

Report of: Conservation Team, Nature Recovery

Subject: Nature Networks (Round 2) Pwyth mewn Pryd - Stitch in Time Project

Purpose of the report

To provide Members with information, evaluation and feedback on the Authority's Nature Networks (Round 2) Pwyth mewn Pryd - Stitch in Time Project which was delivered between June 2023 and March 2025.

This project supported the Authority with its ongoing work to control invasive non-native plants in the Park focused on Himalayan Balsam and Japanese Knotweed. The project supported continuation of taking a catchment-based approach to this work.

The INNS Project Coordinator will provide a presentation on the project and report during the Operational Review Committee.

Background Documentation:

- Nature Networks (Round 2) Pwyth mewn Pryd - Stitch in Time, Final Evaluation Report, April 2025

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**Heritage
Fund**



Nature Networks (Round 2) 22_11

Pwyth mewn Pryd - Stitch in Time Project

Final Evaluation Report: 16 April 2025



Photograph Credit: Matthew Tebbutt

Castlemartin Corse: The Friends of the National Park working with seeding balsam

Nature Networks Fund (Round 2) – Pwyth mewn Pryd / Stitch in Time

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Client: Pembrokeshire Coast National Park Authority (PCNPA)

The Pembrokeshire Coast National Park was designated in 1952 following the implementation of the National Parks and Access to the Countryside Act 1949. This beautiful area of Pembrokeshire requires special care to conserve it for future generations. As a result of the Environment Act 1995, the Pembrokeshire Coast National Park Authority was established in 1996. The Pembrokeshire Coast National Park Authority has two statutory purposes:

- to conserve and enhance the natural beauty, wildlife and cultural heritage of the National Park and
- to promote opportunities for public enjoyment and understanding of its special qualities.

In pursuing these two purposes, the Authority also has a duty to foster the economic and social well-being of communities living within the Park.

Funding: This project received funding through The Nature Networks Fund (round two), which is delivered by the Heritage Fund, on behalf of the Welsh Government and in partnership with Natural Resources Wales. The Nature Networks Fund (Round 2) (NNF2), aims to strengthen the resilience of Wales' network of protected land and marine sites, supporting nature's recovery while actively encouraging community engagement.

Acknowledgements: Browne Consultancy Services would like to express sincere gratitude to the participants in this evaluation for their valuable time and feedback provided during interviews, surveys and written feedback, which has informed this report.

Contents

1. Introduction	..	..	..	..	..	..	..	..	4
2. Overview of the Stitch in Time Project	..	..	..	..	..	..	..	..	5
2.1 Background and Context	..	..	..	..	..	..	..	..	5
3. Evaluation Methodology	..	..	..	..	..	..	..	..	8
3.1. Aim of the Evaluation	..	..	..	..	..	..	..	..	8
3.2 The Evaluation Approach	..	..	..	..	..	..	..	..	8
3.3. The Evaluation Framework	..	..	..	..	..	..	..	..	9
3.3.1 Desktop Analysis of Secondary Evidence	..	..	..	..	..	..	..	..	9
3.3.2. Development of Logic Models	..	..	..	..	..	..	..	..	9
3.3.3 Primary Evidence Collection	..	..	..	..	..	..	..	..	9
3.3.4 Data Analysis	..	..	..	..	..	..	..	..	10
3.3.5 Evaluation Challenges and Limitations	..	..	..	..	..	..	..	..	10
4. Results	..	..	..	..	..	..	..	..	12
4.1 Delivering the Project Aims and Objectives	..	..	..	..	..	..	..	..	12
4.2 Project Management	..	..	..	..	..	..	..	..	16
4.3 Achievements and Successes of the Project Management	..	..	..	..	..	..	..	..	17
4.4 Delivery Challenges and Limitations	..	..	..	..	..	..	..	..	18
5. Lessons Learnt and Recommendations	..	..	..	..	..	..	..	..	19

Appendices

Appendix A: Draft Logic Model

Appendix B: Evaluation Questioning Framework

Appendix C: Summary of Delivery Against The National Lottery Heritage Fund Approved Purposes

Appendix D: Post-Project Management Plan (Draft Monitoring and Management Plan)

1. Introduction:

Browne Consultancy Services was commissioned by the Pembrokeshire Coast National Parks Authority (PCNPA) to carry out an external evaluation of the Stitch in Time project funded under the Nature Networks Fund (Round 2) on 10 March 2023. The evaluation to which this report relates was conducted from 12 June 2023 to 26 March 2025.

The evaluation assessed the activities and outputs achieved against the project's initial aims and objectives (The Nature Networks Fund “approved purposes”). Our report captures the successes and achievements, as well as the challenges and learning points, with recommendations for implementation in future projects.

The structure of the report is as follows:

Overview of the Stitch in Time Project. This section outlines the background and context of the Stitch in Time project, including the need for the project. It briefly describes the key achievements to date in meeting those objectives and progress towards the outcomes associated with those actions.

Evaluation Methodology: The evaluation methodology is described, including the type of evaluation undertaken, the activities used to gather the evidence presented, and the challenges and limitations encountered.

Results: This section presents the evaluation's findings and covers the effectiveness of the project's implementation. It reports on the extent to which the objectives outlined in the project proposal were met, highlighting the key activities, outputs, and outcomes achieved, as well as the delivery limitations and challenges encountered.

Lessons Learnt and Recommendations: This section outlines the lessons learnt, as reported by the evaluation participants, which inform the recommendations.

2. Overview of the Stitch in Time Project

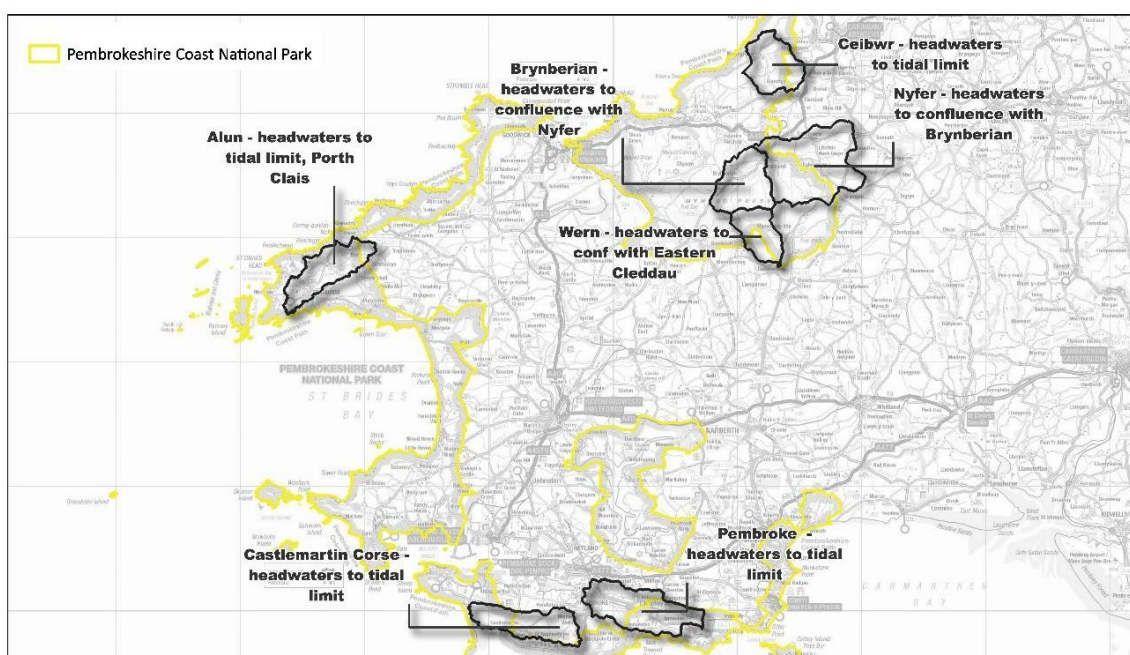
2.1. Background and Context

Invasive non-native plant species, such as Himalayan balsam and Japanese knotweed, are drivers of ecological degradation and significantly impact the ecology, environment, economy, and well-being of people in communities across Wales.

They exert significant pressure on ecosystems at a landscape scale, affecting the ecological quality of ecosystem connectivity and nature network features, as well as habitats such as water, woodland, riparian corridors, and hedgerows, in addition to impacting designated sites and Section 7 habitats.

The six catchments selected in the NNF2 Stitch in Time project all contain H. balsam, either already present in designated sites or threatening to 'invade' designated sites. The project's target areas contain infestations at modest levels, which are currently manageable.

Management of H. balsam and J. knotweed is crucial for developing sustainable ecosystems that safeguard biodiversity. Managing and controlling these invasive plant species helps create resilient ecosystems that can adapt to climate change and provide better ecosystem services to communities.



Stitch in Time Nature Networks

Overview of Project Catchments

Creuwyd gan / Created by: Philip Barlow (13/10/2022)

Graddfa / Scale: 1:329,354

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Figure 1.1. Map of the project catchments included within the NNF2.

Why was the Project needed?

There is a need to take timely, sustainable and cost-effective action. Acting now to manage and control H. balsam and J. knotweed avoids increased costs associated with tackling larger infestations in the future.

Timely action also avoids further degradation of the ecological resilience of the project's target catchment areas. With a tried and tested strategy in place, this project aimed to accelerate the work on invasive non-native species within multiple river catchments in the National Park, safeguarding designated sites and their supporting ecosystems and habitats that are under threat.

The project also needed to build on the community interest generated during previous projects, and there was a need to act in harnessing and directing the energy and enthusiasm of volunteers to take action and make a difference in their landscape.

Invasive non-native species (INNS) have a significant impact on the environment, economy, and well-being, causing the extinction of native species, reducing biodiversity, and altering habitats. INNS management is crucial to creating sustainable, biodiverse, resilient ecosystems that can adapt to climate change.

It was only a matter of time before the infestation at Castlemartin Corse catchment reached the wetland, a designated feature of the Site of Special Scientific Interest (SSSI). Due to the terrain, it would be difficult and expensive (if not impossible) to tackle the resulting infestation. This catchment is also adjacent to Freshwater West, which has multiple SSSI and SAC designations, as well as Broomhill Burrows at Freshwater West sand dunes (SAC).

The project employed a top-down approach, starting at the top of catchments to minimise reinfestation or degradation of sites further downstream, thereby ensuring more resilient connectivity corridors for species. H. balsam, left unmanaged, will disperse over a landscape, taking advantage of connectivity features such as water, deciduous woodland, and hedges. It is likely H. balsam is present within Gupton SSSI. Therefore, the project's work was essential to prevent it from getting further out of control.

At Ceibwr, H. balsam has reached the designated site and is present on coastal slopes within the SSSI and along the Coast Path National Trail. Once it reaches the unmanaged coast, the potential for spread is enormous, affecting coastal and wetland habitats. Any future cliff-based control would require rope access and be expensive.

The River Alun infestation is confined to the river corridor just below the northwest Pembrokeshire Commons SAC, which is a mix of wetland habitats.

The main successes and achievements of the project delivery are highlighted below:

- **Solidifying the Top-Down Approach:** The project successfully demonstrated that the top-down approach to catchment management is effective. This was evident in areas like the Saint David's catchment and the Afon Alun, where the project protected significant wetland landscapes from H. balsam infestation.
- **Protecting Important Areas:** The project successfully protected designated areas (SSSIs and important habitats) from infestation, which was a primary goal. This included maintaining vigilance and resources to prevent the return of invasive plant species.
- **Maintaining Relationships with Landowners:** Despite challenges, the project maintained good relationships with landowners, which was crucial for ongoing and future work. This involved collaborating with a diverse range of landowners and managing varying levels of engagement.
- **Volunteer and Community Engagement:** The project received positive feedback from volunteers, who appreciated the social aspect of volunteering and felt a sense of community and accomplishment. This also contributed to the well-being of the local communities.
- **Building Capacity for Future Work:** The project identified additional opportunities for conservation work and highlighted the potential for expanding the scope of future projects. This included integrating invasive species management with other conservation efforts.
- **Economic and Social Benefits:** The project provided economic benefits by supporting local contractors and creating job opportunities, including commissioning the final project evaluation from a specialist evaluation consultancy based in South West Wales. It also had social benefits, as it engaged volunteers and improved the local environment.

3. Evaluation Method

Our evaluation is based on a comprehensive review of secondary and primary data collected during the evaluation contract period.

3.1 Aim of the Evaluation

The evaluation assessed how the Stitch in Time Project performed against its forecasted objectives and outputs, sharing any lessons learnt for future application.

Our report offers insights from the delivery team, rangers from the Rivers Trust and the National Trust, volunteers and a contractor as to what worked well during the project and where improvements could be made. It was required to capture the successes, challenges, and learning points for the target audience of this report, which was aimed at the delivery team and funders.

3.2 The Evaluation Approach

The type of evaluation required was determined to be a **summative process evaluation**. Process evaluations are the foundation for understanding whether a project was successful and how it can be improved. A summative process evaluation aims to “sum up” the results and effects of implementation at the end of the project and funding period.

The evaluation required an applied and intensive approach to provide learning applicable to improve delivery. Our process evaluation focused on the working mechanisms of the Stitch in Time project and assessed its implementation effectiveness to identify areas for improvement, rollout, or transfer to other projects.

An evaluation approach was devised based on five stages (stage boundaries):

Table 3.2.1 The Staged Approach

THE STAGED APPROACH
Stage 1: Inception, action planning and guiding evaluation techniques.
Stage 2: Collation and review of documentary and other secondary evidence within the project, e.g. the original funding bid and quarterly progress reports.
Stage 3: Collection and analysis of primary evidence; 1:1 Interviews, written feedback from the delivery team, volunteers and other organisations collaborating on the project.
Stage 4: Collation of the findings from primary and secondary evidence and analysis.
Stage 5: Reporting.

3.3 Evaluation Framework

3.3.1 Desktop Analysis of Secondary Evidence

The first stage in the evaluation involved conducting a desktop analysis of the secondary evidence documentation associated with the project. This included reviewing the initial NNF2 Fund application award, delivery plan, and quarterly progress reports.

3.3.2. Development of Logic Models

To enable the evaluation of how achievements would be identified, a Logic Model for the project was drafted. A logic model is a systematic and visual representation of how the project was expected to work. It outlines the logical connections between the resources invested, the activities carried out, the outputs produced, and the intended outcomes or impacts achieved in relation to the issues the project aimed to address. A copy of the draft Logic Model can be found in Appendix A.



Figure 3.3.2.1 A Logic Model

3.3.3 Primary Evidence Collection

To facilitate understanding of the project's implementation and progress, regular online catch-up meetings and email updates were conducted with the INNS Project Coordinator and Candace Browne, the Lead Evaluation Consultant of Browne Consultancy Services.

Semi-structured Interviews and Feedback Forms

A framework of evaluation questions (see Appendix B) was developed to address the evaluation objectives. Six representatives from the PCNPA team and one representative from the Rivers Trust were interviewed online using Microsoft Teams in January 2025.

Written feedback was also received from the National Trust's North Pembrokeshire ranger and the PCNPA volunteering assistant.

One contractor working to deliver H. balsam control and clearing access paths for the project was interviewed over the telephone.

The questions focused on the following:

- The expectations, achievements, successes and challenges of the project.
- Reflection on how the delivery mechanism could be improved.

- The lessons learnt to help ensure long-term sustainability for future collaborative projects.
- The opportunities to expand upon the work demonstrated through the project.

3.3.4 Data Analysis

Analysing data to summarise it and identify patterns is an essential part of every evaluation. An analysis of the interview evidence and written feedback form was carried out in two steps.

Step 1: Preparation: The interview recordings were transcribed, reviewed, and organised along with the feedback forms according to each of the nine questions.

Step 2: Categorisation: The responses were categorised under the evaluation's key themes, i.e., expectations, achievements, successes, challenges, opportunities, lessons learnt and recommendations for improvement to determine common trends and different perspectives.

3.3.5 Evaluation Challenges and Limitations

• **Scope Constraints:** The evaluation was designed to focus on conducting a summative process evaluation. It will take time beyond this project's life to realise its impact. Therefore, it may be worth considering a supplementary impact evaluation to assess the project's impacts (both short-term, medium-term, and long-term). It would be necessary for the core delivery team, partners and stakeholders to have the time and resources to reflect on the impacts that have started to emerge during this phase of the Stitch in Time project. Additional resources will be needed to co-design and co-develop an impact framework, enabling an Impact Evaluation to take place at the appropriate time and gather the necessary evidence to assess the project's overall impact.

• **Project Logic and Program Theory:** Although the evaluator was able to draft a logic model independently, using secondary document evidence, it would be beneficial for future projects to scope and develop a Theory of Change, which is co-produced and developed by project staff, partners, and key stakeholders. A Theory of Change provides a structured framework for understanding the pathways to change, guiding the design, implementation, and evaluation of programs and projects aimed at addressing complex problems or issues.

Although a Theory of Change can take time to develop, it is a highly useful evaluation tool that is increasingly being requested by funders to include in proposals and to demonstrate in evaluations. A Theory of Change builds on the Logic Model and additionally considers expectations, assumptions, and risks at the outset of project delivery, updating them throughout.

• **Timing of the Evaluation Report:** At the evaluation inception meeting, the evaluation consultant requested an additional month beyond the project end date to ensure sufficient time for reviewing the final project data and evidence. This was requested in early 2024, but no response was received from the funders. We would also have liked to have time to design and research case illustrations (or studies) to “bring the project to life” in our report, but this was

limited due to the need to submit the report before the project end date, whilst the project team was collating final project monitoring and progress evidence.

- **Capacity Constraints:** The project delivery team continued to work hard to deliver outputs and write their final progress reports during our final evaluation reporting stage. We received the final project monitoring data on 24 March 2025. This impacted our ability to provide the level of detail in our final report that we would have liked, as the funding requirements for the Final Evaluation Report necessitated its submission with the final claim before the project's end date of 31 March.

As mentioned above, it is usual practice to have additional time after a project ends to reflect on the final data and review all the final evidence. However, unfortunately, due to these constraints, the evaluator was required to react and adapt quickly to changing and challenging timelines, which put considerable strain on capacity during the reporting stage. It is incredibly difficult to conduct a summative evaluation before a project ends.

- **Evaluation Budget Constraints:** As mentioned above, trying to construct a project's Theory of Change (ToC) retrospectively within the evaluation budget and the project teams' capacity and timeline proved too challenging without a developed ToC to build on. A ToC supports impact evaluations, and it may take time to realise the project's emerging impacts after the project ends.

Additionally, economic data were not available at the time of writing. A supplementary economic evaluation could be considered to expand on the narrative evidence gathered during this process evaluation, supporting the reporting of economic and social value for money or value for future investment. An economic evaluation is often an extension of an impact evaluation, providing a framework for relating costs to project outcomes.

An economic evaluation asks questions such as:

- What was the actual cost of the interventions?
- Did the outcome(s) achieved justify the investment of resources?
- Was this project the most efficient way of realising the desired outcome(s), or could the same outcome(s) have been achieved at a lower cost through an alternative course of action?
- How should future resources be spent?

An economic evaluation will provide additional evidence to expand on this process evaluation report, presenting the project's value for money or value for investment to funders and stakeholders more effectively. Monitoring data to support the economic evaluation were not available to the evaluator at the time of writing, before the project's end date, and required impact and economic evidence and insights from the project team. These resources were beyond the scope of this evaluation contract.

4. Results

This section of the report addresses questions surrounding the success of activities and considers the challenges and limitations that may have affected delivery. It offers insights from the project delivery team, volunteers, and other organisational team members (e.g., 1 National Trust Ranger and 1 Rivers Trust Project Officer), who were selected because they supported the delivery of H. balsam control, management, and monitoring.

4.1. Delivering the Project Aims and Objectives

This section of the report examines the project outputs and outcomes against the original project aims and objectives, drawing on both primary and secondary evidence, as well as progress reporting. It then presents the project's challenges and limitations, which may have impacted delivery.

The INNS management priorities within the National Park are guided by the Pembrokeshire Coast National Park Management plan. As part of the Pembrokeshire Nature Recovery Plan, the Pembrokeshire Local Nature Partnership produced an INNS Action Plan to guide action within the county. This project delivered key actions for priority species identified within the plan.

The methodology for the top-down catchment approach to H. balsam management, as well as the project's unique 'monitoring and maintenance exit phase,' was developed and refined through previous pilot projects.

Working on whole or part catchment at a strategic level, the project had clearly defined targets for land area included in the project, catchment status or site status maps, detailing status (In progress, present, monitoring and maintenance) and area in hectares, number of landowners engaged, and volunteer time contributed, including the numbers of people engaged and involved in the project.

External communications were supported by PCNPA's Communication Team, which promoted and shared updates and project outcomes with press releases sent to local publications, such as Coast to Coast.

A summary of the delivery of the project against the project's NN2 fund's approved purposes is provided in Appendix C (taken from the final project progress report provided on 24 March 2025).

Output and Outcomes: Management and Monitoring of INNS for Nature Networks

The removal of H. Balsam fosters ecological resilience across landscapes, creating true nature networks with greater biological diversity and a larger area of habitats in favourable condition, which are better connected.

Within the habitats directly affected by H. balsam, the recovery of native vegetation, including bryophytes, grasses, and flowering plants, was seen. This increased diversity will have

positive knock-on effects on wider food webs, resulting in greater diversity of invertebrates, including ground beetles and pollinators. Top predators, such as bats, freshwater fish, and otters, will consequently find these areas rich in food, thereby restoring the diversity of native species and supporting the recovery of naturally functioning, resilient ecosystems.

Significant H. balsam reduction in target catchments was reported, which will enhance resilience and connectivity, essential for species to cope with and adapt to climate change. The project activities directly supported the improvement in the condition of designated sites affected and will safeguard their future against invasive plant infestations.

One output of the project was the production of a document outlining the PCNPA's approach to maintaining and building upon the outcomes of catchment-based invasive non-native species (INNS) management under this Nature Networks fund (Round 2) (See Appendix D). The document includes the policy context, principles of the catchment approach, an overview of catchment status as of March 2025, key actions required for sustaining outcomes, and a backstop position in case of funding cuts. The final project monitoring data are presented in detail in this report (Appendix D).

Action focused on practical control and removal of Himalayan balsam and Japanese knotweed, aiming to reduce cover in six target catchments. The primary learning outcome has been that an initial high-resource, intensive control phase, using volunteers, National Park staff, and contractors, targeting infestations from the top of sites or catchments and progressing down, allows for a swift reduction in the Himalayan balsam seed bank. The first two seasons of control are the most resource heavy. Then, the resources required to maintain a near-eradicated status at a site level are significantly reduced from the initial high-intensity control phase. This strategy can be applied to any invasive annual plant species. A post-grant monitoring and maintenance phase acknowledges the requirement to commit a much lower input of resources in future seasons (see Appendix D).

Community Engagement and Volunteering

PCNPA is continually growing its volunteer network and, during this project, sought to engage more people with the natural and cultural heritage of the National Park and its special qualities. The project invited individuals of all ages and from diverse backgrounds to engage in their work. As part of the volunteering and by attending events, communities and volunteers learnt about the importance of the project's work.

The project engaged, empowered, and equipped local people with the skills to take action to protect and take a place-based approach to their local environment. Attracting **1682 volunteer hours**, with a **cash worth of £33,650**, plus delivering **84 community engagement events**.

H. balsam management is an ideal group activity and is suited to new volunteers. People engaged in volunteering reported that they had increased awareness of invasive species, an improved ability to identify them, and an increase in their nature knowledge, as well as the satisfaction of seeing the efficacy of the time spent. Team spirit, coping with inclement weather

and increased awareness of the effects of climate change were also highlighted. Volunteers reported that they became more aware of H. balsam and gained practical experience in managing INNS, leading to improvements in management practices and biosecurity measures among those involved.



HIMALAYAN BALSAM PULLING

HELP PROTECT OUR PARK

Join us to help control non-native invasive species and promote floral diversity across Pembrokeshire Coast National Park.

We are hosting two public balsam pulling days for everyone to enjoy.

No knowledge or experience necessary. Families welcome.

"Going back to places and seeing the success is a real motivator for me. Knowing it is a big job, a big problem, but that we are getting it under control."
(Granville Watson, Volunteer)

Did you know...

- Each plant can reach 3 metres tall and generate 800 seeds
- Balsam acts as a distraction to pollinators, reducing pollination of other plants in the area

22 JUL 6 AUG

Merivale Car Park, St Davids
Kingsmill Wood, Castlemartin



CODI JAC Y NEIDIWR

HELPWCH I DDIUGELU EIN PARC

Dewch atom i helpu i reoli rhywogaethau anffordrol goresgynol a hybu amrywiaeth blodau ar draws Parc Cenedlaethol Arfordir Penfro.

Rydyn ni'n cynnal dau ddiwrnod cyhoeddus i godi Jac y Neidiwr i bawb eu mwynhau.

Does dim angen unrhyw wybodaeth na phrofiad. Mae croeso i deuluoedd.

"Mae mynd yn ôl i lefydd a gweld y llwyddiant yn ysgogiad go iawn i mi. Gwybod ei bod hi'n dasg fawr, yn broblem fawr, and ein bod yn rheoli pethau."
(Granville Watson, Gwirfoddolwr)

Oeddech chi'n gwybod...

- Mae pob planhigyn yn gallu tyfu cyn uched â 3 metr a chynhyrchu 800 o hadau
- Mae Jac y Neidiwr yn tynnu sylw pryfed peillio, sy'n lleihau'r peillio ar gyfer planhigion eraill yn yr ardal

22 Gorffennaf 6 Awst

Maes Parcia Merivale, Tyddewi
Coad Kingsmill, Castlemartin

REGISTER YOUR ATTENDANCE
@volunteering@pembrokeshirecoast.org.uk

COFRESTRWCH OS YDYCH AM DDOD
@volunteering@pembrokeshirecoast.org.uk

The final project monitoring data for the community engagement events and volunteering contributions during the project delivery is presented in the table below:

Table 4.1.2.1. Final Community Engagement Events and Volunteer hours contributed.

	2023	2024	Total
Total Number of events	36	48	84
Total number of volunteer hours contributed	837.5	845	1682.5
Total number of individuals	110	143	N/A
cash worth (hours x£20)	£16,750	£16,900	£33,650
number of cancelled events due to weather	5	5	10

The results of the volunteer survey highlighted that through volunteering on the project, people had a better understanding of the impact of H. balsam and how it can be monitored and removed. Volunteers were supported to contribute their time and were equipped with the knowledge, skills and confidence to tackle H. balsam.

Volunteers felt that their involvement had contributed to the project's conservation efforts, as highlighted below in some of the responses captured from the Microsoft Forms Volunteer Survey:

- *"It is impressive how effective the action has been on regrowth."*
- *"It has been worthwhile. In the areas where there has been sustained effort over a number of years, the results are very visible."*
- *"The difference we have made, along with the contractor's work, has been significant. We have 'pushed' back the Balsom from large areas of the site (Kingsmill Woods). Whilst there still remains lots to do, it does feel like we are slowly getting control over further areas."*
- *"It has certainly helped to control the problem with H. Balsam as some areas are now clear, some are almost clear, but there is still a lot to do."*
- *"I think that as a group - Friends of Pembrokeshire Coast National Park - we have made a huge impact in the reduction of Himalayan Balsam in the areas where we have been focusing our efforts. Regular weekly fortnightly sessions have kept the balsam down, and we can see areas that were once densely covered now flourishing with other native plants."*

Training and support, as well as expenses, were provided for volunteers so that skills and income were not a barrier to participation. Volunteers involved in the project also reported developing new skills, including the use of equipment such as a brush cutter, monitoring wildlife, and first aid training. One volunteer reported using their first aid training in their local community.

- *"I got to do an excellent first aid course twice. This has not been used while volunteering but has been used on a few occasions in the remote village where I live. "*

The figure below illustrates the benefits that volunteers reported as part of their experience on the project, as well as their likelihood of recommending volunteering to others.

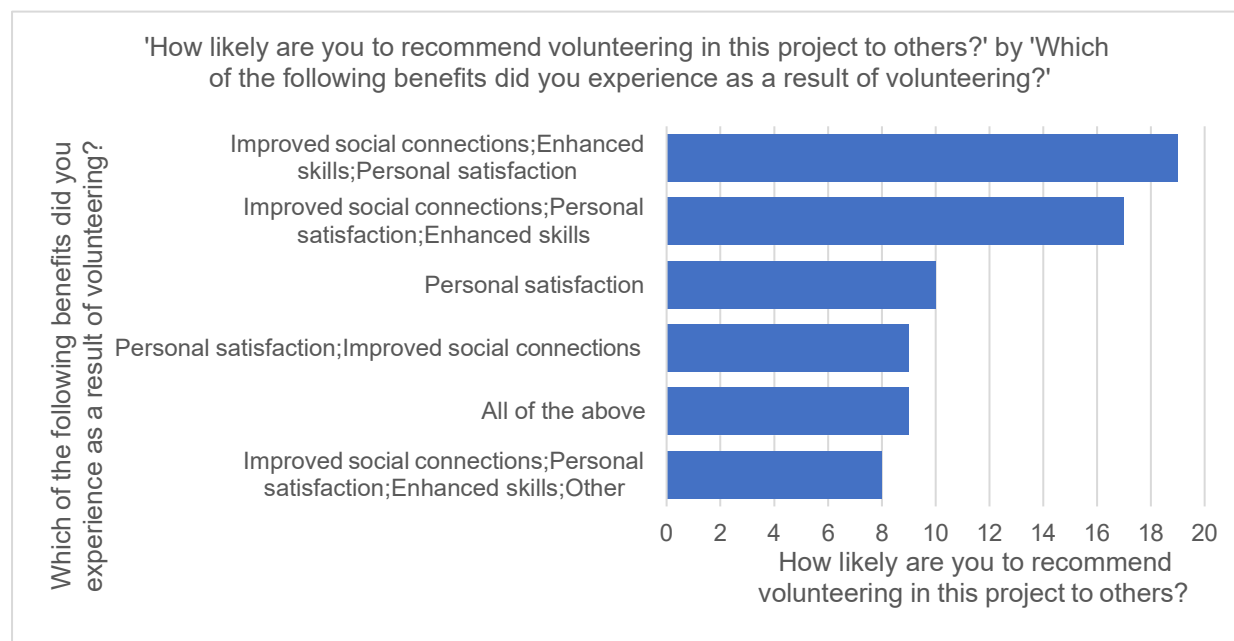


Figure 4.1.2.1. The data insights show that volunteers who experienced improved social connections, enhanced skills, and personal satisfaction are most likely to recommend the project to others.

Communities across Pembrokeshire are aware of the negative impacts associated with non-native invasive plant species. The project identified local communities and/or action groups that expressed a desire to become involved and make a difference; however, the scale and complexity of the task necessitated leadership, planning, and resources to implement a sustainable control effort.

A significant outcome of this project was to engage with a range of volunteers and support them in tackling *H. balsam*. Through engagement, the project volunteers were equipped with the knowledge, skills, and confidence to tackle the target INNS. These are transferable skills that can be applied elsewhere in communities affected by INNS.

4.2. Project Management

The project was delivered by the Pembrokeshire Coast National Park Authority's (PCNPA) Nature Recovery Team, which has considerable expertise in delivering nature conservation projects and engaging with landowners, as well as volunteers and the community. The team works closely with the Pembrokeshire Local Nature Partnership and the wider National Park and will be able to share lessons from delivering this project across Wales and the UK.

A project coordinator was employed to lead and coordinate volunteers, community groups, contractors, staff, and landowners in implementing a proven 'top-down' river catchment approach to removing and controlling invasive non-native species (INNS).

The INNS coordinator possesses a breadth of knowledge and expertise, having been involved with the project for over 10 years. Starting as an apprentice in 2014 and taking on the project part-time in 2015, and then full-time in 2018. He was responsible for tendering and appointing contractors for capital works, as well as liaising with landowners, Natural Resources Wales, and other relevant organisations. The INNS project coordinator also produced monitoring plans for the catchments, managed risk and budgets and delivered quarterly progress reports to funders and the external evaluation consultant.

Additionally, a project manager oversaw the project's progress, and the following teams from PCNPA were involved: Finance, the Volunteering Team, the Communications Team, the Ranger Team, and the Warden Team. All PCNPA staff have considerable experience in their respective areas and have ensured the successful delivery of the project.

4.3 Achievements and Successes of the Project Management

Feedback from the interviews, questionnaires and volunteer surveys reported the following key achievements and successes of the project management:

- **Successful Outcomes:** It was widely acknowledged that the project had been well-managed and had led to successful delivery and outcomes. There was a general sense of accomplishment in meeting deadlines and overall progress.
- **Dedicated INNS Project Coordinator:** Employing a dedicated staff member to champion the importance of controlling invasive species was reported as a significant success of the project. There was high praise and regard for the efforts of the INNS Project Coordinator, including appreciation for his wealth of knowledge and expertise, as well as the opportunity to shadow him, which was described as very useful.

Evaluation interview participants emphasised the INNS Project Coordinator's ability to build relationships with landowners and contractors, which was key to the project's success. It was also mentioned that the coordinator had developed a model for efficiently delivering the project, using machinery for initial control in heavy *H. balsam*-infested areas and following up with volunteer hand-pulling for maintenance.

- **Collaborative Efforts:** The project maintained strong relationships with landowners, contractors, volunteers and other organisations (e.g., The West Wales Rivers Trust). This collaboration was essential for ongoing access and management of the land.
- **Adaptability:** The project demonstrated adaptability in its approach, utilising bog mats to mitigate wet weather challenges and adjusting strategies according to landowner permissions.

- **Contractor Training:** Contractors were trained to ensure they understood the methods for controlling invasive species, including biosecurity and could, as a result, take on dedicated areas and work independently.
- **Community Involvement:** The project offered a substantial number of volunteering opportunities to support the project, which facilitated the practical removal of invasive species and provided upskilling opportunities for community volunteers.
- **Monitoring and Maintenance:** Continuous monitoring and maintenance were crucial to prevent the resurgence of invasive species. This included regular site visits and checks to ensure that previously controlled areas remained free of infestation.

Overall, the feedback on the effectiveness of the project management and delivery underscores the complexity of project management, emphasising the need for thorough planning, effective communication, and adaptability to achieve successful outcomes. It is essential that funders also recognise that projects evolve from the initial application for funds, with regular reviews of what is working well, adapting to incorporate lessons learnt during the delivery timeframe.

4.4 Delivery Challenges and Limitations

It was reported during feedback that the project faced challenges and limitations, which are summarised below:

- **Landowner Consents:** One of the biggest challenges reported was obtaining written permission/consents with third parties (landowners and managers) to undertake the work needed to ensure the success of the project's top-down catchment approach to H. balsam control. This requirement led to the withdrawal of some sites from the project, where it was not possible to obtain written consents.
- **Resource Allocation:** The project faced difficulties in resource allocation, particularly in terms of staff capacity to obtain land registry details and the necessary written consents over large and multiple catchments. The need for more personnel to assist the INNS Project Coordinator with the resources needed to obtain formal licenses or written permissions was highlighted.
- **Terrain and Accessibility:** The challenging terrain of the sites made it difficult to conduct thorough monitoring and control of invasive species. The sites were often overgrown with large, tussocky grasses, brambles, and willow, making it difficult to access and work efficiently. This also limited the ability to involve volunteers in certain areas due to safety concerns.
- **Weather Conditions:** Wet weather posed significant challenges, leading to equipment getting stuck and broken, as well as disagreements with contractors and landowners about when work could be conducted. The use of bog mats was introduced as a mitigation strategy and has been recommended for other projects.

- **Volunteer Engagement:** Maintaining volunteer enthusiasm and interest proved challenging, especially when the work involved repetitive tasks such as balsam pulling. The need to mix up the work to keep volunteers engaged was emphasised.
- **Monitoring and Maintenance:** Continuous monitoring and maintenance were crucial to prevent the resurgence of invasive species. However, the project struggled to have enough personnel to conduct regular site visits and invasive species checks.
- **Administrative Burden:** The administrative burden of reporting and claiming through the online portal was time-consuming. The portal was not particularly user-friendly, requiring individual typing and attachment of individual invoices rather than allowing the upload of a folder of supporting documents, which would have been more time efficient.
- **Funding and Sustainability:** The short-term nature of funding streams was problematic, as invasive species projects require long-term commitment and resources. The need for more sustainable funding to ensure ongoing control and management was highlighted.

5. Lessons Learnt and Recommendations

This section of the report provides a comprehensive overview of the lessons learnt and recommendations from the Stitch in Time project. The key points are presented below:

Lessons Learnt:

- **Consents and Permissions:** Obtaining formal licenses or written permission/consents was incredibly time-consuming, causing delays in delivery, and was not often practical, i.e. land registry and contact details were unknown, landowners didn't have access to email and/or had a low response to emailing back signed consents. This often led to the INNS Coordinator needing to visit landowners' door-to-door and requesting or chasing up signed consent/permissions face-to-face. This placed considerable strain on the dedicated INNS Coordinator's resources and capacity.

It was also reported that there was a worry that this formalised approach to gain written consents would have a detrimental effect on the trusted relationship the INNS Coordinator had built with landowners over the last 10 years.

- **Resource Allocation:** Additional personnel were required for H. balsam control, monitoring, and maintenance. Managing multiple catchments and maintaining ongoing monitoring proved challenging for the one dedicated INNS Coordinator and the small team of rangers with other work commitments.
- **Monitoring and Maintenance:** Continuous monitoring and maintenance are crucial to prevent the resurgence of invasive species. Future projects should ensure that sufficient personnel are dedicated to regular site visits and checks.

- **Community and Economic Impact:** The project positively impacted the local economy by supporting small contractors and providing volunteer opportunities. This also included the social value of volunteer work and its contribution to community well-being.

Recommendations:

- **Consents and Permissions:** This project realised the complexities, practicalities, challenges, and risks of obtaining written consents in catchment-scale and landscape-scale projects. Steps have been taken to draft a formal agreement to obtain written consents for future project phases. Additional support and resources are needed to maintain relationships with landowners, and to gain written permission to mitigate the risks that may impact successful delivery in the future.

- **Resource Allocation:** Future projects should consider allocating additional staff resources or hiring seasonal assistants to assist the INNS Coordinator.

- **Administrative Burden:** Advocate for more user-friendly reporting systems to funders.

- **Landowner Perceptions:** Consider resources to undertake a survey to gather landowner views or perceptions of INNS to support an evidence base for future funding and a landowner ambassador program or peer-peer support that will build capacity.

- **Community Impact:** Highlight the positive impact on the local economy by supporting small contractors and providing volunteer opportunities. It may be worth considering creative methods to gain an understanding of community perceptions of INNS and the work the PCNPA is undertaking through projects like Stitch in Time in future projects.

- **Public Engagement and Volunteer Events:** Improve the promotion, recruitment, and coordination of public volunteering days. Suggestions included adding QR codes and URL links to bilingual posters for sign-ups to streamline pre-event and post-event communications.

- **Impact and Economic Evaluations:** Consider resources to assess the project's emerging impacts (short-term, medium-term, and long-term) and review its economic value for money or value for investment, which will also support the rationale for future projects. A Theory of Change and a Monitoring and Evaluation Framework would be useful tools to scope this level of evaluative work. However, funding and, hence, budgets are often limited to undertake this level of research and evaluation.

Appendix A: Logic Model – Stitch in Time Pilot Project Drafted April 2024*

ISSUES: Problem/Challenge the project is expected to address	INPUTS: Inputs needed for the project to take place	ACTIVITIES: Activities and actions to take place as a result of the inputs	OUTPUTS: Key quantifiable deliverables resulting from the project activities	OUTCOMES: Early consequential changes expected from the outputs and deliverables	IMPACTS: Longer-term consequential changes to meet the longer-term vision for successfully addressing the project 'issues'
• Fragmented landscapes less resilient to change • Biodiversity is in decline due to non-native invasive plant species Himalayan balsam and Japanese knotweed. • Productive farmland is being lost due to the presence of these species • High cost of INNS control • Lack of strategy to control and manage INNS • Lack of resources for landowners to coordinate • Lack of collaboration	• Nature Networks Fund £ • Project Officer (Full-time) • Volunteers • Local Action Groups • Contractors • Training Provider • Communications Team • PPE • Tools for cutting and clearing H. Balsam and scrub, dead J. Knotweed • Herbicide for Japanese knotweed control	• Gain consent for work on or near designated sites • Himalayan balsam control throughout growing season • Vegetation and scrub control and maintenance for access to Himalayan balsam • Japanese knotweed control • Monitoring using fix point photography and GIS catchment maps • Wider surveys for target species • Volunteer recording project for H. balsam and J. knotweed along rail infrastructure S.	• 1682.5 volunteer work hours equating to £33,650 of volunteer resource • 84 Events organised and delivered. • 66 instances of providing one-to-one advice • 82.22ha of Himalayan balsam In Progress of control plus monitored and maintained at near eradicated state • 2023- 1579 Japanese Knotweed stems injected : 2024- 1246 stems injected - 2825 total number of J. knotweed stems injected with herbicide • Fix point photography provided within quarterly report to demonstrate visual change	• Consents received from NRW permitting cutting on or near designated sites and for permitting herbicide use to treat J. knotweed on designated sites and near watercourses • Easier access to H. balsam and J. knotweed control areas, which are maintained • H. balsam seed bank reduced / eliminated swiftly • J. knotweed stands reduced • Germination of native flora where H. Balsam and J. knotweed is in progress of control	• New skills are applied post project • Increased resilience through landscape connectivity networks • Increased biodiversity through the germination of native flora impact on other species bats, pollinators • Productive Farmland is not lost to H. balsam and J. knotweed • Costs are reduced by continual program of management over time. • Strategy Framework provides a resource for coordinated and collaborative approach for future replication and roll-out to other areas

			• 9 Catchment status Maps providing a visual		
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• Lack of knowledge and expertise	• Toolkit produced under the previous Sustainable Stitch in Time project (2022)	Pembrokeshire-shelved due to tech difficulties • Training courses identified for volunteers, landowners, staff • Events and evaluation of events • Communications, press releases and social media • Republish the Toolkit	overview of catchment status and area included in control, monitoring and present mapped • 1 press release each season • 1 press release launching the project • 1 press release of project update • 2 Social Media posts (how to get in touch with the project and how to volunteer) • 1 Final Evaluation Report	• Increase in awareness and participation in the project • Individuals contacted the project for advice, more information and took part in volunteering events • PCNPA staff, landowner, volunteers, contractors have gained experience, knowledge and understanding of practical control and management methods • New skills applied • Increase in data/records for targeted species presented as GIS mapped outputs and survey reports • Articles published • Engagement through Social Media platforms • Project success, failures and learning evaluated	• Delivery against national and local strategies, plans and policies including those of PCNPA
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Appendix B: Questioning Framework

Stitch in Time Evaluation Interview and Feedback Form Questions – Delivery Team

The questions below will act as a semi-structured guide during your interview and are provided beforehand to allow time for reflection. Your responses will be used for the final evaluation of the Stitch in Time (SiT) project report, publications and other means of disseminating the findings from this evaluation and for designing future studies and projects.

- 1. Please tell me about yourself (your name, role and involvement in the project).**
- 2. What did you hope to achieve from being involved with this project?**
- 3. What do you feel are the main successes of the SiT project?**
- 4. Did anything happen that you didn't expect to happen (good and bad), and why did you think that was?**
- 5. What were the main challenges with delivering the project, and how did you meet them?**
- 6. What could have been done differently, and what lessons have been learnt to help design and develop future projects?**
- 7. Did the project partner with any other organisations to deliver its aims and objectives? If so, how effective and efficient was this approach in delivering the projects purposes?**
- 8. How has the Stitch in Time project built capacity? i.e. what can you and others in and outside your organisation achieve now as a result of working together that couldn't be done at the start of the project? Due to this project, are you in a better position now to expand and develop? If not, why not?**
- 9. Did you feel the project achieved the project outcomes listed below?**
 - Organisations are more resilient
 - People have greater wellbeing
 - People have developed skills
 - The local area is a better place to live, work or visit
 - The local economy has been boosted
 - Natural heritage is in better condition, has been identified, better explained and people have learnt about natural heritage leading to change in ideas and actions.

Please provide examples:

- 10. What are the opportunities and recommendations for the future to build on the Stitch in Time project's work?**

Do you have any other comments you would like to make?

2. Volunteer Survey Questionnaire

The following questions were uploaded to Microsoft Teams and a link to the survey was sent out via email by the Volunteer Coordinator.

1. How long have you been volunteering for this stitch in time project?
2. What motivated you to get involved with the project?
3. How often do you volunteer with the project?
4. What specific tasks have you been involved in whilst volunteering on this project?
5. How do you feel your involvement has contributed to the project's conservation efforts?
6. Have you attended any training courses organised by the project?
7. If so, what training courses have you attended?
8. Can you describe any skills or knowledge that you have gained through volunteering with this project?
9. Have you noticed any changes in the local environment as a result of the project?
10. Which of the following benefits did you experience as a result of volunteering?
 - Improve social connections
 - Enhance skills
 - Personal satisfaction
 - Career advancement
 - All of the above
 - Other
11. If you selected other, is there anything else you would like to say about how volunteering with the project has affected you?
12. What was the most rewarding aspect of your volunteer experience?
13. How would you rate your overall experience as a volunteer with this project?
14. How likely are you to recommend volunteering in the projects to others?
15. What do you think are the strengths of the Stitch in Time project?
16. Are there aspects of volunteering on this project where you think the experience could be improved?
17. If you are happy to be contacted in the future for follow up questions or to let you know the results of the evaluation and please provide your name on the best way to contact you

3. Contractor questionnaire

(These questions will be sent in advance of a 1:1 telephone interview to 2 contractors on the project to be carried out in Jan 2025)

We value your feedback of your experiences of working as a contractor with the Stitch in Time Project, led by Pembrokeshire Coast National Park Authority.

Please take a few moments to reflect on your answer the following questions, which we can discuss over the telephone.

1. How long have you worked as a contractor on the SiT project?
2. What motivated you to work on this Project?
3. What benefits did you and your contracting business experience from working on this project?
4. What were the main challenges of working as a contractor on the project?
5. Do you have any suggestions from your experiences and lessons learnt delivering this project about how contracting work could be improved to deliver similar projects in the future?
6. How would you rate your overall experience working on this project?
7. Please provide any additional comments or suggestions.
8. Would you be interested in working on similar projects in the future?
 - Yes
 - No
 - Maybe

Thank you for your time.

Appendix C: Summary of Delivery Against the THE NATIONAL LOTTERY HERITAGE FUND NN2 Approved Purposes

(Source: Final Progress Report, provided to the evaluator on 24 March 2025)

Approved purposes	Description of achievements, issues, and responses
Acknowledge the support of Welsh Government and The National Lottery Heritage Fund funding on any sites, website content, social media content and hard copy publications, in both Welsh and English.	Support from the Welsh Government and The National Lottery Heritage Fund has been consistently acknowledged throughout the project. Social media posts have highlighted their contribution, press releases have been shared with local media, and the project website has been regularly updated with relevant information. Event materials, including posters, have been produced bilingually with the correct logos displayed to ensure proper recognition.
Participate in the evaluation of the Nature Networks Fund.	A preliminary online meeting with the external project evaluator took place in Year 1, Quarter 3, followed by a face-to-face meeting in Year 1, Quarter 4 (21st February 2024). During this meeting, key tasks were set, including developing a logic model and evaluation plan, which was later submitted via email. Subsequent evaluation activities included the project evaluator attending two public balsam work parties in Year 2, Quarter 2 one at Kingsmill (Castlemartin Corse) and another in St Davids. These sessions allowed direct engagement with volunteers to gather feedback. An online meeting was scheduled for October 24 to finalise the list of project delivery members, partners, and volunteers for feedback collection. In Year 2, Quarter 3, another meeting took place where the evaluation approach was agreed upon. This included: • Five interviews conducted by project staff (Rivers Trust and PCNPA) • Eight volunteer feedback surveys • Two written feedback reports (National Trust and a PCNPA volunteer assistant) • Two telephone interviews with contractors. Throughout Year 2, Quarters 3 and 4, interviews were conducted with PCNPA staff, external delivery partners (Rivers Trust), volunteers, and contractors, all contributing insights via interviews or questionnaires. This process aimed to capture lessons learned and recommendations for future project coordination.
Develop a monitoring plan appropriate for the site and project to enable evaluation of project against specified outcomes.	The project has developed a comprehensive monitoring plan for the project catchments, which has been attached. This document:

	• Outlines the policy context for the management of the catchments. • Describes the principles of the monitoring approach at a catchment level. • Provides a snapshot update on the current status of active catchments under the project. • Identifies key actions required to sustain project outcomes beyond the current funding period. • Establishes a backstop position to mitigate risks in the event of budget cuts or funding difficulties. This structured monitoring plan ensures that project progress is evaluated against specified outcomes, allowing for adaptive management and long-term sustainability.
One FTE Project Coordinator post to support project.	Throughout the project, a full-time Project Coordinator has played a key role in coordinating invasive species control efforts and community engagement. This position has been essential in managing contractor-led control work across all NNF2 project catchment sites, including Castlemartin Corse SSSI, Milford Haven Waterway SSSI, Aberarth Carreg Wylan SSSI, Preseli SAC and Cleddau Rivers SAC, Preseli SAC and North Pembrokeshire Woodlands SAC, and North West Pembrokeshire Commons SAC and St. Davids SAC. The Project Coordinator has worked closely with contractors to oversee Himalayan balsam and Japanese knotweed management, certifying completed work, assigning new control areas, and ensuring smooth collaboration between contractors, volunteers, and project partners. A key aspect of this role has been fostering volunteer engagement and community involvement. The Project Coordinator has organised and led volunteer work parties, hosting multiple events that have engaged a significant number of volunteers. These sessions have provided participants with hands-on experience in invasive species management while strengthening local conservation efforts. Volunteers have been supplied with the necessary tools, protective gear, and travel expense support, helping to ensure sustained participation. The Project Coordinator has also facilitated collaboration with West Wales Rivers Trust (WWRT) and the National Trust, integrating their efforts into the wider strategy for controlling Himalayan balsam and Japanese knotweed. Beyond fieldwork, the Project Coordinator has delivered community engagement activities, including guided walks and best-practice workshops. These events have introduced attendees to effective control methods, raised awareness of invasive species management, and served as opportunities to recruit new volunteers. As a result of these efforts, a growing number of local individuals and partner organisations have become involved in

	conservation actions, contributing valuable time and effort to habitat restoration. With control efforts progressing, there has been a noticeable decline in Himalayan balsam densities across managed sites, allowing native species such as foxglove and red campion to recolonise and establish seed banks. The Project Coordinator has documented these ecological improvements using fixed-point photography and status mapping, providing clear evidence of the project's impact. In addition to Himalayan balsam control, the Project Coordinator has overseen Japanese knotweed treatment in priority locations, ensuring that biosecurity measures are in place to prevent further spread. By leading a targeted, collaborative, and community-driven approach, the Project Coordinator has helped make these sites more resilient to future invasion, reducing the need for intensive intervention over time and ensuring the long-term health of the landscape.
Host a range of events and talks to provide advice and guidance, and sharing community best practice.	The project has successfully hosted a diverse range of events and talks to provide advice, guidance, and share community best practices, engaging stakeholders such as Welsh Government officers, community groups, volunteers, and conservation organisations. These events have strengthened community involvement, promoted best practices in invasive species control, and supported volunteer recruitment. Throughout the project, 84 events were organised, with volunteers contributing a total of 1,682.50 hours, valued at £33,650. In 2023 alone, the project officer coordinated 36 events, primarily focused on Himalayan balsam work parties in the first half of the year, followed by vegetation cutting and community talks in the latter half. A total of 110 individuals participated, contributing 837.50 volunteer hours. Year 1 activities included a best practice event in the Wern catchment attended by Welsh Government officers, where effective Himalayan balsam control methods were demonstrated. A talk for the Llanteg community group covered invasive species and their medical applications, raising £70 for Pembrokeshire Hogspital. Presentations at Trefin Community Hall and Pembroke Civic Trust provided project updates and emphasised the importance of vigilance in managing invasive species. Volunteers from groups such as the Friends of the National Park, Pathways group, Moylgrove and Brynberian community groups, West and North PCNPA voluntary wardens, and a Welsh Government corporate volunteer group played a key role in these activities. The Friends of the National Park have provided consistent and invaluable support, bringing experience and efficiency to Himalayan balsam removal.

	In Year 2, best practice and engagement events with the West Wales River Trust took place, including a workshop at Haverfordwest Rugby Club focused on Himalayan balsam and Japanese knotweed control. Walk & Talk events, public work parties, and volunteer training sessions further expanded engagement. Across project catchments, 18 volunteer work parties took place, with volunteers contributing 237 hours of work, valued at £4,740. Later in the year, vegetation cutting became the primary focus, preparing sites for future management efforts. The Kingsmill Wood, work party involved six members of the Friends of the National Park in balsam removal and access clearing. First aid training was provided to six volunteers, ensuring a lasting legacy of safety and preparedness. Community talks continued, with Llanteg community group receiving a presentation on ethical conservation dilemmas and the Kilgetty & Begelly District Gardening Club learning about the project's success in Himalayan balsam control. The ongoing involvement of dedicated volunteer groups has been crucial to the project's success. Their contributions have ensured significant progress in managing invasive species, strengthening community engagement, and fostering long-term stewardship of Pembrokeshire's natural habitats.
Work across 6 target catchment sites.	Over the course of the project, Himalayan balsam control efforts have been focused on six key catchment sites, with additional interventions where necessary to prevent the further spread of invasive species. During Quarter 3, control work began winding down in October, with both contractors and volunteers completing scheduled tasks across the target areas. However, site variations in growing conditions extended the presence of balsam in some locations. For example, during a site visit in St Davids in mid-November, the Project Officer identified and removed balsam plants that had germinated later in the season. This highlights the importance of site-specific management strategies, as catchment conditions influence the timing and intensity of control measures. As part of ongoing management, winter work allocation for contractors was carried out in December, covering key areas including Afon Wern, St Davids, Blaenffos, Brynberian, and Ceibwr. These efforts focused on vegetation clearance to improve access for future control work. To support project monitoring and decision-making, catchment status maps were completed across Quarters 3 and 4, detailing the extent of control work completed, with area statistics provided in both mapped and table formats. Beyond the six primary catchments, proactive interventions were undertaken in response to newly

	identified balsam infestations. During a site visit, the Project Officer confirmed the presence of Himalayan balsam at Coleg Plas Dwbl, a previously unrecorded site within close proximity (approximately 300 metres) to the Afon Wern catchment. Given its strategic location, project resources were allocated to prepare the site for easier control in the growing season. Discussions with the college also explored potential collaboration, with students gaining hands-on experience in the Afon Wern catchment, while contractor-led efforts focused on the less accessible infestation within double-fenced ditches at the college. Similarly, a new Himalayan balsam outbreak was reported in the Cwm Gwaun catchment, an area where no previous infestations had been recorded during the pilot phase. Due to the risk of downstream spread, the Project Officer coordinated immediate contractor intervention, with work commencing the day after the initial site survey and landowner engagement. This rapid response demonstrates the project's commitment to early intervention and biosecurity measures, ensuring that small infestations are addressed before they become widespread. Overall, project efforts have been concentrated in six primary catchments, with targeted management in additional areas where necessary. The project's adaptive and proactive approach has ensured that control work is effective, reducing balsam densities while strengthening partnerships with landowners, contractors, and community stakeholders. By maintaining a long-term perspective on invasive species control, these efforts contribute to habitat restoration and landscape resilience across Pembrokeshire.
Undertake species control actions, including for Himalayan Balsam, Japanese knotweed and other incidental plant species identified by the Pembrokeshire Nature Partnership.	Efforts to control Himalayan balsam and Japanese knotweed have been actively undertaken across multiple catchments and sites, guided by the priorities set by the Pembrokeshire Nature Partnership. The project involved a coordinated effort between contractors, project officers, PCNPA rangers, volunteers, and partner organizations. Work has been carried out across a range of locations, ensuring that invasive species management is effectively implemented and monitored. Himalayan balsam control has been a key focus, with extensive work undertaken by both contractors and volunteers. The Project Officer has led work parties while also working closely with PCNPA Rangers in the North and West, who have independently managed their own work parties as well as joint efforts with the Project Officer. Collaboration with the West Wales Rivers Trust (WWRT) has been an important part of the project, particularly through their Adopt a Tributary Engagement Officer. The Project Officer has introduced the WWRT officer to specific sites where they can continue work

	independently. In addition, the National Trust has contributed by leading volunteer work parties on its land within the St Davids/Afon Alun catchment. Contractors have been actively managing balsam at Afon Wern, Afon Alun, Castlemartin Corse, Ceibwr, Blaenffos, and Crymych, conducting mechanical cutting followed by monitoring and hand-pulling to reduce regrowth. As the project progressed, control measures became less intensive, with minimal use of mechanical tools such as flails and trimmers. The work has revealed significant variation in Himalayan balsam growth, flowering, and seeding times across different sites, as well as within individual locations. This variation has impacted the timing and intensity of control measures. Newly identified infestations in the Ceibwr catchment and near Manorbier (Pembroke catchment) have been marked for targeted control in the following season. Throughout the project, a total of 53 hectares have been actively managed for Himalayan balsam control. Of these, 28 hectares remain under monitoring to maintain low densities or near-eradication levels, while 28 hectares are currently untreated and will require further intervention. To ensure effective tracking of progress, catchment-specific status maps have been developed using QGIS, with color-coded indicators to distinguish between different levels of control. Pink areas represent sites where no control has taken place, orange areas indicate active control efforts, and blue areas signify locations where low-density populations are being monitored. In addition to Himalayan balsam control, work on Japanese knotweed management has been planned and initiated. As part of the project efforts, 1,246 Japanese knotweed stems have been identified for treatment, primarily using stem injection methods to ensure effective eradication. Preparatory work was conducted in 2023, including the cutting of dead knotweed stems to improve access to sites. Community engagement has been a vital aspect of the project, with two public volunteer work parties held at St Davids and Castlemartin Corse, both attended by the project evaluator. Meanwhile, the West Wales Rivers Trust has continued leading and organizing work parties at Crymych, Blaenffos, Brynberian, and St Davids, helping to expand the reach and impact of invasive species control efforts. Furthermore, WWRT assigned two contractors to work alongside the project's contractors at Afon Wern for two days, enhancing the capacity to tackle invasive species effectively. Himalayan balsam control efforts continued into the winter of 2024, gradually winding down as the growing season
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	ended. In the third week of November, the Project Officer introduced the new PCNPA area ranger to the St Davids site, where balsam plants were still found and removed. This highlights the differences in environmental conditions across catchments, which can extend or shorten the growing season for invasive plants. The project's structured approach to monitoring, collaboration, and strategic control measures has ensured that invasive species management continues to protect the ecological integrity of Pembrokeshire's landscapes.
Volunteers to support PCNPA staff and contractors in INNS removal.	Volunteers have played an essential role in supporting PCNPA staff and contractors in the removal of INNS, primarily Himalayan balsam. A series of work parties were organized throughout the project, with fluctuations in volunteer attendance at different times. Public volunteer days were held at various sites, with some attracting a handful of participants while others had lower-than-expected turnout. Despite occasional dips in attendance, individual volunteers have consistently contributed to the project, demonstrating strong community commitment to preserving Pembrokeshire's natural habitats. Their involvement has been invaluable in extending the reach and impact of INNS control work. Throughout the project, volunteers have participated in balsam removal efforts, working at numerous sites through both pulling and cutting techniques. In areas with denser growth, volunteers worked alongside contractors using machinery, ensuring thorough sweeps of targeted areas to maximise effectiveness. Best practice workshops were held to introduce volunteers to control methods for Himalayan balsam and Japanese knotweed. These sessions also served as a recruitment opportunity, with additional work parties scheduled to support hands-on learning following the workshops. As the season progressed, Himalayan balsam control efforts began winding down, with volunteer work shifting towards clearing vegetation to improve access and uncover patches of balsam in preparation for future control efforts. In later stages, volunteers contributed significant hours to vegetation clearance, cutting dead knotweed stems, and preparing sites for the next season's control work. Volunteer engagement remained strong throughout the project, with hundreds of hours contributed, reinforcing the importance of community participation in long-term INNS management.
Volunteers to receive training, support and expenses.	Volunteers have received training and support to enhance their skills and safety while contributing to the project. A group of volunteers, along with the project officer, completed a two-day remote first aid course, providing them with valuable knowledge that will benefit both the project and their future conservation work. Volunteers are also offered reimbursement for expenses such as travel, though not all choose to claim. Some individuals have

	made use of this support by claiming fuel costs, ensuring that financial barriers do not prevent participation.
Carry out surveying at adjacent catchments on wider species as potential buffer zones to managed areas.	Surveying for INNS, has been carried out in catchments adjacent to managed areas, with a focus on identifying potential buffer zones. These surveys have assessed risks to key sites by mapping infestations along roadsides, watercourses, and private lands that may pose future threats. Monitoring has taken place throughout the project to track the impact of control efforts, with findings used to guide future management strategies. Survey results have highlighted areas of concern, including a significant Himalayan balsam infestation south of the Afon Wern catchment. Although natural dispersal in this area is limited due to the direction of water flow, there is a risk of spread via roadside growth and human activities such as machinery movement. Engagement with landowners between affected areas has been a proactive step in preventing further dispersal. Additionally, surveys identified a balsam infestation near the eastern boundary of the Afon Wern catchment, which was included in winter control efforts. In previously treated areas, follow-up contractor visits have reported a drastic reduction in balsam presence, with some sites showing little to no regrowth, indicating successful control efforts. The findings from these surveys are being used to prioritize future management actions, ensuring that surrounding habitats remain safeguarded against further INNS spread.

Appendix D: Post Project Management plan NNF2 (10 March 2025)

Introduction

This document is intended to outline the approach of the Pembrokeshire Coast National Park Authority to maintaining and building upon the outcomes of catchment based INNS management achieved under the Nature Networks 2 Fund.

This document describes the policy context for the management, describes the principles of our approach at a catchment level and provides a snapshot update of where we are now with the active catchments under the project.

Here we also outline key actions required to sustain the outcomes as well as our backstop position in the face of cuts or should funds become difficult.

1. Policy Context

INNS as a priority is cemented in local policy as a practical priority for the targeting of resources and on the ground action at a local level. This has provided the context for PCNPA's sustained focus on catchment management for INNS. 2025 marks 10 years since the start of our first pilot trial of the catchment approach demonstrating the direct translation of policy into action for over a decade.

National Park Management Plan

Successive National Park Management Plans have identified the management of INNS as a priority and focal area for the National Park Authority through translating National and regional policies and priorities on INNS (such as The Great Britain Invasive Non-Native Species Strategy 2023 to 2030, State of Natural Resources Report 2020 as well as the SW Area Statement published by NRW) into local policy and practice.

The current Pembrokeshire Coast National Park Management Plan 2020-2024 includes an action to "Manage and monitor invasive non-native and /or harmful species in partnership with local communities, with specific reference to Japanese knotweed, Himalayan balsam and Rhododendron in the Gwaun, Porthgain, Clydach and Castlemartin catchments."

The associated action plan "Restoring Nature" includes specific actions:

Stitch in Time Project: Trial a catchment-based approach to the control of Japanese knotweed and Himalayan balsam in target catchments in the National Park (Gwaun, Porthgain, Clydach and Castlemartin). Outcome: Invasive species are controlled and/or eradicated and a working model for control is available for Park-wide control of the target species. (The targets have been exceeded through the instigation of work on catchments in addition to those originally highlighted as a priority).

Implement a Park-wide strategy for Himalayan balsam and Japanese knotweed control: Roll out the Stitch in Time approach Park-wide. Outcome: Invasive species are controlled and / or eradicated and biodiversity is protected and enhanced.

Pembrokeshire Local Nature Recovery Plan

The Pembrokeshire Local Nature Partnership has published Pembrokeshire Nature Recovery Action Plan which identifies key threats including invasive species and includes a grouped Species Action Plans for INNS:

https://www.pembrokeshire.gov.uk/Objview.asp?object_id=3651

The PNCPA chairs the Steering Group of the Local Nature Partnership which consists of Pembrokeshire County Council, The Wildlife Trusts of South and West Wales, Natural Resources Wales and the West Wales Biodiversity Information Centre.

2. Principles of the Catchment approach

Himalayan Balsam spreads rapidly downstream therefore a coordinated methodical and sequential top down approach to control on river catchments (encompassing the main river and tributaries). The approach starts with mapping the catchment to identify and then re-directing and applying the resources of contractors, staff and volunteers in a sequential and strategic manner.

Catchments have different characteristics at different stages. Catchments will spend different amounts of time in each of these phases and this will be dependent on catchment size and the complexity of the habitats.

Benefits to biodiversity are seen at every stage of catchment control as balsam declines in cover.

Initiation – In this stage we have a picture of the distribution of Balsam within the catchment and work areas at the top of the catchment at source areas high up in the drainage basin. Here there will be a much larger area mapped as present and only a small area mapped as in progress.

High resource intensity Phase – Early stage over 10 - 50% of the catchment likely to be mapped as in progress with the rest mapped as present. Resource allocation is building.

High Resources Intensity Phase - Mid Stage. Over 80% of the catchment is likely to be mapped as in progress with some areas higher up in the catchment starting to see significant reductions in cover and may even be entering monitoring and maintenance phase. Resource investment is at its peak.

High Resource Intensity – Late stage. Significant areas of the catchment in the upper reaches may see near eradication of balsam and will be entering monitoring and maintenance phases. Resource investment is starting to decline.

Monitoring and Maintenance phase. The whole catchment has seen significant reductions in cover of balsam and the majority is in monitoring and maintenance phase. Resource Intensity is significantly lower and will now begin to tail off even further. Sporadic outbreaks will still need to be dealt with making the tail off in the resources ‘bumpy’.

3. Overview of Catchment Status at the end of NNF 2 and continuation arrangements

Catchment Name	Status (see categories above)	Present (ha) as of December 2024	In progress (ha)	Monitoring and Maintenance (ha)	Funding and resource continuation (e.g funding vols groups, landowner engagement etc).
Brynberian	Mid	0.10	0.76	1.02	In house PCNPA staff and volunteers, minimal contractor input: Included in NNF3
Blaenffos AND Crymych	Early	8 *	3.45	1.07	Included in NNF3, high contractor input required
Castlemartin	Mid	12.6	3.16	17.61	In house PCNPA staff and volunteers: SLSP potential future grant
Ceibwr	Mid	0.10	6.31	9.09	Included in NNF3, high contractor input required in house PCNPA staff and volunteers: SLSP potential future grant
Pembroke	Early	0.02	0.13	0	In house PCNPA staff and volunteers: local community group
St Davids	Early	2.53 **	4.34	0	In house PCNPA staff and volunteers: SLSP potential future grant
Wern	Mid	1.56	31.52	0	Included in NNF3, high contractor input required in house PCNPA staff and volunteers: SLSP potential future grant
Waterwynch	Mid	2.80	2.96	0	In house PCNPA staff and volunteers: SLSP potential future grant
Pwll Granant	Early	1.0	0.8	0	Included in NNF3, contractor input required in house PCNPA staff input: SLSP potential future grant

- * Based on 2022 survey data, likely to be an underestimate due to time lapsed
- ** Based on 2022 survey data, likely to be an underestimate, terrain and very thick growth on wet land impedes detailed survey.

Catchment Name	Status (see categories above)	Present (ha) as of December 2024	In progress (ha)	Monitoring and Maintenance (ha)	Total area infestation (ha)	Total in progress and monitoring (ha)
Brynberian	Mid	0.1	0.76	1.02	1.88	1.78
Blaenffos AND Crymych	Early	8	3.45	1.07	12.52	4.52
Castlemartin	Mid	12.6	3.16	17.61	33.37	20.77
Ceibwr	Mid	0.1	6.31	9.09	15.5	15.4
Pembroke	Early	0.02	0.13	0	0.15	0.13
St Davids	Early	2.53	4.34	0	6.87	4.34
Wern	Mid	1.56	31.52	0	33.08	31.52
Waterwynch	Mid	2.8	2.96	0	5.76	2.96
Pwll Granant	Early	1.0	0.80	0	1.80	0.80
TOTAL a		27.71	52.63	28.79	110.93	82.22

4. Actions required

- ✓ **Seeking continuation funding.** We already have bids in and funding secured for continuation work as outlined above. We will continue to actively work to seek on-going funding for active catchments through the PCNPA funding team, the Pembrokeshire Coast Trust and through private finance through the UK National Parks and Revere partnership.
- ✓ **Investing in our volunteers.** Our volunteer force has a continued role to play as we move forward with our catchment work. Through PCNPA's volunteer strategy we will continue to invest, train and engage with those individuals and groups for who want to work with us to achieve our aims.
- ✓ **Input into policy.** We will continue to promote INNS as a priority through local and regional policy.
- ✓ **Raising awareness.** We will continue to raise awareness of INNS, the impact of INNS and the needs and successful methods of control.
- ✓ **Achieve multiple benefits.** Ensure our INNS is highly fundable through continuing to promote the triple bottom approach of delivering social, economic and environmental benefits.

5. Backstop position

Through our actions above we feel buoyant about the likelihood of continuation funding. However, it is possible to put catchments on 'ice' and adopt a hold the line approach to safeguard existing gains. The approach is also scalable and investment and progress down and catchment can be tailored to the funding available. This method will allow us to ride out short term funding reductions if necessary, without losing the gains previously made.

Appendix 1 – Catchment Maps and Detail

Afon Wern -headwaters to confluence with Eastern Cleddau

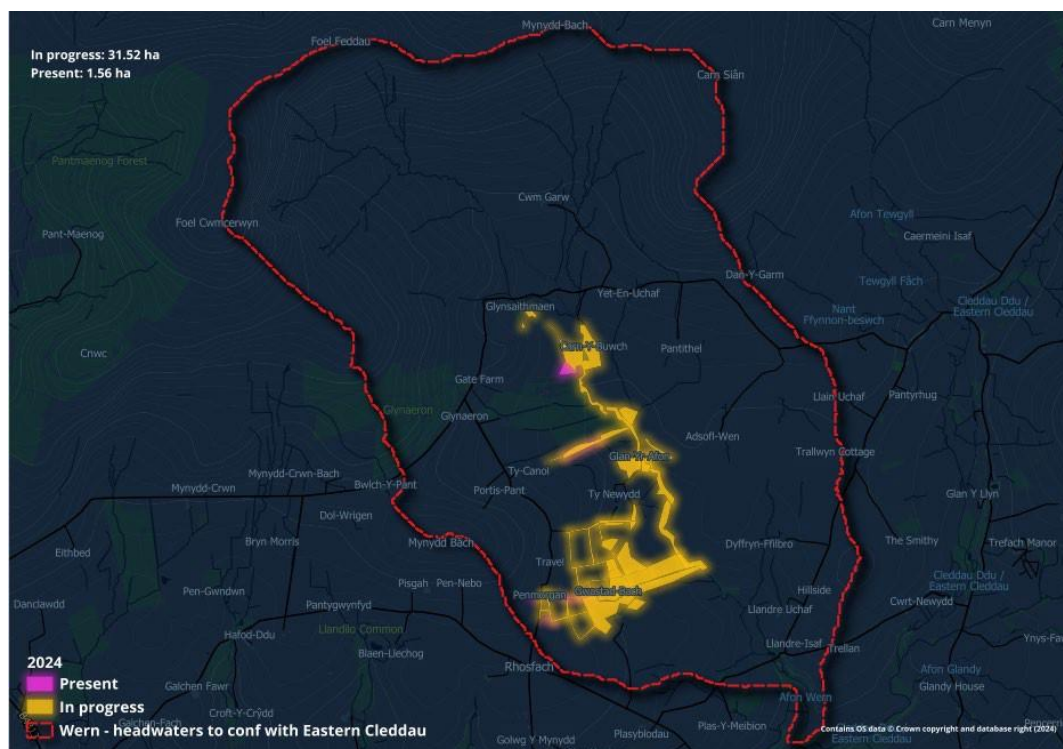
Total area infestation of Himalayan balsam 33.08ha: Himalayan balsam In progress of control 31.52ha : Himalayan balsam present 1.56ha

Control of Himalayan balsam over the Afon Wern catchment has been contractor led during 2023 and 2024. An additional contractor was used during the 2024 season to focus on areas initially earmarked for volunteer input, hedges and edges. Due to the isolated nature of this catchment volunteer input was limited. West Wales Rivers Trust assisted in leading one work party in 2024 and also contributed staff time strimming balsam during the 2024 growing season. The project officer led a group of Welsh Government officers here during 2023.

The adjacent area to the South/ Southwest of the Wern catchment 'Rhosfach' is being surveyed by a contractor for Himalayan balsam presence due to close proximity to the Wern and the links between owners and land management between both areas.

Post Nature network 2 grant the Afon Wern catchment is included in an additional grant, Nature Network 3 which will allow monitoring and maintenance of areas controlled by the 2 contractors (Yellow areas/ In Progress on map below) as well as inclusion of the remaining area of 1.56ha (pink , present) to be controlled during 2025.

It is likely that during the 2025 season a majority of these areas' status will be updated from In progress of control to monitoring and maintenance, highlighting a shift from a less resource hungry control phase to monitoring. From 2026 in the absence of external grant monies to assist with catchment monitoring PCNPA will undertake monitoring and look to identify internal and or external funding opportunities to assist this may also include working with the west Wales river trust.



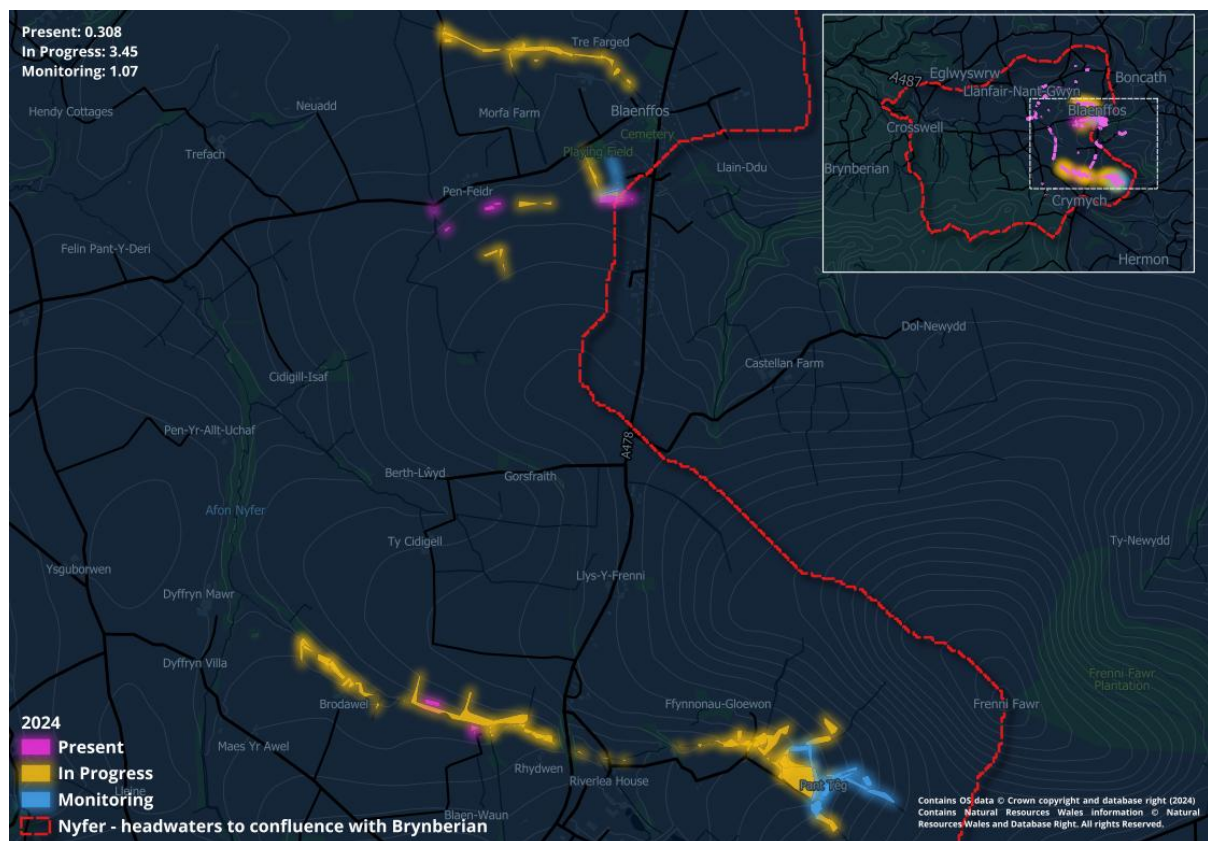
Afon Nyfer-headwaters to confluence with Brynberian : Crymych and Blaenffos

Total area infestation of Himalayan balsam 12.52 Himalayan balsam In progress of control 3.45: Himalayan balsam present 8.0 Himalayan balsam monitoring 1.07

Control of Himalayan balsam over the headwaters at Crymych and Blaenffos has been undertaken with a mix of contractors, volunteers and PCNPA staff time. West Wales rivers trust also led work parties at both these locations and jointly organised a best practice event in Crymych with the project officer as a volunteer recruitment drive and another best practice event in Haverfordwest.

These areas comprise a mix of linear infestations of balsam along hedges and streams and larger areas within scrub, willow and woodland, these linear, edges, hedges and ditches are time consuming to monitor following on from control.

Post Nature network 2 grant the Crymych and Blaenffos areas are included in the Nature Network 3 project which will allow contractors, volunteers and staff to consolidate areas controlled over the 2023 and 2024 season and to include areas where consent has only been received in 2025. There will be no extension of areas post 2026.



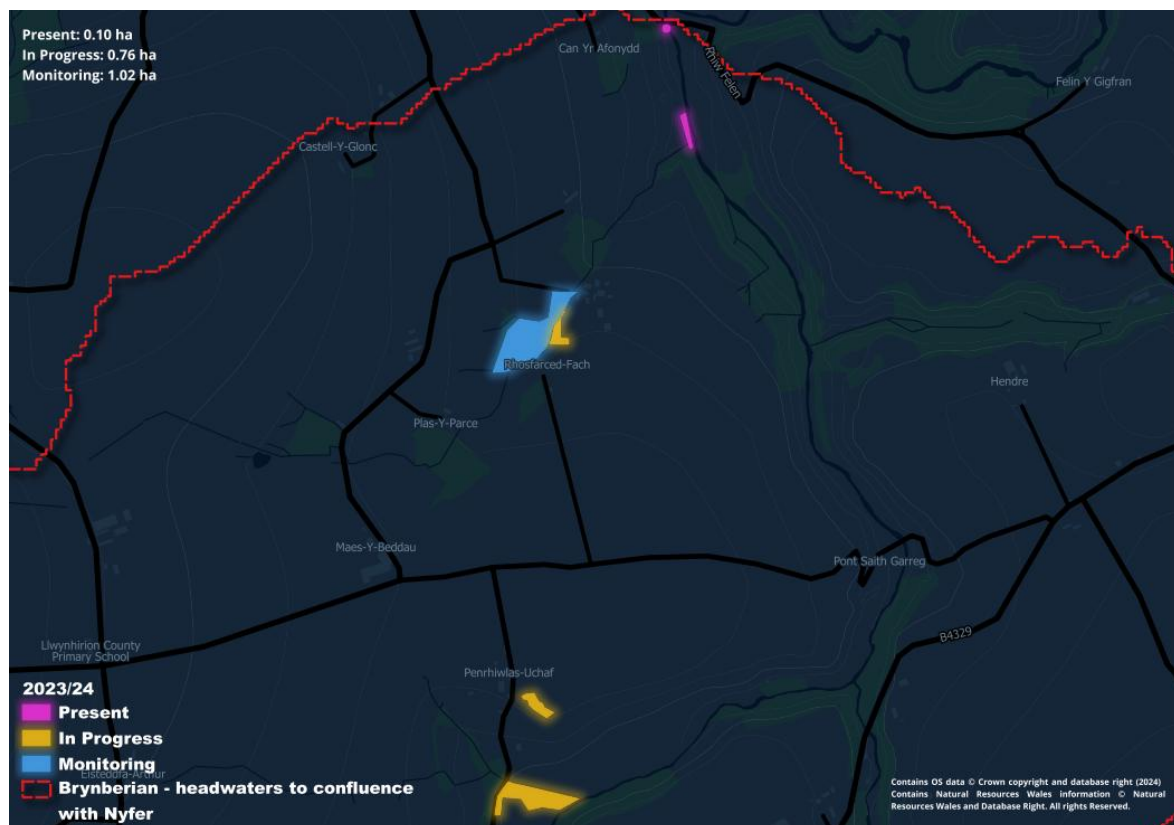
Afon Brynberian- headwaters to confluence with Afon Nyfer

Total area (ha) infestation of Himalayan balsam 1.88 Himalayan balsam In progress of control 0.76: Himalayan balsam present 0.10 : Himalayan balsam under monitoring 1.02

Control of Himalayan balsam over the Afon Brynberian has been undertaken principally with volunteers from the local community. Contractor input has been limited over 2023 and 2024 season with the project officer, PCNPA area ranger and the west Wales rivers trust officer leading work parties and monitoring the site between work parties. The successful control of balsam on three sites over 2023/2024 has enabled an extension of control work to include a new area of balsam downstream from these initial up stream sites. Winter 2025 preparation is underway by contractors.

Post Nature network 2 grant the Brynberian catchment is included in the Nature Network 3 project which will allow contractors to focus on the new area over the 2025 winter and into the 2025 growing season. The local volunteers are committed to assist with future monitoring of the original sites as well as PCNPA area ranger and project officer. The volunteers have expressed an interest in monitoring the new area during 2025.

The relatively small size of these balsam sites means that monitoring and maintaining a near eradicated state of balsam through 2026 and beyond is feasible in house. Further extension down the Brynberian would only be possible with contractor input therefore post 2026 the strategy would be to 'hold the line' at the most recent extension with PCNPA coordinating volunteer and staff time monitoring activities.

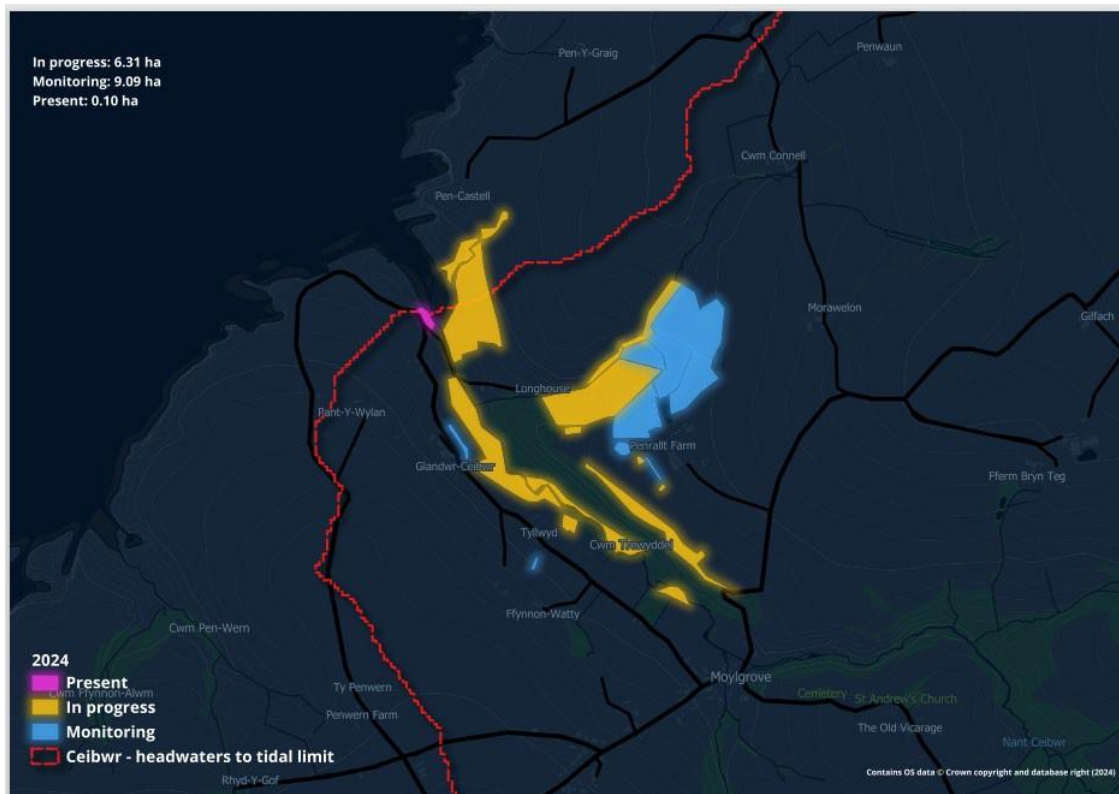


Ceibwr- headwaters to tidal limit

Total area infestation of Himalayan balsam 15.5ha Himalayan balsam In progress of control 6.31ha : Himalayan balsam present 0.1ha Himalayan balsam Monitoring and maintenance 9.09ha

Control of Himalayan balsam over the coastal areas of Ceibwr, Penrallt and the Moylgrove river has been undertaken by contractors, PCNPA staff and volunteers. Monitoring at the Penrallt site is undertaken by contractor led volunteers with path cutting important to facilitate volunteer access over these areas. A new area of balsam was identified and part included in control over 2024. Winter cutting is required over winter for better access as well as significant tree fall following storm Daragh over some balsam areas.

Post Nature network 2 grant internal PCNPA funds have been allocated to undertake winter cutting and fallen trees over balsam areas during quarter 4 2024. Ceibwr is included in the Nature Networks 3 project. It is likely more areas will enter the monitoring and maintenance phase during the 2025 growing season to reflect the near eradicated state. The small area that remains present is very steep land and maybe an area that containment maybe the only option.



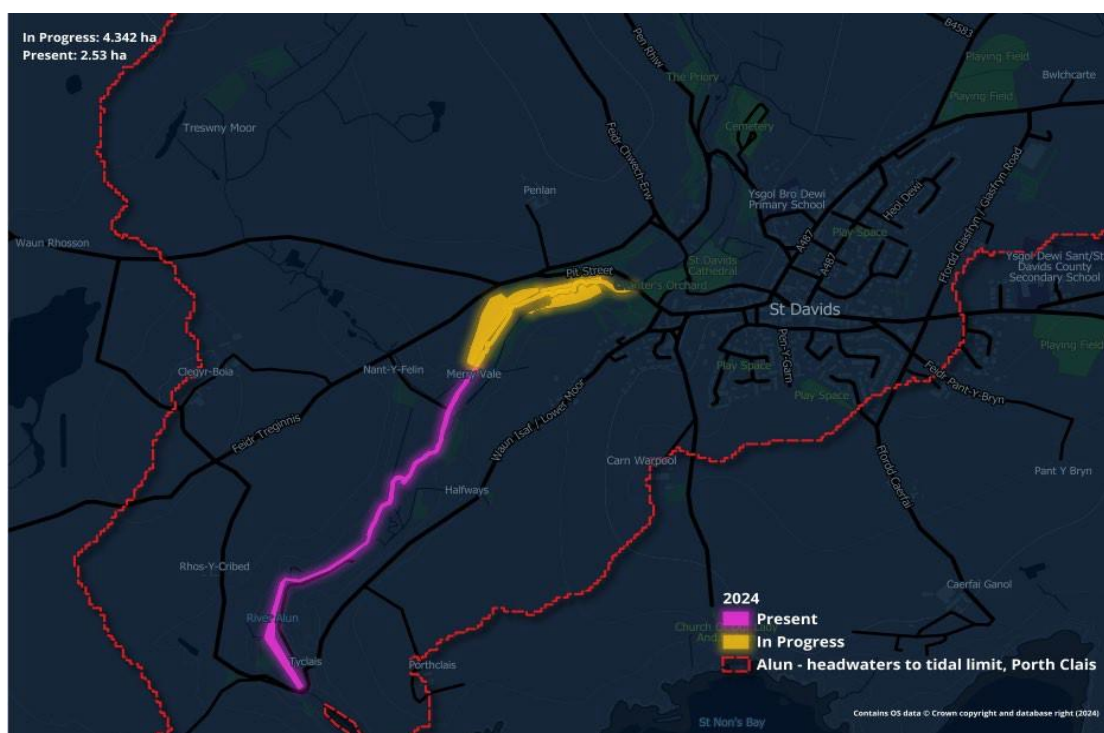
Afon Alun- headwaters to tidal limit, Porth Clais

Total area infestation of Himalayan balsam 6.86ha* Himalayan balsam In progress of control 4.34ha : Himalayan balsam present 2.52ha

*likely underestimate due to accessibility

Control of Himalayan balsam over the Afon Alun has been undertaken by contractors, PCNPA staff and volunteers as well as River Trust staff , National Trust staff and their respective volunteers. A majority of the site is very wet and boggy which has meant all vegetation cutting and balsam control has been undertaken manually. Bog mats have been very useful to help access areas across this wet site. Control within the areas dominated by Hemlock water dropwort (and balsam) were included in the 2024 season following winter 2023 access work and otter survey. Maintaining access routes through the Hemlock during the growing season has been important preparation for volunteer work parties. Japanese knotweed has been treated on areas where present within the areas in progress of balsam control. Vegetation clearance along sections of 'the leat' a scheduled ancient monument with PCNPA area ranger and PCNPA archology officer also assisted with balsam control. During the winter of 2024 into 2025 access routes have been cut on areas of land below 'Felin Isaf' to access the extent of balsam in area not yet included in control. The balsam 'present area' maybe an underestimate due to physically not being able to access areas without cutting.

Post Nature network 2 grant the areas under In Progress of control will switch hopefully to monitoring and maintenance over 2025. This will depend on how the seed bank responds in Spring 2025. These areas could be maintained by PCNPA staff and volunteers although contractor time will be required to maintain access routes and undertake the first May/June balsam cut. PCNPA will look to fund this inhouse as to date no external funding has been secured. There will be no extension of areas in progress of balsam control without the input of contractors therefore 2025 aim will be to 'hold the line'. The Afon Alun isn't included in the Nature Networks 3 project. The Sustainable Land Sustainable Places grant maybe an option for future funding any extension.

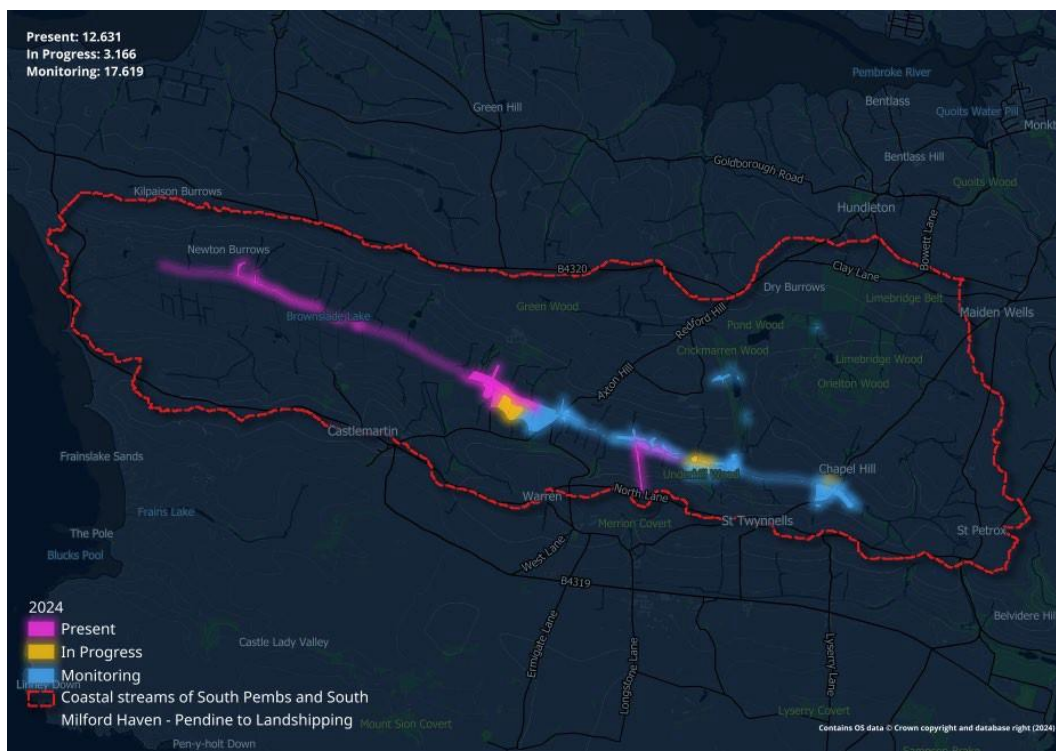


Castlemartin Corse- headwaters to tidal limit

Total area infestation of Himalayan balsam 33.416ha Himalayan balsam In progress of control 3.16ha : Himalayan balsam present 12.6 : Himalayan balsam Monitoring and maintenance 17.6ha

Control of Himalayan balsam over Castlemartin corse has predominantly been undertaken by contractors and PCNPA staff. The Friends of the National Park group focus their Tuesday work parties at Kingsmill wood. Over 2023 and 2024 the volunteer group main activity has been monitoring and maintaining areas within in the wood and extending control of balsam into new areas. Winter cutting during 2024 enabled the project to reach the western boundary of the site which was a first. The 2024 winter Storm Darraugh caused a lot of tree fall within Kingsmill wood. From June onwards PCNPA staff and contractors focus on monitoring and maintaining sites higher up the catchment from Chapel Hill to Stem bridge. A refusal is located at 'North Lane'

Post Nature network 2 grant the Friends of the National Park have expressed interest in continuing their work parties at Kingsmill wood with PCNPA staff. Internal funds have been allocated to make safe some of the storm damage during quarter 4 and increase access to balsam in new areas with contractors within Kingsmill wood only. The friends have also been active over winter with two work parties. The Castlemartin corse catchment is not within the Nature Network 3 project. The Sustainable Land Sustainable Places grant maybe suitable to fund contractor activities across this catchment. Extension of areas will only take place within Kingsmill wood. Internal funds will be sought to assist with the monitoring and maintenance higher up the catchment and PCNPA will continue to engage with land not yet currently included in control. In the absence of external funds post 2025 PCNPA staff will undertake the catchment monitoring.



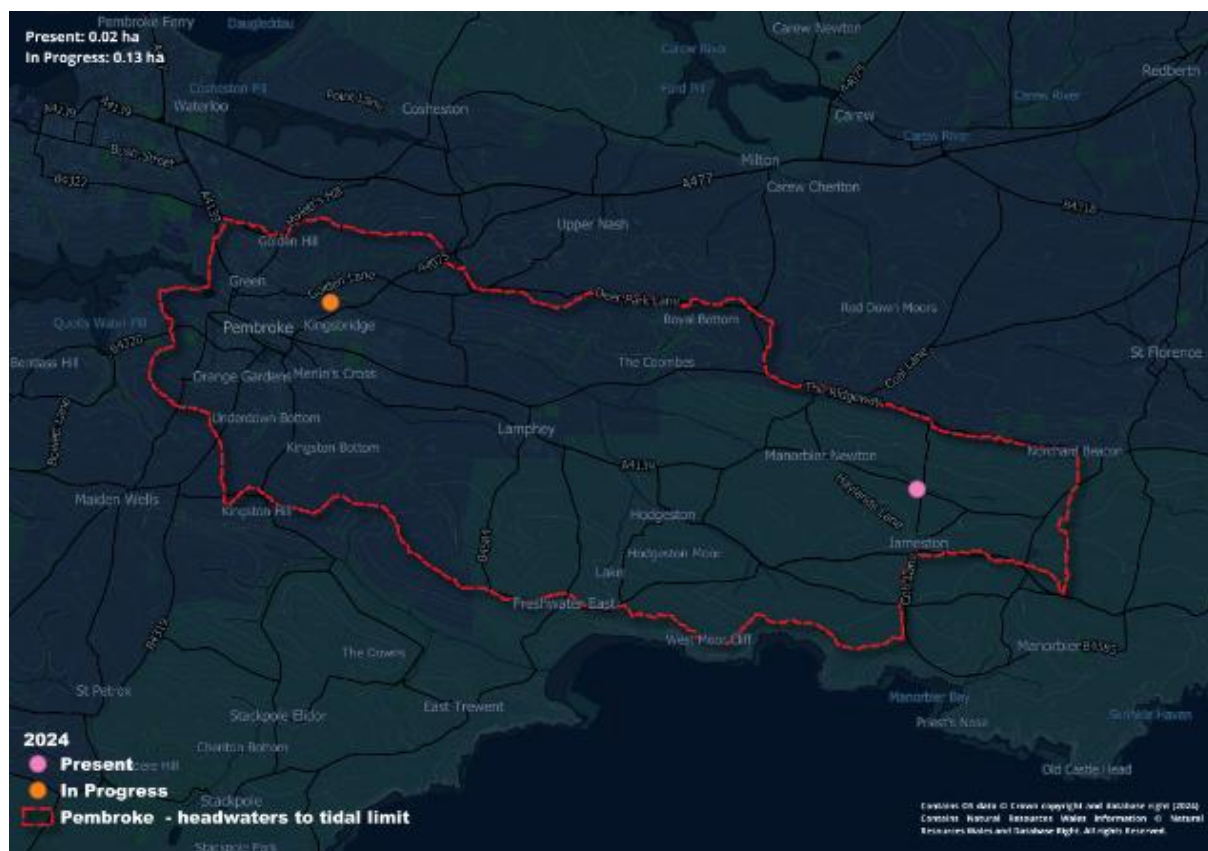
Pembroke- Headwaters to tidal limit – Hollyland wood site

Total area infestation of Himalayan balsam TBC Himalayan balsam In progress of control 0.13ha. Himalayan balsam present 0.02ha

Control of Himalayan balsam over the Hollyland wood site has been undertaken principally with volunteers from the local community over 2023 and to a lesser extent over 2024. Contractor input has been key over the 2024 season due to the site being closed off to the public due to damage of the boardwalk which is the main access point to the Himalayan balsam.

Monitoring of the Holyland wood site over 2025 is possible through the community volunteers once the boardwalk is repaired. Until that time contractor and staff input will be key to maintain the near eradicated state of balsam. This site is small (compared to others in the project) and would require small internal resources to monitor and maintain.

Over summer of 2024 project officer and contractor surveyed the wider catchment to ensure absence of balsam on the higher tributaries. A small infestation of balsam was identified near Manorbier newton currently away from water. The land in question is for sale, once new owners arrive project officer will look to engage and include this land in control as soon as possible to prevent further spread to safeguard the catchment. In the absence of rescues for contractors it is likely that any work here over 2025 will be led by PCNPA staff.



Pwll Granant

Total area infestation of Himalayan balsam 1.98ha Himalayan balsam In progress of control 0.80ha , Himalayan balsam present 1.18ha

Control of Himalayan balsam over the small coastal catchment of Pwll Granant has been led by contractor and project officer. Control has focused on adjacent field edges, hedges and ditch of a shared access track during 2023 and extended into willow and scrub during 2024 near a public right of way. In progress areas during 2024 will switch to monitoring and maintenance over 2025 allowing the inclusion of the remaining present areas. This infestation will remain contractor led with project officer input towards the end of the growing season.



Waterwynch

Total area infestation of Himalayan balsam 5.76ha Himalayan balsam In progress of control 2.96 ha , Himalayan balsam present 2.80ha

Control of Himalayan balsam over the coastal catchment of Waterwynch has been undertaken with a mix of contractors, a volunteer from the local community and project officer.

Over 2023 and 2024 contractors with remote flail focus on the large infestation near the coast adjacent to a public right of way. Project officer and a local volunteer then visit to hand pull plants around trees where the machine can't access. Project officer and a local volunteer also lead control efforts at St Annes church, the adjacent bank within Wells caravan park and the linear infestation following the stream. Staff at Rowston caravan park control Himalayan balsam within their ownership and Dwr Cymru within their assets although timing has been an issue with Dwr Cymru's contractors.

The large polygon remaining as present is beyond the scope of this project and is likely linked to a further large infestation near New Hedges village hall. There is also a link between the balsam at Wells caravan park and the larger adjacent catchment of the Ritic. It is unlikely that these In progress areas will be under monitoring and maintenance until 2026 due to the terrain and density.

