

Through the project, **130+ professionals** were trained. The project has also shared experiences beyond North Wales, such as hosting the INSPIRE project, aimed at tackling invasive species through public engagement, restoration, and digital tools led by Finnish and Swedish partners. See a testimonial from them, shared on their social media channel, on the right.



Inspire - Invasive species: Information, Restoration and Engagement · Follow
23 May ·

Our last meeting on INSPIREs UK study trip was with Tomos Jones and his terrific colleagues at North Wales Wildlife Trust (NWWT). Tomos and Louis walked our party through one of conservation sites under NWWT's care and supervision, the Gwaith Powdwr Nature Reserve in Penrhyndeudraeth.

This former explosives factory site area hosts now a lush woodland, heathland and grassy glades and is home to a large host of bird, bat and reptile species. Unfortunately, even Gwaith Powdwr has its share of problems with invasive species, such as the Himalayan Honeysuckle, Japanese Knotweed and Rhododendron ponticum.

We were keenly interested in NWWT's Garden Escapers -project, as it has the same goals as INSPIRE does with building invasive species awareness among the garden sector and the home gardeners. Gladly Tomos gave us a thorough presentation of the project at the site, and we had many good discussions on the similarities and differences between the invasive species situation between UK and Sweden and Finland. We were also impressed to hear that NWWT has locally over 700 (!) volunteers to help them manage this and other nature reserve sites – and control invasive species.

After leaving the site, we had the opportunity to have lunch and a further look into the materials of the Garden Escapers project and a tailor-made exhibition "Garden Escapers – Beyond the Boundary" in the Storiel museum in the city of Bangor.
https://www.northwaleswildlifetrust.org.uk/.../beyond...

After showering our lovely hosts with thanks, we started our journey back to London – and home.

#northwaleswildlifetrust #gardenescapers #keepyourgardeninyourgarden #interregaurora #invasivespecies #invasivenonnativespecies #INNS #vieraslajit #frammandearter

The project also engaged with key stakeholders through a co-design workshop in November 2024. This workshop involved **26 key stakeholders** representing a wide range of potential partners including garden centres. The aim of the workshop was to co-design the next phase of the Garden Escapers project. The co-design workshop shaped a Project Enquiry and EOI for NNF5 involving key partners including: Treborth Botanic Garden, Amgueddfa Cymru and the National Botanic Garden of Wales. See a photo from the workshop below. See Appendix J for a workshop report and feedback from stakeholders.

The proposed next phase of the Garden Escapers project would be a novel pan-Wales project offers a holistic approach to preventing potentially invasive species (i.e. target species) threatening protected sites by incorporating every stage of the invasion process. Work packages (WPs) based on co-design workshop with key stakeholders:

WP1 Prevention - of target species escaping gardens into protected sites. This is the most impactful project promoting Be Plant Wise (BPW) in Wales via new gardeners' toolkit.

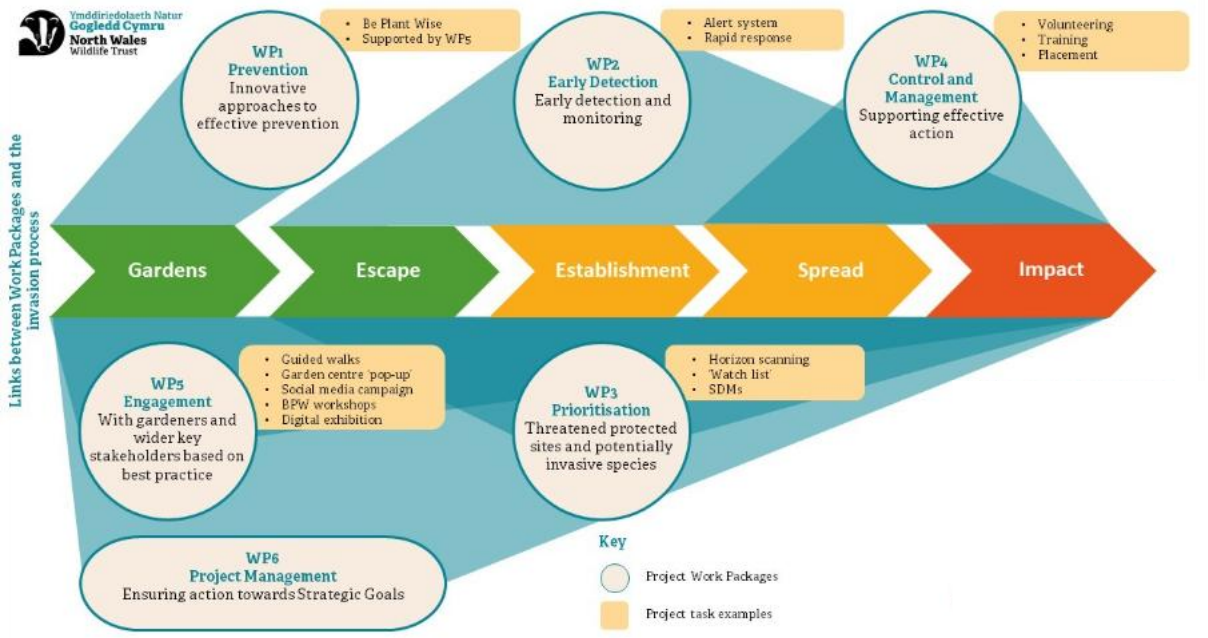
WP2 Early Detection - alert system for new records of target species (WP3) in protected sites enabling rapid response. Aligns with Action 4 of the GB Horticulture PAP.

WP3 Prioritisation - 'watch list' of target species in need of preventative action via expert-led Wales horizon scanning workshop and species distribution modelling. Support revision of WBP Wales Priority Species for Action. Development of invasive species risk scores to prioritise protected sites for WP4.

WP4 Control and Management - of target species at priority protected sites (with high invasive species risk scores) across Wales. This will involve volunteers.

WP5 Engagement - 1) promote BPW across Wales in conjunction with Amgueddfa Cymru; 2) digitise exhibition to reach under-served groups; and 3) installation of educational panels e.g. at the National Botanic Garden of Wales (Waun Las NNR).

This would build on the current development project (NM-23-01089) by: i) utilising th invasive species risk scores; ii) informing development of a species 'watch list'; iii) gaining best practice for managing target species; and iv) enhancing engagement. A graphical summary is included below.



The Project Enquiry and EOI were unsuccessful which has made partnership development a challenge. Efforts continue to secure funding for the next phase of Garden Escapers.

8. Conclusion

The #NNF3 Garden Escapers! North West Wales Development Project demonstrates the value of a prevention-first approach to invasive species. It is the only project of its kind in Wales - and arguably in Great Britain - that focuses specifically on engaging gardeners and key stakeholders to stop ornamental plants escaping from gardens into the wider countryside, where they can threaten protected sites and increase long-term management costs.

The project combined community engagement with creative interpretation and practical guidance: 34 events reached 826 people; the *Beyond the Boundary* exhibition extended that reach substantially through thousands of visitors across multiple venues; and targeted digital communications directed audiences to new resources. The Gardeners' Toolkit provides a lasting, bilingual set of materials including plant profiles, practical guidance, a seasonal calendar and a video series that can continue to support behaviour change beyond the project timeframe.

The project also trialled an innovative evidence-led approach to anticipating risk. By combining large-scale analysis of non-native plant records with habitat connectivity and potential introduction pathways, and then ground-truthing predictions through field surveys, the work produced npINNS risk scores, detailed site reports, and a baseline dataset shared with Cofnod. Together, these outputs help partners target effort where it is most needed, identify potentially invasive species of emerging concern, and provide a foundation for repeat monitoring and prioritised management.

Delivery also highlighted important learning. Reaching Welsh-speaking audiences remained challenging despite fully bilingual materials and dedicated efforts, and the scoping consultation received no responses, likely reflecting timing and workload pressures as well as usability barriers. These lessons should inform future delivery, alongside continued partnership development. The co-design work undertaken through the project sets out a clear route to scale impact through a pan-Wales programme that links prevention, early detection, prioritisation, management and engagement. Building on the Toolkit, the exhibition legacy, and the new risk and survey evidence, Garden Escapers is well placed to support a coordinated approach that reduces new introductions and strengthens the resilience of protected sites.