

## Report of Biodiversity Implementation Officer (PNP)

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### Subject: Pembrokeshire Nature Partnership Update

#### **Purpose of Report**

To update the Committee on the operation of the Pembrokeshire Nature Partnership. This report covers the 2023/24 financial year.

#### **Introduction**

##### **The Nature Emergency**

We have seen long term declines in all major groups of plants and animals in terms of population size, distribution and species diversity<sup>1</sup>. These declines continue, with specialist species suffering the worst declines and generalist species faring a little better. Loss of habitats has resulted in fragmentation across the landscape and there is often poor ecological condition in the remaining habitat<sup>2</sup>. This is as applicable in an intensively famed landscape as it is in the urban setting.

Wales is now ranked 16<sup>th</sup> from the bottom of the 240 countries assessed under the biodiversity intactness index (BII)<sup>3</sup>. Wales' BII stands at 51%. 90% is generally considered the threshold below which ecosystems can no longer reliably meet the needs of society.

Consequently, the Senedd declared a nature emergency in Wales on 30<sup>th</sup> June 2021<sup>4</sup>. Pembrokeshire County Council (PCC) Signed the Edinburgh Declaration in October 2021<sup>5</sup>, but has yet to formally declare a nature emergency.

Pembrokeshire Coast National Park Authority (PCNPA) has a duty under the Environment (Wales) Act (2016) S6 to 'seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems'<sup>6</sup>. The Authority is also bound by the Wellbeing of

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<sup>1</sup> State of Nature Wales Report. State of Nature Partnership (2023): <https://stateofnature.org.uk/wp-content/uploads/2023/09/TP26053-SoN-Wales-summary-report-v10.pdf>

<sup>2</sup> State of Natural Resources Report. Natural Resources Wales (2020): <https://naturalresources.wales/evidence-and-data/research-and-reports/state-of-natural-resources-report-sonarr-for-wales-2020/sonarr2020-our-assessment/ecosystems-are-resilient-to-expected-and-unforeseen-change/?lang=en>

<sup>3</sup> Biodiversity Loss – The UK's Global Rank for Levels of Biodiversity Loss. RSPB (2019): <https://www.rspb.org.uk/globalassets/downloads/about-us/48398rspb-biodiversity-intactness-index-summary-report-v4.pdf>

<sup>4</sup> Motion available to view here: <https://record.senedd.wales/Motion/7725>

<sup>5</sup> Debate available to view here: [https://pembrokeshire.public-i.tv/core/portal/webcast\\_interactive/555173](https://pembrokeshire.public-i.tv/core/portal/webcast_interactive/555173) The declaration can be viewed here: <https://www.gov.scot/publications/edinburgh-declaration-on-post-2020-biodiversity-framework/pages/endorsement/>

<sup>6</sup> Environment (Wales) Act (2016) S6 Duty: <https://www.biodiversitywales.org.uk/Environment-Wales-Act>

Future Generations (Wales) Act (2015), which includes a goal of ‘A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change)’<sup>7</sup>.

### **Social and Economic Impacts**

Natural systems underpin our society and economy<sup>8</sup>. These ecosystems provide essential services such as temperature regulation, flood attenuation, pollination of crops, air purification and carbon sequestration. These are collectively known as ecosystem services. For example:

- The Pembrokeshire economy benefits from tourism valued at over £589 million, supporting 21% of all employment<sup>9</sup>. A further 8.7% of employment is in the agriculture, forestry and fishing sector<sup>10</sup>. All these are fundamentally underpinned by the quality of our natural environment.
- Welsh Government put the value of pollinators to UK agriculture at £690 million per annum<sup>11</sup>.
- Access to natural green space (proportion of houses within 300m of green space) is used as an indicator in the Welsh Index of Multiple Deprivation<sup>12</sup>. The health and wellbeing benefits of simply living with a view of green space are estimated at £300 per person per annum<sup>13</sup>.

The World Economic Forum now judges biodiversity loss and ecosystem collapse to be the third greatest risk to the global economy over the next 10 years<sup>14</sup>.

### **Background**

The Pembrokeshire Nature Partnership (PNP) exists to co-ordinate, promote and record existing and new actions to conserve, promote and enhance nature in the County of Pembrokeshire, including the Pembrokeshire Coast National Park, the inshore waters and seabed around the Pembrokeshire coast to 12 miles offshore, taking account of local and national priorities. It has operated continually for the last 24 years, hosted by PCC and guided by a steering group of key partners, chaired by the PCNPA Biodiversity Officer. There are 27 organisational members and some 380 individuals are regularly engaged. The Partnership’s Terms of Reference and membership can be viewed here: <https://www.pembrokeshire.gov.uk/biodiversity>

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<sup>7</sup> Wellbeing of Future Generations (Wales) Act (2015) Resilience Goal:

<https://www.biodiversitywales.org.uk/Environment-Wales-Act>

<sup>8</sup> Dasgupta Review on the Economics of Biodiversity:

<https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>

<sup>9</sup> <https://www.visitpembrokeshire.com/wp-content/uploads/Economic-Impact-of-Tourism-Pembrokeshire-Report-2019.pdf>

<sup>10</sup> Pembrokeshire Wellbeing Assessment 2022: <https://www.pembrokeshire.gov.uk/public-services-board/well-being-assessment>

<sup>11</sup> <https://gov.wales/sites/default/files/publications/2019-04/action-plan-for-pollinators-review-and-future-actions-en.pdf>

<sup>12</sup> <https://gov.wales/sites/default/files/statistics-and-research/2022-01/welsh-index-of-multiple-deprivation-wimd-a-guide-to-analysing-indicator-data-2019-onwards.pdf>

<sup>13</sup> <https://www.yumpu.com/en/document/read/55271888/green-infrastructure>

<sup>14</sup> World Economic Forum Global Risks Report 2024, 19<sup>th</sup> Edition:

<https://www.weforum.org/publications/global-risks-report-2024/>

The Partnership employs a Biodiversity Implementation Officer (0.8 FTE) to run the core functions of the Partnership, input to policy groups and develop project collaborations, and two Partnership Implementation Officers (full time) to deliver large capital projects. A full time Biodiversity Assistant ensures effective administration of project finances and routine matters. The Partnership has also secured a revenue allocation which provides a 0.2 FTE for admin support relating to capital project delivery and nature recovery within the PCNPA. The Partnership has published a Nature Recovery Action Plan for Pembrokeshire to guide action on the ground in line with strategic priorities<sup>15</sup>.

The operation of the PNP has been flagged as an exemplar and used, with funding from Welsh Government (WG), as a template in recent years to re-energise a network of Local Nature Partnerships (LNPs) which had become dormant due to lack of funding in other Authority areas. There are now 25 LNPs operating across Wales. It is the long term commitment of PCC and PCNPA to hosting and resourcing the Pembrokeshire Partnership which has been the key to its success. The work of the Partnership officers levers in funding from external grant sources and contributions in-kind from delivery partners and facilitates efficient, coordinated delivery of actions on the ground.

### **Progress update 01/04/2023 – 31/03/2024**

#### **Partnership Operation**

- 382 subscribers on mailing lists. 144 mailouts sent targeted at professional or public audiences.
- 1,149 followers on Facebook.
- 4 steering group meetings and 1 full partnership gathering held.
- 322 enquiries received and responded to. Some of these result in new collaborations, practical projects or policy input.
- 97 events and activities including 11 site visits; 3 talks/presentations; 4 public engagement events; 37 local policy influencing meetings; 36 national policy influencing meetings; 6 collaborations facilitated.

#### **Policy Development**

The Biodiversity Implementation Officer input regularly to the following policy groups:

- PCNPA National Forest Planning
- PCNPA/Hywel Dda Supported Volunteering Collaboration
- PCNPA Newport Sands Re-development Proposals
- PCC County Farms Working Group
- PCC Sustainability Board
- Pembrokeshire Marine Code Review
- PSB Climate and Nature Emergency Sub-Group
- Pembrokeshire Wildfire Group
- West Wales Nutrient Management Board Technical Advisory Group
- NRW SW Area Statement Engagement Group
- WG Nature Recovery Action Plan Implementation Group
- WG National Forest Stakeholder Group
- WG Deep Dive Other Effective Conservation Measures (OECM) and Nature Recovery Exemplar Areas (NREA) Working Group

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<sup>15</sup> Nature Recovery Action Plan for Pembrokeshire (2018). Available here:

<https://www.pembrokeshire.gov.uk/biodiversity/pembrokeshire-nature-partnership-plans-and-guidance>

- WG Bee Friendly Champions Group
- WG Pollinator Action Plan Taskforce
- Audit Wales S6 Workshops

### **Project work**

- 12 practical projects supported with core PNP funds and a grant from the conservation charity WWF. Examples include Sea Trust's Pwll y Mor project, Shril Carder Bee surveys to support the Natur am Byth project and PCNPA's Wern Balsam Control project. Reports are attached as supporting documents.
- 19 partner projects supported with advice/networking. These ranged from small community projects such as 'Newport for Nature' seeking advice on practical delivery, to national projects such as 'Natur am Byth' seeking local intelligence. 3 of these projects were supported in making applications to the Nature Networks Fund and 9 supported in developing proposals for the Coastal Capacity Fund.
- The Local Places for Nature (LPfN) capital allocation to the PNP was used to fund multiple projects across Pembrokeshire, including the PCNPA. Projects within the PCNPA were varied and ranged from installation of fencing and water at St. David's airfield (for conservation grazing), woodland pasture creation at Penlan Wood to creation of meadows with schools. This capital grant was also used to fund a digger, tractor and tools for PCNPA staff to use for opportunistic habitat enhancement works. Finally, LPfN grant was used to fund a Pembrokeshire Coast National Park Trust administered mini-grant scheme 'Force for Nature' – infographic report attached as appendix. This allowed the Trust to engage with community groups, facilitating activities and projects that align with the Trust's charitable objectives: safeguarding the National Park's uniqueness and enabling everyone to fully enjoy it.

### **Financial considerations**

PCC and PCNPA make annual cash contributions to the running of the Partnership (£10,000 and £7,488 respectively in 2023/24). One Partnership Implementation Officer is paid full time from a revenue allocation as part of the Local Places for Nature (LPfN) capital programme. The other Partnership Implementation Officer and the Biodiversity Assistant are paid partly from this source and partly from a revenue allocation from WG. The Biodiversity Implementation Officer is paid under the revenue allocation from WG. A 0.2 FTE admin assistant post within PCNPA is funded through the biodiversity revenue allocation from WG. These officers then draw down and deliver large grant funded projects and undertake wider work with partners across the sector which benefits the people of Pembrokeshire. Funding for the 2023/24 financial year is set out below:

Allocated funds	
PCC Cash Contribution	£10,000
PCNPA Cash Contribution	£7,488
WWF Project Funding	£15,000
LPfN Capital Allocation to PCC	£378,300
LPfN Capital Allocation to PCNPA	£330,000
LPfN Revenue Allocation to PCC	£72,000*
LPfN Revenue Allocation to PCNPA	£72,000*
WG Biodiversity Revenue to PCC	£48,000*
WG Biodiversity Revenue to PCNPA	£48,000*

**Total** **£980,788**

Competitive funds for project specific delivery through the Nature Partnership LPfN Challenge Fund	£9,900	GI at Crematorium
WG Coastal Capacity PCF <sup>16</sup>	£58,933	
WG Coastal Capacity Seagrass	£50,273	
WG Coastal Capacity CLEAN Nyfer <sup>17</sup>	£12,914	
<b>Total</b>	<b>£132,020</b>	
<b>Grand Total</b>	<b>£1,112,808</b>	

\* Partnership officer salaries (and other things) paid from these sources.

The PCF Coastal Capacity Project runs into 2024/25, with most spend (£102,499) in the 2<sup>nd</sup> year. £490,100 in capital has been secured for the LPfN Challenge fund project at the Crematorium for the 2024/25 financial year. LPfN Allocated funding is secure for the 2024/25 financial year at a slightly increased level. The level of funding under competitive funds will vary between LNPs and between years.

The Welsh Government Biodiversity grant has contributed approximately £28k to staff costs for the PCNPA Conserving the Park scheme. The LPfN revenue allocation to the PNP has provided £13k for PCNPA staff time to deliver park-based capital projects.

Reported here are only funds allocated to and disbursed by the Nature Partnership. In addition, we have been instrumental in helping partners draw in project specific funds which they deliver themselves.

### **Risk considerations**

Withdrawal or reduction in funding would jeopardise delivery of policy development, networking and practical project work set out above. Project and policy work could be scaled back to match funding available. Responsibility for employment of staff falls to the host organisation (PCC).

Cessation of Partnership activity would negatively impact the coordination, efficiency and creativity of nature recovery action in Pembrokeshire, risking further declines in ecosystem resilience and failure to achieve targets such as 30x30 or compliance with statutory duties (see below).

### **Compliance**

The Pembrokeshire Nature Partnership plays a key coordination and facilitation role in local response to the nature and climate emergencies and in advocating for local nature recovery in national policy. Although it is not a statutory requirement to provide and engage with a Local Nature Partnership, it is widely seen as best practice in delivering against the goals of the Wellbeing of Future Generations Act in line with the five ways of working contained therein. It supports delivery of the S6 duty and several organisational priorities for PCNPA set out in the National Park Management Plan (and upcoming Partnership Plan) and Delivery Plan. It is likely that statutory targets on biodiversity will be published soon and the PNP effectively contributes to the delivery of the likely targets.

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<sup>16</sup> Pembrokeshire Coastal Forum

<sup>17</sup> <https://www.cwmarian.org.uk/clean>

### **Human rights/Equality issues**

Partnership Officers are bound by the policies of the host organisation (PCC) in going about their duties and this includes cross cutting issues such as human rights; equality, diversity and inclusion; GDPR; and Welsh Language.

Human rights and the principles of inter and intra-generational equality are core to nature recovery action and the sustainable development principles which drive the work of the Partnership.

### **Biodiversity implications/Sustainability appraisal**

Nature recovery and the protection and enhancement of biodiversity are the core functions of the PNP. All activities align with the Nature Recovery Action Plan for Pembrokeshire and are underpinned by the principles of sustainable management of natural resources.

### **Welsh Language statement**

Partnership Officers are bound by the policies of the host organisation (PCC) in going about their duties and this includes cross cutting issues such as use and promotion of the Welsh Language. The link between natural and cultural heritage is often explicit in project work and can increase community 'ownership' of nature recovery actions. Likewise, deepening a sense of place and community through local nature recovery action can foster deeper connections to local cultural heritage.

### **Conclusion**

Pembrokeshire Nature Partnership provides an effective and efficient framework for action to halt the decline in biodiversity and promote nature recovery, in line with local, national and international commitments. PCNPA's support has been key to the Partnership's success, which is recognised as a model for local action. The level of funding from external grant sources has been growing over recent years and looks set to continue over the next few years. However, the support of PCC and PCNPA is crucial to the successful operation of the Partnership and the modest cash contributions are vital to cover short term funding gaps where there are delays to grant awards, allowing retention of experienced staff.

### **Recommendation**

Receive and note the report on the work of the Pembrokeshire Nature Partnership.

### **Supporting Documents**

Pwll y Mor project report  
Natur am Byth Shril Carder Bee survey report  
PCNPA Wern Balsam Control project report  
Force for Nature - infographic

*Author: Anthony Rogers – Biodiversity Implementation Officer, Pembrokeshire Nature Partnership*

*Consultees: Aethne Cooke – Partnership Implementation Officer, Pembrokeshire Nature Partnership*

## Pwll y Môr - Project Report

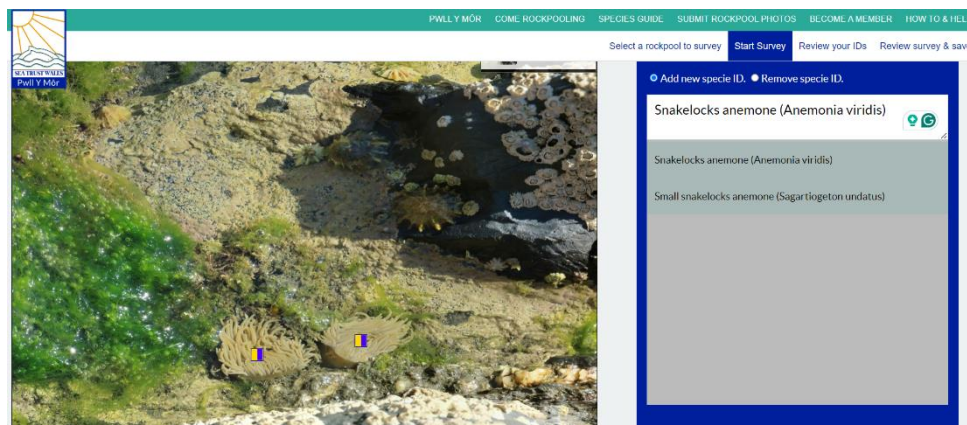


Reporting period: January 2024 – June 2024.

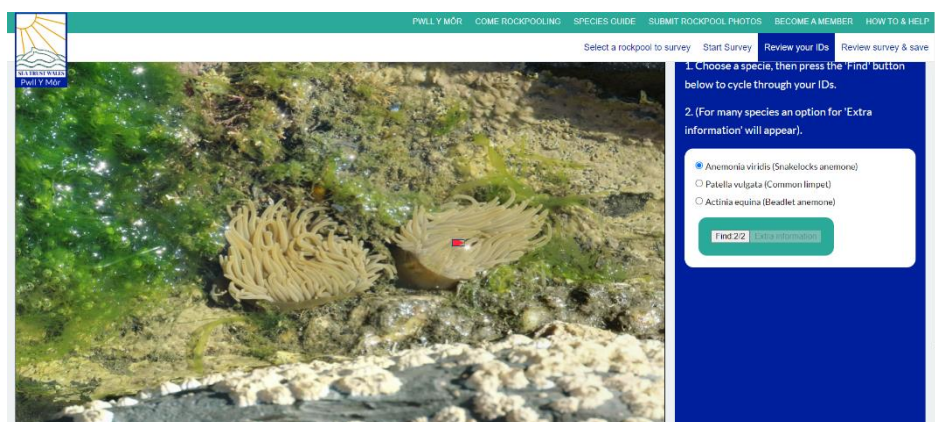
We developed Pwll y Môr – an online citizen science tool. Pwll y Môr is available to the public through <https://pwllymor.com/>. Whilst the funded project has ended, we continue to work on Pwll y Môr and will maintain and further develop the website, improving the user-friendliness of the site, adding more help sections, and uploading more educational videos.

Dr Jon James developed Pwll y Môr in collaboration with Sea Trust Wales. Rockpool photomosaics are created with many overlapping photos of a rockpool, stitched together to form a permanent high-resolution image. These photomosaics can then be uploaded to the website, allowing the user to virtually explore and survey a rockpool. Species in the rockpool can be identified and catalogued, using the online survey tool.

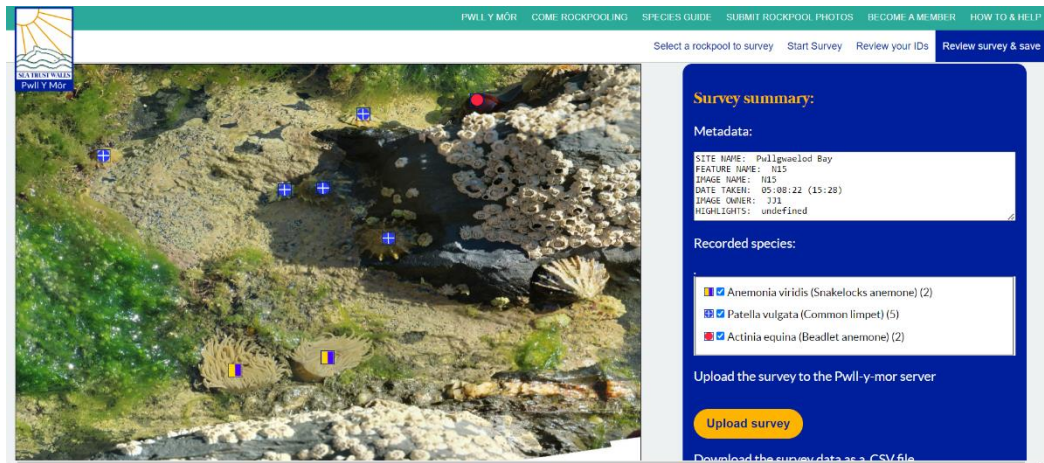
During the project, we achieved our aim to launch the user-friendly novel citizen science website and directly engaged the public and local schools with Pembrokeshire’s rocky shore habitat. As we advance, Pwll y Môr’s catalogue of Pembrokeshire rockpool photomosaics will create scope for future research projects, determining species distribution and habitat changes over time. The large amount of data collected through citizen science surveys can be used to monitor our rocky shore.



Screenshot from “Complete a Survey” on website. “Start Survey” tab - Surveying a rockpool on <https://pwllymor.com/>. Identifying and cataloguing Snakelocks anemones. The user searches for the species name in the search box, then double clicks on the individual to add an icon. Each icon is counted as one individual.

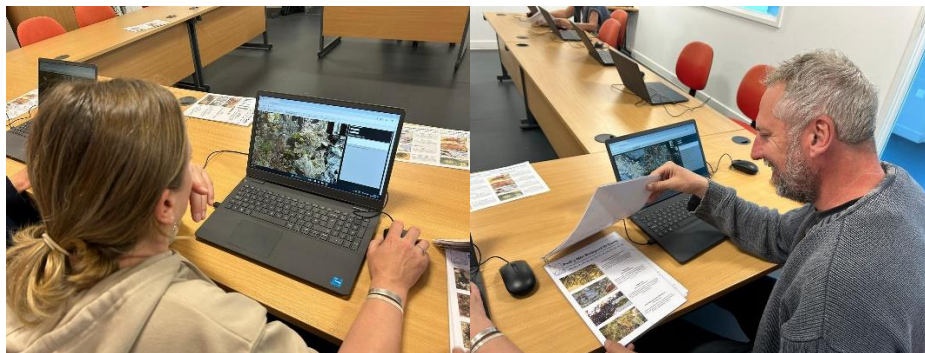


“Review your IDs” tab – User can review their identifications. Choosing “Find” highlights each of the catalogued individuals; “Extra Information” links the user to species information on The Marine Life Information Network. This allows the user to find out more about the species and check their identification.



“Review survey & save” – User can review their survey with a list of all recorded species and the number of individuals.

On the “Species Guide” section of the website, there is a downloadable user-friendly Pwll y Môr Species ID Guide and several educational videos. New videos will continue to be regularly uploaded to YouTube and the site, providing ongoing outreach for the project.



Pwll y Môr Workshop – North Pembrokeshire Community Learning Centre, Fishguard.

We ran two Pwll y Môr workshops during the project at North Pembrokeshire Community Learning Centre (Fishguard) and St Davids Memorial Hall. The workshops introduced participants to Pwll y Môr and Pembrokeshire’s rocky shore, highlighting its diversity, threats, and importance. The workshop included discussing the background, aims and plans for Pwll y Môr, and took participants through the website and a tutorial for completing a survey.

100% of workshop participants provided feedback that they enjoyed the workshop, learnt something new about Pembrokeshire’s marine life, would be happy to use the website at home, and felt inspired to try to protect Pembrokeshire’s rockpool wildlife. We also received many helpful and productive comments; a few examples – “I think making rockpooling accessible is very interesting and should definitely be pushed.”, “This would be great for people that have disabilities, that are not able to go to rockpools in person.”, “Surprisingly simple to use.”, “Adding a favourites list of common animals/features to limit time searching for observations.”.

We endeavour to run more workshops and Pwll y Môr training in the future, including how to take and submit rockpool photographs.



We ran three Secondary School sessions with Pwll y Môr, which included the pupils completing a survey and learning about Pembrokeshire’s rocky shore. We have four more sessions booked during this term and will continue to offer the sessions after the Summer holidays.



Pwll y Môr session with Ysgol Bro Gwaun.

We had great feedback from the school sessions with 93% of students rating the session as 4/5 or 5/5, and 97% of students stating that they enjoyed the survey. Comments from pupils - “Found out about more animals I didn’t know existed”, “It was fun to identify so many species in such a small area”, “It was very fun and interactive”, “I really liked how I could virtually explore rockpools”.

### Pwll y Môr Project Spend

Category	Items included	Cost
Staff costs	Project Manager (1 day/week in January), Marine Conservation Assistant (1 day/week Feb - June) working on the project development, education & outreach, writing for website, concept meetings, planning.	£2,403.87
Software development	Jon James software development of Pwll y Môr.	£1,200.00
Website development	Percolated Design website development. 13 hours, £50/hour.	£650.00
Online Storage for photos sent in by citizen scientists	Google Drive Storage increase to 2TB. Some large rockpools require 40+ individual images to create the rockpool photomosaic.	£79.99
Contingencies and subscriptions	Extra software development by Jon James.	£350.00
Sea Trust Interns on work placements	Working on the project 1 day/week.	£2,100.00
Project Manager, 0.5 days a week	Overseeing budget, project goals, funding reports.	£1,521.75
Extra Time - Marine Conservation Assistant	Marine Conservation Assistant (1 day/week) in June, any staff time over-budget of funding.	£266.03
<b>Total Project Cost</b>		<b>£8,183.84</b>
Funded by WWF - PNP		£4,683.86
In-kind funding by Sea Trust		£3,499.98

During the project, Dr Jon James also contributed 350+ hours of volunteered time to developing Pwll y Môr, working on website coding, software development, and concept planning.



## Survey report

# Shrill carder bee surveys in South Pembrokeshire

October 2023

Report prepared by Lawrence Harris on behalf of Bumblebee Conservation Trust. Contributors were Lawrence Harris, Nikki Gammans and Bex Cartwright.

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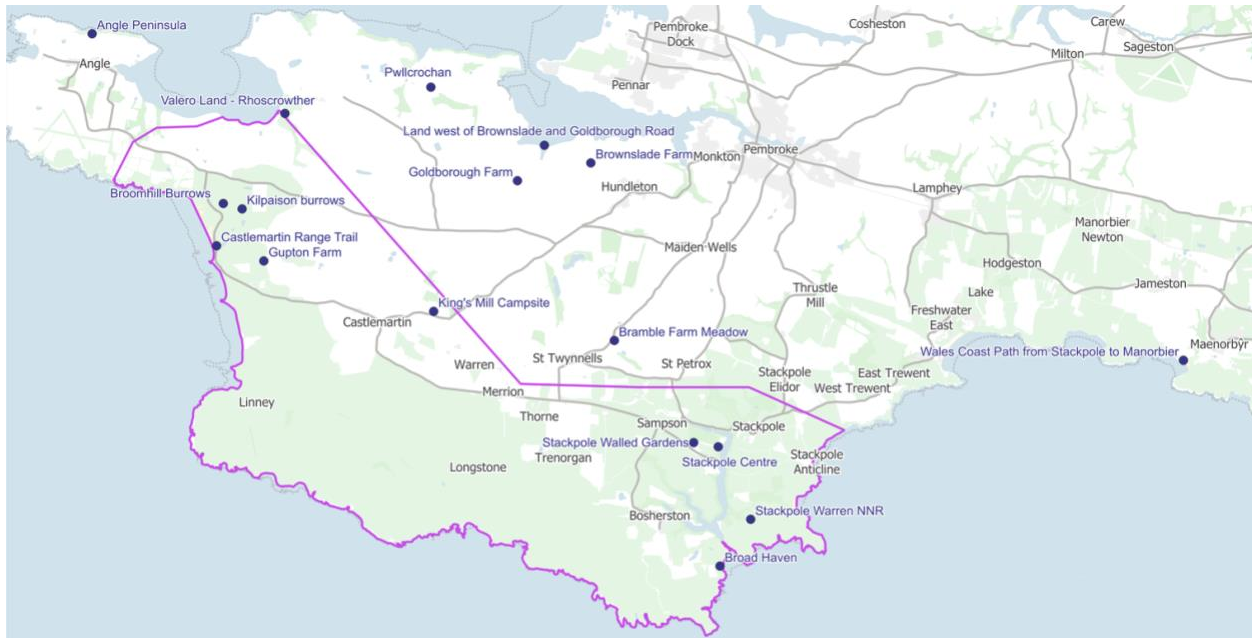
## Introduction

- The Shrill carder bee (*Bombus sylvarum*) is one of the most threatened bumblebee species in England and Wales. Once widespread, it now only exists in five isolated population areas. In at least two of these, numbers are worryingly low and appear to be declining. This, together with a range of other threats, means the species is vulnerable and at risk of further local extinctions – following its apparent loss from Salisbury Plain (a sixth population, last recorded in 2008) – and national declines.
- One of the five extant populations is found in South Pembrokeshire, centred on the Castlemartin MoD Firing Range. This population is one of those where numbers are considered to be in decline and where the Bumblebee Conservation Trust has concerns around the longevity of the population
- There is an urgent need for a coordinated and strategic approach to ensure that this iconic bee, named for its charismatic high-pitched buzz, not only survives – but once again thrives.
- As part of the National Shrill Carder Bee strategy, a local action plan has been developed for Pembrokeshire. At a meeting of the Steering Group for the Pembrokeshire LAP, it was noted that while the population on the Castlemartin Range itself is relatively well surveyed, little is known of the spread of the population across the wider Castlemartin Peninsula.
- As such, this survey was commissioned by the Pembrokeshire Shrill Carder Bee LAP Steering Group, in conjunction with the Pembrokeshire Local Nature Partnership to fill this knowledge gap. Funding for this survey was provided by the Pembrokeshire Local Nature Partnership.
- This project supports the overarching objective of the Pembrokeshire Local Nature Partnership in protecting, conserving and enhancing nature in Pembrokeshire by supporting our understanding of the Shrill carder bee in the county and where targeted action can be delivered.
- In particular, this project falls within Objective 5 of the Nature Recovery Action Plan for Pembrokeshire, to improve evidence, understanding and monitoring of this threatened species.
- Contributors to this report are:
  - Lawrence Harris
  - Bex Cartwright
  - Nikki Gammans

## Survey approach and methodology

- 10 sites were identified based on careful consideration of areas with suitable habitat but no/limited recent records of Shrilc carder bees. Sites were agreed by the LAP Steering Group and the Bumblebee Conservation Trust Science and Conservation teams.
- An additional 7 sites were surveyed as part of this survey work, meaning a total of 17 sites were subject to survey, several on more than one occasion.
- Surveys were undertaken across a number of sites agreed by the Steering Group, across the months of July, August and September. Funding was received for 12 days of survey. The surveyors were instructed to record:
  - Rare and scarce bumblebee species identified, with caste and location
  - All other bumblebee species identified
  - Forage plants identified, with a focus on positive indicator species for Shrilc carder bees, which are set out in Appendix 1.
- Surveys were completed by experienced surveyors from the Bumblebee Conservation Trust.

### Sites surveyed for this survey



Site name	Grid reference
Gupton Farm	SR 89411 98964
Kilpaison Burrows	SM 89396 00760
Stackpole Centre	SR 97639 96054
Stackpole NNR	SR 98095 94568
Broad Haven	SR 97671 93899
Stackpole Walled Gardens	SR 97216 96113
Broomhill Burrows	SM 88701 00448

Brownslade Farm	SM 95338 01181
Goldborough Farm	SM 94013 00860
Angle Peninsula	SM 86332 03514
Wales Coast Path from Stackpole to Manorbier	SM 86332 03514
Land west of Brownslade and Goldborough Road	SM9401
Valero Land - Rhoscrowther.	SM 8981 0207
Pwllcrochan	SM924025
King's Mill Campsite	SR 92500 98499
Castlemartin Range Trail	SR 88580 99684
Bramble Farm Meadow	SR95763 97974

## Overall survey outcomes

- No Shril carder bees were recorded on the sites selected for survey outside of the Castlemartin Range itself, despite surveys being undertaken across July – September, with some sites subject to survey on 2 separate occasions.
- Shril carder bees were identified on the Castlemartin Range on survey days, indicating that conditions and seasonality were suitable at the time of survey.
- The majority of the surveyed sites contained at least some positive indicator forage plants, and some contained habitat considered highly suitable for Shril carder bees. Due to proximity to prior records and the quality of forage a number of these sites are considered a high priority for future survey.
- Other rare carders (Moss carder and Brown banded carder) were recorded on a number of the surveyed sites.
- It is therefore recommended that several of the surveyed sites be subject to ongoing staff and volunteer-led survey efforts, and potentially included in the Natur am Byth project to ensure future suitable management (where not already the case).
- The sites identified as HIGH priority for further survey efforts are:
  - **Gupton Farm**
  - **Brownslade/Goldborough Farm**
  - **Stackpole Warren**
  - **Broad Haven**
  - **Valero - Rhoscrowther**

## Detailed survey outcomes by site

### 1. Gupton Farm

#### a. Site Details:

This site is a National Trust owned farm with a tenant farmer in situ. The site is well managed for wildlife, with significant areas of wildflowers and ongoing management for a range of invertebrate, plant and bird life. The site is in close proximity to the Castlemartin Firing Range, an important stronghold for Shrill carder bees with a number of nearby records.

The July survey covered the entire site, while the September survey mainly focused on the Red Clover ley crop fields e.g. SR896991.

Grid reference: **SR 89411 98964**

#### b. Survey details

Dates surveyed: 25 July, 1 September, 9 September

Weather:

25 July - Sunny, 20 C, light breeze

1 September – Sunny, 20, no wind

9 September – Sunny, 26 C, no wind

Surveyor: Lawrence Harris (25 July, 9 September), Bex Cartwright (1 September)

#### c. Overall site rating for Shrill carder bees:

- This site is considered to contain good Shrill carder bee habitat, recognizing the abundance of Red bartsia and the presence of other rare carder species.
- This site is **HIGH** priority for future survey and habitat management for SCB.

#### d. Rare and scarce bumblebees recorded:

- Moss carder (*B. muscorum*) - Queen and 3 workers on red clover and red bartsia at SR 89294 99699 (22 July)
- Brown banded carder (*B. humilis*) - 8 workers and males seen across site on Red clover across site (July)
- Brown banded carder (*B. humilis*) - 9 workers and males seen across site on Red clover across site (1 September)
- Brown banded carder (*B. humilis*) - 5 workers and males and 1 Queen seen across site on Red clover across site (9 September)

#### e. Other bumblebee species recorded:

- Common carder (*B. pascuorum*)

- Red tailed (*B. lapidarius*) – Abundant at site
- White tailed (*B. lucorum agg*) – Common at site
- Buff tailed (*B. terrestris*) – Abundant at site
- Early bumblebee (*B. pratorum*) – Scarce at site

**f. Positive indicator forage plants for Shrilc carder bee recorded:**

- Knapweed
- Red clover
- Red bartsia

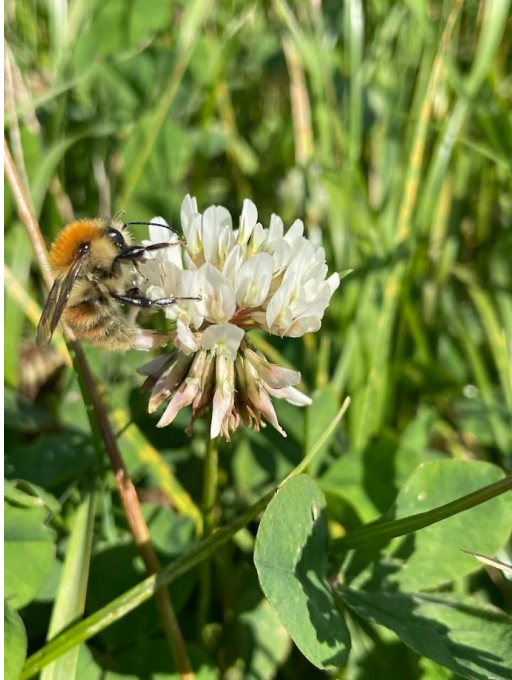
**g. Additional notes:**

- It is recommended that this site be targeted for future survey. We note that this site is a Natur am Byth core site and so surveys and management advice will be provided here in the coming years.
- The leys and cover crops will be a useful supplementary forage source for some bumblebee species and in other population areas *Bombus sylvarum* has been known to make use of clover leys.





Red Clover Ley at Gupton Farm



## 2. Kilpaison Burrows

### a. Site Details:

Kilpaison Burrows is a National Trust owned site with a tenant farmer in situ. The site appears to be lightly grazed, with cattle grazing compartment. The vegetation is dominated by grass and limited wildflowers are present.

Grid reference: **SM 89396 00760**

### b. Survey details:

Dates surveyed: 25 July, 9 September

Weather: 25 July - Sunny, 20 C, light breeze;

9 September – Sunny, 26 C, no wind

Surveyor: Lawrence Harris

### c. Overall site rating for Shrill carder bees:

- Limited positive indicator plants were recorded here, and the site is relatively undergrazed.
- Relatively low numbers of bumblebees were recorded in comparison to the neighbouring site of Gupton Farm. This site is a **LOW** priority for further survey.

### d. Rare and scarce bumblebees recorded:

- None

- e. **Other bumblebee species recorded:**
  - Common carder (*B. pascorum*) – Common at site
  - Red tailed (*B. lapidarius*) – Common at site
  - Buff tailed (*B. terrestris*) – Common at site
- f. **Positive indicator forage plants for Shrill carder bee recorded:**
  - Knapweed
  - Birds foot trefoil
  - Red clover
  - Spear thistle
- g. **Notes:** This site could benefit from changes to the grazing regime, particularly through the introduction of ponies or other similar grazing stock. It is recommended that advice be given as part of Natur am Byth.

### 3. Stackpole Centre

#### a. Site Details:

The Stackpole Centre is a National Trust owned site, with visitor center, woodland and some open areas.

Grid reference: **SR 97639 96054**

#### b. Survey details:

Date of survey: 4 August, 17 September

Weather:

4 August: Cloudy, 17C, light wind

17 September: Overcast, 15 C, light wind

Surveyor: Nikki Gammans (4 August); Lawrence Harris (17 September)

#### c. Overall site rating for Shrill carder bees:

- Limited suitable forage was found at the Stackpole Centre and immediate vicinity.
- This site is considered **LOW** priority for further survey.

#### d. Rare and scarce bumblebees recorded:

- None

#### e. Other bumblebee species recorded:

- Common carder (*B. pascorum*)
  - Red tailed (*B. lapidarius*)
  - White tailed (*B. lucorum* agg)
  - Buff tailed (*B. terrestris*)
  - Early bumblebee (*B. pratorum*)
- f. Positive indicator forage plants for Shrill carder bee recorded:**
- Bramble

#### 4. Stackpole NNR.

**a. Site Details:**

Stackpole Warren NNR, is a National Trust owned site that includes areas of dune and coastal/cliff habitat.

Grid reference: **SR 98095 94568**

**b. Survey details:**

Date of survey: 7 August, 17 September

Weather:

7 August: Sunny, 18 C, no wind

17 September: Overcast, 15 C, light wind

Surveyor: Nikki Gammans (4 August); Lawrence Harris (17 September)

**c. Overall site rating for Shrill carder bees:**

- This site is considered to contain good Shrill carder bee habitat, recognizing the abundance of suitable forage, proximity to known sites and the presence of other rare carder species.
- This site is considered a **HIGH** priority for future survey.

**d. Rare and scarce bumblebees recorded:**

- Moss carder (*Bombus muscorum*):
  - 2x worker on Viper's bugloss at SR 98182 94970
  - Queen on Spear Thistle at SR 98270 94712
- Brown banded (*Bombus humilis*):
  - Worker on Vipers bugloss at SR 98270 94712

**e. Other bumblebee species recorded:**

- Common carder (*B. pascorum*)
- Red tailed (*B. lapidarius*)
- Buff tailed (*B. terrestris*)
- Garden bumblebee (*B. hortorum*)

**f. Positive indicator forage plants for Shrill carder bee recorded:**

- Knapweed

- Birds foot trefoil
- Red bartsia
- Bramble
- Red clover
- Vipers bugloss

## 5. Broad Haven

### a. Site Details:

Broad Haven is a National Trust owned coastal site and beach with areas of flower rich meadow and dune habitat.

Grid reference: **SR 97671 93899**

### b. Survey details:

Date of survey: 7 August, 17 September

Weather:

7 August: Sunny, 18 C, no wind

17 September: Overcast, 15 C, light wind

Surveyor: Nikki Gammans (4 August); Lawrence Harris (17 September)

### c. Overall site rating for Shrill carder bees:

- This site is considered to contain good Shrill carder bee habitat, recognizing the abundance of suitable forage, proximity to known sites and the presence of other rare carder species.
- It is a HIGH priority and it is recommended that this site be targeted for future survey.

### d. Rare and scarce bumblebees recorded:

- Moss carder:
  - Worker on Self Heal at SR 97634 93933
- Brown banded:
  - Worker on Knapweed at SR 97634 93933

### e. Other bumblebee species recorded:

- Common carder (*B. pascorum*)
- Red tailed (*B. lapidarius*)
- Buff tailed (*B. terrestris*)

### f. Positive indicator forage plants for Shrill carder bee recorded:

- Knapweed
- Birds foot trefoil
- Red bartsia
- Bramble
- Red clover

- Vipers bugloss
- Yellow rattle
- Devil's bit scabious

## 6. Stackpole Walled Gardens

### a. Site Details:

The Stackpole Centre is a horticultural gardens situated near the Stackpole Centre and just outside the boundary of the NNR. It contains a range of cultivated and wild forage plants.

Grid reference: **SR 97216 96113**

### b. Survey details:

Date of survey: 6 August

Weather: Cloudy, 18 C, windy

Surveyor: Nikki Gammans

### c. Overall site rating for Shrill carder bees:

- While the site contains a large number of potentially suitable horticultural forage plants, it is on the periphery of the known range of the Shrill carder bee, and no other rare carders were recorded here. It is a LOW priority for future survey.
- Further monitoring of this site could be considered as part of NaB.

### d. Rare and scarce bumblebees recorded:

- None

### e. Other bumblebee species recorded:

- Common carder (*Bombus pascuorum*)
- Buff tailed (*Bombus terrestris*)
- White tailed (*Bombus lucorum agg*)

### f. Positive indicator forage plants for Shrill carder bee recorded:

- Black horehound

## 7. Broomhill burrows

### a. Site Details:

Broomhill Burrows forms the Northwestern tip of the Castlemartin Firing Range. The habitat at Broomhill Burrows is relatively poor, and provides limited forage for Shrill Carder Bees. For comparison, the neighbouring area on the Castlemartin firing range includes very high densities of red bartsia, red clover and other positive indicator species and on the day Broomhill was surveyed Shrill carder bees were observed on neighbouring sites on the Range.

Grid reference: **SM 88701 00448**

Month: 1 August

**b. Survey details:**

Date: 1 August

Weather: Some cloud, 19 C, light wind

Surveyor: Lawrence Harris

**c. Overall site rating for Shrill carder bees:**

- This site is considered poor habitat with limited suitable forage availability. This area is a **LOW** priority for future survey.

**d. Rare and scarce bumblebees recorded:**

- None

**e. Other bumblebee species recorded:**

- Common carder (*Bombus pascuorum*)
- Buff tailed (*Bombus terrestris*)

**f. Positive indicator forage plants for Shrill carder bee recorded**

- Red clover
- Knapweed

## **8. Brownslade Farm.**

**a. Site Details:**

Brownslade farm is a large livestock farm, in the same family ownership as Goldborough Farm.

Grid reference: **SM 95338 01181**

**b. Survey details**

Date: 5 August

Weather: Cloudy, 16 C, light breeze

Surveyor: Nikki Gammans

**c. Overall site rating for Shrill carder bees:**

- This site is considered to contain good Shrill carder bee habitat, recognizing the abundance of suitable forage.
- Current hay cutting and grazing of this site has created pockets of high quality habitat that would be suitable for SCB. It is a **HIGH** priority site, and it is recommended that this site be subject to future survey, and potentially including in Natur am Byth as an additional site.

**d. Rare and scarce bumblebees recorded:**

- Moss carder (*Bombus muscorum*):
  - Male on Bramble at SM 95329 00991

**e. Other bumblebee species recorded:**

- Common carder (*Bombus pascuorum*)
- Red tailed (*Bombus lapidarius*)
- Buff tailed (*Bombus terrestris*)
- Garden bumblebee (*Bombus hortorum*)

**f. Positive indicator forage plants for Shrill carder bee recorded:**

- Knapweed
- Birdsfoot trefoil
- Red bartsia
- Bramble
- Vipers bugloss

## 9. Goldborough Farm

**a. Site Details:**

Goldborough is a large livestock farm in the North Castlemartin peninsula. Some fields had reasonably strong forage diversity, while others had recently been cut for hay leaving it hard to make a robust assessment.

Grid reference: **SM 94013 00860**

**b. Survey details**

Date: 5 August

Weather: Cloudy, 16 C, light breeze

Surveyor: Nikki Gammans

**c. Overall site rating for Shrill carder bees:**

- This site is considered to contain good Shrill carder bee habitat, recognizing the abundance of suitable forage.
- Current hay cutting and grazing of this site has created pockets of high quality habitat that would be suitable for SCB. It a **HIGH** priority and it is recommended that this site be subject to future survey, and potentially including in Natur am Byth as an additional site.

- **Recommend additional surveys**

**d. Rare and scarce bumblebees recorded:**

- Moss carder (*Bombus muscorum*):
  - Worker and 2 males on knapweed at SM 94292 01213

**e. Other bumblebee species recorded:**

- Common carder (*Bombus pascuorum*)
- Red tailed (*Bombus lapidarius*)
- White tailed (*Bombus lucorum agg*)
- Buff tailed (*Bombus terrestris*)

**f. Positive indicator forage plants for Shrill carder bee recorded:**

- Red bartsia
- Birdsfoot trefoil



- Bramble
- Red clover
- Knapweed
- Spear thistle

## 10. Angle Peninsula

### a. Site Details:

This site comprises a large area of coastal grassland and dune habitat. For access reasons this site was surveyed mainly on the banks and verges of the footpath network.

The area consists of a dense network of small fields bounded by mostly intact native hedgerows. Land use is primarily arable to the west of the peninsula and pasture to the east.

At the time of the visit the coastal footpath network where the greatest abundance of forage plants can be found, had been mown, so little was in flower apart from taller, woody species such as Ivy.

In the vicinity of West Angle Bay a number of flower rich locations were identified, with an abundance of Betony, Red Clover and Knapweed. No Shrill carder bees were identified here, however Brown banded carder (*Bombus humilis*) was recorded, indicating this area may be suitable for further survey in future.

Grid reference: **SM 86332 03514**

### b. Survey details

Date: 25 July, 29 August, 16 September

Weather:

25 July: Sunny, 19 C, no wind

29 August: Sunshine with cloud, 18 C, gentle wind

16 September: Cloudy, 18 C, light breeze

Surveyor: Lawrence Harris (July/Sept); Bex Cartwright (August)

### c. Overall site rating for Shrill carder bees:

- Some areas of good habitat were identified, with small patches rich in suitable forage in some areas of coast path.
- Priority for further survey work and advisory visits to landowners in the area is **MEDIUM**. Advice should focus on establishing appropriate cutting regimes to the footpath network to maintain availability of forage as well as keeping the footpath accessible for users.

### d. Rare and scarce bumblebees recorded:

- Brown banded (*Bombus humilis*):
  - On red clover at SM84395 02896

**e. Other bumblebee species recorded:**

- Common carder (*Bombus pascorum*)
- Red tailed (*Bombus lapidarius*)
- White tailed (*Bombus lucorum agg*)
- Buff tailed (*Bombus terrestris*)

**f. Positive indicator forage plants for Shrill carder bee recorded:**

- Knapweed
- Red Clover
- Common Fleabane
- Tufted Vetch
- Bramble
- Bird's foot trefoil

- g. Notes:** There is a sunflower field at SM85240 03390. This could not be accessed, and the flowers had largely gone over but it would be worth enquiring who the landowner is and getting access to survey when in flower.

There may be opportunities to encourage landowners in the area to diversify some areas of the fields on the peninsula to benefit bumblebees or encourage flower strips or uncut margins alongside the dense hedgerow network. Other opportunities for engagement might exist at Chapel Bay Fort & Museum, Angle village and St Mary's Church. Castle Farm and West Angle Camping and Caravan sites.

## **11. Wales Coast Path from Stackpole Quay to Manorbier**

**a. Site Details:**

The Wales Coast Path was walked from Stackpole to Manorbier, reflecting SCB habitat modelling indicating this area could contain areas of suitable habitat. Habitat and fields accessible from the public footpath network only were surveyed. Significant cutting had occurred with limited flowering plants seen.

Grid reference: **SS 06041 97617 to SR 99309 95775**

**b. Survey details**

Date: 22 September

Weather: Sunny, 15 C, Light wind with gusts

Surveyor: Lawrence Harris

**c. Overall site rating for Shrill carder bees:**

- Limited habitat and highly variable management practices. The relative isolation of this section of Coast Path from *Bombus sylvarum* records indicates that this site has a **LOW** priority.

**d. Rare and scarce bumblebees recorded:**

- None
- e. **Other bumblebee species recorded:**
  - Common carder (*Bombus pascorum*)
  - Red tailed (*Bombus lapidarius*)
  - Buff tailed (*Bombus terrestris*)
  - Garden bumblebee (*Bombus hortorum*)
- f. **Positive indicator forage plants for Shrill carder bee recorded:**
  - Knapweed
  - Bird's foot trefoil
  - Bramble
  - Devil's bit scabious

## 12. Land west of Brownslade and Goldborough Road

### a. Site Details:

The aim was to investigate locations here with historical records of Shrill Carder Bumblebee and the area surveyed focussed on the coastal path and fields adjacent taking the western path from Whim Cottage.

Grid references: **SM9401**

### b. Survey details

Date: 29 August

Weather: Cloudy, 17 C, light breeze

Surveyor: Bex Cartwright

### c. Overall site rating for Shrill carder bees:

- Given the presence of suitable forage and possibility of sensitive management, this site is rated **MEDIUM** priority for future survey.

### d. Rare and scarce bumblebees recorded:

- None

### e. Other bumblebee species recorded:

- Common carder (*Bombus pascuorum*)

### f. Positive indicator forage plants for Shrill carder bee recorded:

- Birdsfoot trefoil
- Red bartsia
- Dandelion
- Red Clover

### g. Notes:

- Some of these fields appeared to be largely unimproved or semi-improved, particularly those beneath the path of the pylons. At the time of

the visit, these fields were being grazed by a small number of cattle (4 seen). The footpath had been recently cut and arisings left (Image 2). Only the edges of the fields were looked at to avoid straying off the public footpath.

- Verges along Goldborough Road were abundant with Wild Strawberry, Meadowsweet, Red Campion and Meadow Vetchling and the hedgerow network appeared well managed. At the time of the visit there was abundant fruit and berries suggesting a sensitive cutting regime.
- To establish landowner contact information for this area as there is good potential for enhancing these fields and perhaps advising on the grazing regime to maximise presence of species such as Red Bartsia and Greater Bird's Foot Trefoil. John Hayes did provide me with some names. Also to establish a sensitive mowing regime on the coastal footpath as this also had evidence of good forage plant diversity but had been mown just prior to the visit and arisings left in place.



Image 1 Red Bartsia at SM9410201411



Image 2 – Main coastal footpath which had recently been mown

### 13. Valero Land - Rhoscrowther.

#### a. Site Details:

Site visits accompanied by John Hayes (Valero). Initially focussed on an area of grass scrub mosaic at **SM8981 0207**. Then a walk following the coastal path up to Sawdern Point and Fort Popton from SM 89710 02086 to SM 89630 03708. A second area of scrub habitat at SM8986202333 was also surveyed.

Grid reference: **SM8981 0207**

#### b. Survey details

Date: 30 August

Weather: Cloudy, 16 C, light breeze

Surveyor: Bex Cartwright

#### c. Overall site rating for Shrill carder bees:

- This area and surrounding sites are a **HIGH** priority for further survey work and advisory work. The diversity of flowering plants is excellent with a good continuity of forage.

#### d. Rare and scarce bumblebees recorded:

- Brown banded (*Bombus humilis*):

- Male on knapweed at SM89810207

**e. Other bumblebee species recorded:**

- Common carder (*Bombus pascuorum*)
- Red tailed (*Bombus lapidarius*)
- White tailed (*Bombus lucorum agg*)
- Buff tailed (*Bombus terrestris*)

**f. Positive indicator forage plants for Shrill carder bee recorded:**

- Red bartsia
- Bird's foot trefoil
- Bramble
- Red clover
- Knapweed
- Common Fleabane
- Tufted vetch

**g. Additional notes:**

- Possibly additional funding is needed for maintenance of the grass and scrub mosaic areas particularly for management of scrub. Some of this is carried out ad-hoc when suitable machinery is on site. John is great at taking advantage of these opportunities but possibly some longer-term plans for ongoing management are needed.
- On the way up to Popton Fort, we observed most of the forage plants and bumblebees feeding on the flower-rich trackside verges and grassland areas. On the day of the survey, contractors were out mowing and during and immediately following our survey, the verges were being cut short and all forage removed. I would advise working with the team responsible for drawing up the mowing contracts to see whether management that is more sympathetic to wildlife could be implemented. This could still include mowing but reducing frequency of mowing and raising mowing heights so that key forage plants such as Bird's Foot Trefoil which can flower on shorter stems, is not removed with each mow. Red Bartsia, a key late-season forage plant was also been mown.
- It would be useful to be able to access further areas of the Valero owned land if possible in future, including the operational site.



Image 3 – Grassland at SM8981 0207

## 14. Pwllcrochan – Power Station Sports Ground and Pwllcrochan Church.

### a. Site Details:

Walked the areas around the Pwllcrochan Sports ground (**SM924025**) and Pwllcrochan Church and nature reserve (**SM921026**) and lanes in between and up to Pwllcrochan Flats/Martin’s Haven looking for any areas of promising habitat for Shrill Carder.

Grid reference: **SM924025**

### b. Survey details

Date: 30 August

Weather: Cloudy, 16 C, light breeze

Surveyor: Bex Cartwright

### c. Overall site rating for Shrill carder bees:

- Likelihood of suitable Shrill Carder habitat in this immediate area I would expect to be **LOW**. However, if access can be gained to the power station land, that would be worth focusing on for future surveys and advisory work.

- d. **Rare and scarce bumblebees recorded:**
  - None
- e. **Other bumblebee species recorded:**
  - Common carder (*Bombus pascorum*)
- f. **Positive indicator forage plants for Shrill carder bee recorded:**
  - Bramble
  - Knapweed
  - Tufted vetch
- g. **Additional notes:**
  - Main focus should be to obtain access to the Power station land and carry out surveys here in coming years. A point about churchyards in the area though, there is an opportunity here to engage with several churchyards of the Castlemartin peninsula to see if there are opportunities for sensitive management.

## 15. **King's Mill Campsite, near Castlemartin.**

### a. **Site Details:**

Paddock, meadows, woodlands and main campsite areas of King's Mill Camping (**SR9298**) surveyed at invitation of the site owners. The site is managed with nature and sustainability in mind and is part of the network of Green Camping Club sites. Across the site there is an abundance of flowers and several key forage plant species for Shrill Carder Bee. The combination of flower-rich habitat, rough grasslands, scrub, hedgerows and woodland existing in a mosaic make this an excellent site for bumblebees and wildlife in general. The campsite areas themselves are also managed sensitively. There would be good continuity of flower-rich habitat here although it is difficult to assess early season forage availability due to the timing of the survey. The species present are indicative of damp soils and possibly relatively rich and fertile conditions.

Grid reference: **SR 92500 98499**

### b. **Survey details**

Date: 30 August

Weather: Cloud, 16 C, light breeze

Surveyor: Bex Cartwright

### c. **Overall site rating for Shrill carder bees:**

- Due to the proximity to known sightings of *Bombus sylvarum* and also with current records of *Bombus humilis*, this would be an excellent site to continue to engage with if the site owners were amenable to that.
- Priority is **MEDIUM**.



**d. Rare and scarce bumblebees recorded:**

- Brown banded (*Bombus humilis*):
  - Worker on Marsh Thistle at SR9238 9857

**e. Other bumblebee species recorded:**

- Common carder (*Bombus pascuorum*)
- Red tailed (*Bombus lapidarius*)
- White tailed (*Bombus lucorum agg*)
- Buff tailed (*Bombus terrestris*)

**f. Positive indicator forage plants for Shrill carder bee recorded:**

- Bramble
- Knapweed
- Tufted vetch
- Common fleabane
- Flag iris
- Red clover

**g. Additional notes:**

- The site is already managed sensitively and with wildlife in mind however the meadows would benefit from some additional and more regular management, e.g. rotational cut and collect and/or light grazing when conditions are suitable and if the appropriate infrastructure was in place.



## 16. Castlemartin Range Trail

### a. Site Details:

The Castlemartin Range Trail was walked along the outskirts of the Castlemartin ranges from Gupton Burrows/Freshwater West towards Castlemartin village.

Castlemartin churchyard was visited briefly but the grounds had been recently cut but the arisings not collected. Around Castlemartin village towards the churchyard were mainly improved silage fields and rye grass/clover leys.

Grid reference: **SR 88580 99684**

### b. Survey details:

Date: August 1, September 2, September 15

Weather:

August 1: Some cloud, 18 C, light wind

Sept 2 – Sunny, 21 C, no wind

Sept 15 - Cloudy, 18 C, light wind

Surveyor: Bex Cartwright (Sept 2), Lawrence Harris (1 August, Sept 15)

### c. Overall site rating for Shrill carder bees:

- Due to the proximity to known sightings of *Bombus sylvarum* this site is considered a **MEDIUM** priority for future survey and habitat management.

### d. Rare and scarce bumblebees recorded:

- Brown banded (*Bombus humilis*):
  - Male on Ragwort at SR 88580 99684 to SR 90068 98665
  - Queen and worker on Red clover at SR 88580 99684 to SR 90068 98665
  - Worker on red clover at SR 95145 95745

### e. Other bumblebee species recorded:

- Buff tail (*Bombus terrestris*)
- White tail (*Bombus lucorum* agg.)
- Common Carder (*Bombus pascuorum*)
- Red tailed (*Bombus lapidarius*)

### f. Positive indicator forage plants for Shrill carder bee recorded:

- Tufted vetch
- Common fleabane
- Bird's foot trefoil
- Red clover
- Red bartsia

### g. Additional notes:

- Some parts of the trail appear to be well managed and have a good range of key forage plants available e.g. the stretch parallel to Gupton Farm and Brownslade Burrows. Some parts of the trail however are rank and overgrown and have little to no forage available areas towards and

adjacent to Castlemartin. Some of the land adjacent to the trail appear to be intensively grazed, improved and with little forage available

## 17. **Bramble Farm Meadow**

### a. **Site Details:**

A private meadow (gated entrance at SR95763 97974) just under 3ha in size (approx.) at Chapel Hill just to the east of the village of St Twynells. We got this contact via Clare Flynn and we surveyed the meadow together. The meadow is an area of unimproved grassland, as far as The field has not been fertilised or cultivated. It may have had irregular management in recent years but it hasn't been left unmanaged. In many years a hay crop has been taken and sometimes the field has been grazed. This year a small number of ponies have been found (American Quarter-back horses) to graze the field over winter but it has not been cut. It has only recently been purchased by the current owners, to save it from agricultural improvement.

Grid reference: **SR95763 97974**

Month: September

### b. **Survey details**

Date: 1 September

Weather: Sunny 20 C, no wind

Surveyor: Bex Cartwright

### c. **Overall site rating for Shrill carder bees:**

- Due to the proximity to known sightings of *Bombus sylvarum* this site is considered a **MEDIUM** priority for future survey and habitat management.

### d. **Rare and scarce bumblebees recorded:**

- Brown banded (*Bombus humilis*):
  - Male on Ragwort at SR 88580 99684 to SR 90068 98665
  - Queen and worker on Red clover at SR 88580 99684 to SR 90068 98665

### e. **Other bumblebee species recorded:**

- Buff tailed (*Bombus terrestris*)
- White tailed (*Bombus lucorum agg*)
- Common carder (*Bombus pascuorum*)
- Red tailed (*Bombus lapidarius*)

### f. **Positive indicator forage plants for Shrill carder bee recorded:**

- Knapweed
- Common fleabane
- Bird's foot trefoil
- Devil's bit scabious
- Tufted vetch

**g. Additional notes:**

- Contact details via Clare Flynn. The landowner is already in contact with Pembs Coast NP staff who are offering advice but it would make an excellent site for resurvey, and as a great source of seed or green-hay for other sites in the local area. *Succisa pratensis* is abundant along with several other key forage plants.

**Further Reading:**

Conservation Strategy for Shrill Carder Bee 2020-2030

<https://www.bumblebeeconservation.org/a-conservation-strategy-for-the-shrill-carder-bee/#:~:text=Loss%20and%20fragmentation%20of%20habitat,of%20connected%20flower%20rich%20habitats>.

Shrill Carder Bee Knowledge Review

<https://www.bumblebeeconservation.org/wp-content/uploads/2017/07/Shrill-carder-bee-species-knowledge-review-10.19.pdf>

## Appendix 1:

Table 1: Key Shrill carder bee forage plants. Not all species listed occur naturally in Pembrokeshire

<b>Common name</b>	<b>Scientific name</b>	<b>Suitability</b>
Common comfrey	<i>Symphytum officinale</i>	Damp ground
Yellow flag iris	<i>Iris pseudacorus</i>	Damp ground
Bugle	<i>Ajuga reptans</i>	Damp ground/woodland edge
Meadow vetchling	<i>Lathyrus pratensis</i>	General
Red clover	<i>Trifolium pratense</i>	General
Greater bird's-foot trefoil	<i>Lotus pendunculatus</i>	Damp ground/general
Tufted vetch	<i>Vicia cracca</i>	Damp ground/general
Common knapweed	<i>Centaurea nigra</i>	Damp ground/general
Devil's-bit scabious	<i>Succisa pratensis</i>	Damp ground/general
Common fleabane	<i>Pulicaria dysenterica</i>	Damp ground/general
Bugle	<i>Ajuga reptans</i>	Woodland edge/general
White deadnettle	<i>Lamium album</i>	Woodland edge/general
Bramble	<i>Rubus fruticosus</i>	Woodland edge/general
Bird's-foot trefoil	<i>Lotus corniculatus</i>	Woodland edge/general
Black horehound	<i>Ballota nigra</i>	Woodland edge/general
Field scabious	<i>Knautia arvensis</i>	Woodland edge/general
Yellow rattle	<i>Rhinanthus minor</i>	Dry ground/general
Vipers bugloss	<i>Echium vulgare</i>	Dry ground/general
Greater knapweed	<i>Centurea scabiosa</i>	Dry ground/general
Kidney vetch	<i>Anthyllis vulneraria</i>	Dry ground/general
Red bartsia	<i>Odontites vernus</i>	Dry ground/general

## Appendix 2: Rare and scarce bumblebee records

<b>Common name</b>	<b>Scientific name</b>	<b>Sites</b>	<b>Grid references</b>
<b>Brown banded carder bee</b>	<b><i>Bombus humilis</i></b>	<i>King's Mill campsite</i>	<i>SR9238 9857</i>
		<i>Bramble Farm Meadow</i>	<i>SR 88580 99684, SR 88580 99684</i>
		<i>Castlemartin Range Trail</i>	<i>SR 88580 99684, SR 88580</i>
		<i>Valero - Rhoscrowther</i>	<i>SM89810207</i>
		<i>Angle peninsula</i>	<i>SM84395 02896</i>
		<i>Broad Haven</i>	<i>SR 97634 93933</i>
		<i>Stackpole NNR</i>	<i>SR 98270 94712</i>
		<i>Gupton Farm</i>	<i>SR 89411 98964 (general grid – records across site)</i>
<b>Moss carder bee</b>	<b><i>Bombus muscorum</i></b>	<i>Goldborough Farm</i>	<i>SM 94292 01213</i>
		<i>Brownslade Farm</i>	<i>SM 95329 00991</i>
		<i>Broad Haven</i>	<i>SR 97634 93933</i>
		<i>Stackpole NNR</i>	<i>SR 98182 94970, SR 98270 94712</i>
		<i>Gupton Farm</i>	<i>SR 89294 99699</i>

### Appendix 3: Other bumblebee species and site grid references

Common name	Scientific name	Sites
Buff tailed	<i>Bombus terrestris</i>	<p>Broomhill Burrows (SM 88701 00448)</p> <p>Goldborough Farm (SM 94013 00860)</p> <p>Brownslade Farm (SM 95338 01181)</p> <p>Angle Peninsula (SM 86332 03514)</p> <p>Valero – Rhoscrowther (SM8981 0207)</p> <p>King’s Mill Campsite (SR 92500 98499)</p> <p>Castlemartin Range Trail (SR 88580 99684)</p> <p>Bramble Farm Meadow (SR95763 97974)(SR95763 97974)</p>
White tailed	<i>Bombus lucorum agg.</i>	<p>Stackpole Walled Gardens (SR 97216 96113)</p> <p>Goldborough Farm (SM 94013 00860)</p> <p>Angle Peninsula (SM 86332 03514)</p> <p>Valero – Rhoscrowther (SM8981 0207)</p> <p>King’s Mill Campsite (SR 92500 98499)</p> <p>Castlemartin Range Trail (SR 88580 99684)</p> <p>Bramble Farm Meadow (SR95763 97974)</p>
Common carder	<i>Bombus pascuorum</i>	<p>Stackpole Walled Gardens (SR 97216 96113)</p> <p>Broomhill Burrows (SM 88701 00448)</p> <p>Goldborough Farm (SM 94013 00860)</p> <p>Brownslade Farm (SM 95338 01181)</p> <p>Angle Peninsula (SM 86332 03514)</p> <p>Wales Coast Path from Stackpole to Manobier (SS 06041 97617 to SR 99309 95775)</p> <p>Land West of Brownslade and Goldborough Road (SM9401)</p> <p>Valero – Rhoscrowther (SM8981 0207)</p> <p>Pwllcrochan (SM924025)</p>

		<b>King's Mill Campsite (SR 92500 98499)</b> <b>Castlemartin Range Trail (SR 88580 99684)</b> <b>Bramble Farm Meadow (SR95763 97974)</b>
Early	<i>Bombus pratorum</i>	
Garden	<i>Bombus hortorum</i>	<b>Brownslade Farm (SM 95338 01181)</b> <b>Wales Coast Path from Stackpole to Manobier (SS 06041 97617 to SR 99309 95775)</b>
Red tailed	<i>Bombus lapidarius</i>	<b>Goldborough Farm (SM 94013 00860)</b> <b>Brownslade Farm (SM 95338 01181)</b> <b>Angle Peninsula (SM 86332 03514)</b> <b>Wales Coast Path from Stackpole to Manobier (SS 06041 97617 to SR 99309 95775)</b> <b>Valero – Rhoscrowther (SM8981 0207)</b>  <b>King's Mill Campsite (SR 92500 98499)</b> <b>Castlemartin Range Trail (SR 88580 99684)</b> <b>Bramble Farm Meadow (SR95763 97974)</b>



# 2023 Report of Management Efforts of Himalayan Balsam, *Impatiens glandulifera* for the Wern Catchment, Rhosfach



Matthew De Martino West Wales Sustainable Woodland Services

November 2023  
V3

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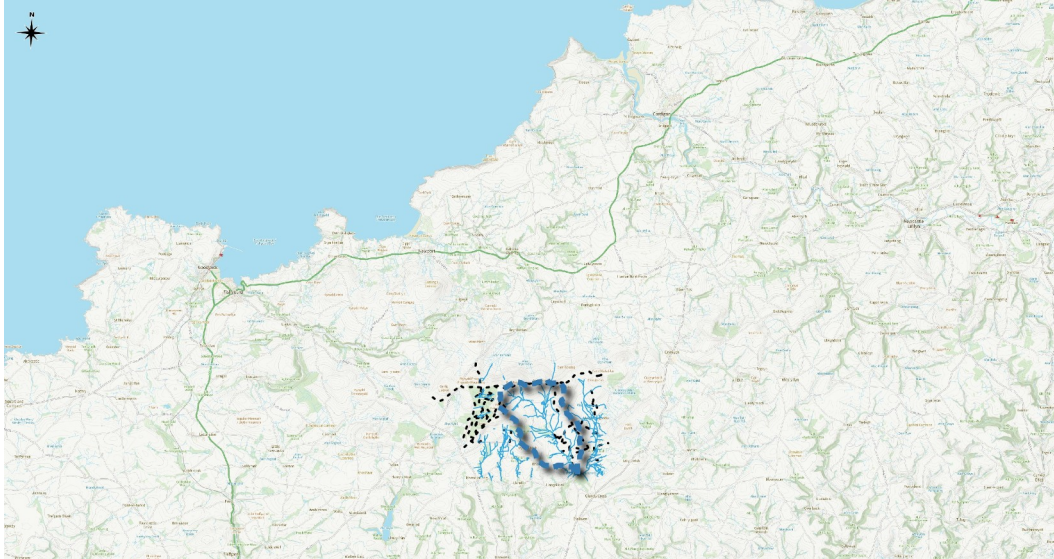
Map 2 Northern Front of Impatiens

Map 3 Western Front of Impatiens

Map 4 Winter cut areas

## 1. Background and Summary

This report follows on from the initial survey carried out by myself in Autumn of 2022 for the target species of *Impatiens glandulifera*. The Wern Catchment is situated in the Preseli mountains in Pembrokeshire. The survey area covered a significant area which can be seen as the blue dotted line in the map below.



*Map 1 Overview of Wern Catchment*

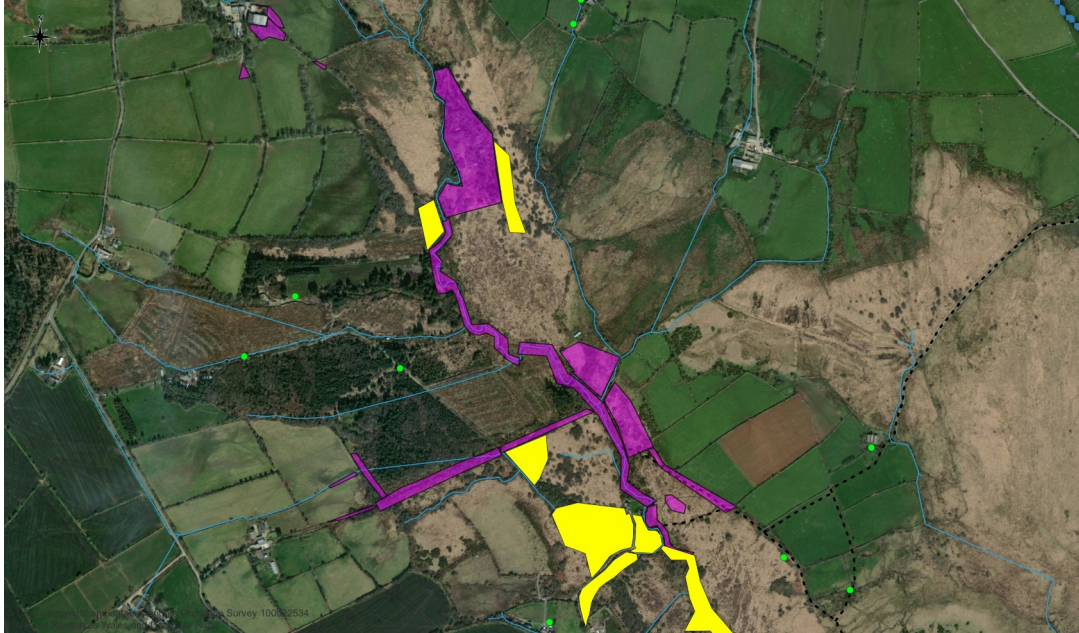
## 2. Methods

The management this summer has been carried out primarily by cutting of plants before flowering and seeding. Where access has allowed a larger flail machine to cut then this is the preferred method but where access is limited then brush-cutting with blade or strimming cord has been used. There was also some hand pulling of plants later on in the season. Due to the nature of how balsam spreads to areas which are inaccessible and have not been under any management due to the difficult access conditions, there has been considerable hand work with brush-cutters on this site.

The management work has been focused on two fronts, the northern front and the western front as it makes sense to work from the extremities, so we are not expecting further inflow of seed from upstream in areas that we are managing.

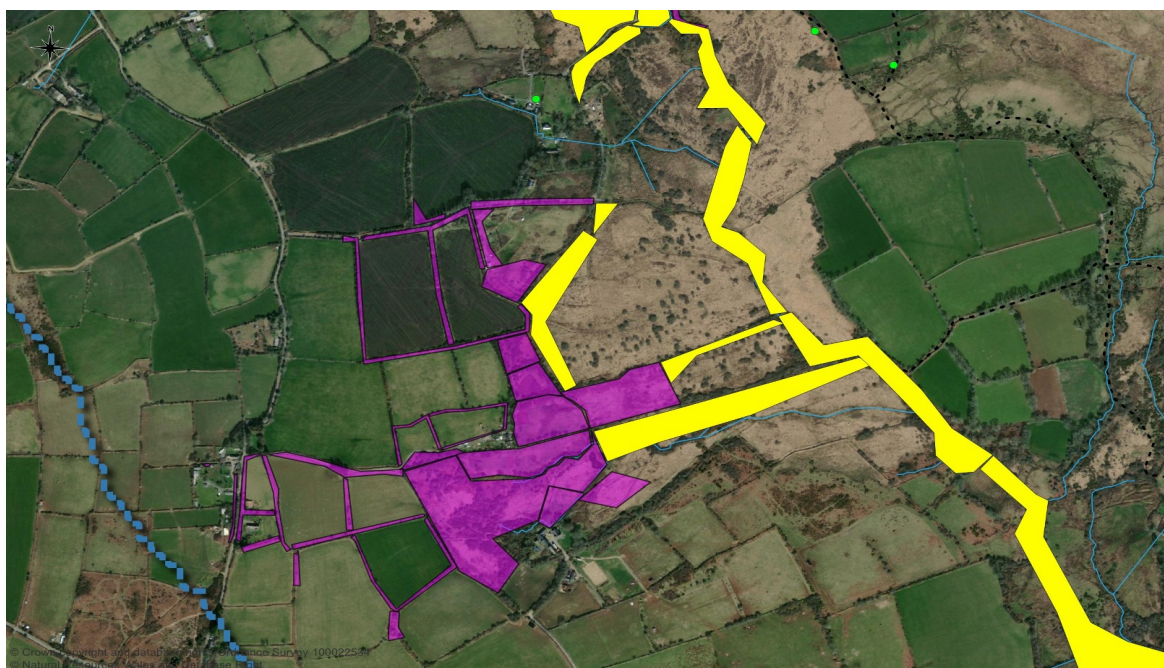
### 3. Results

The following maps show the Northern front and the Southern front areas in yellow where balsam has not been actively managed this year. It also shows areas which have been actively managed in purple. This is because of surrounding vegetation which has made it impossible to access the *Impatiens glandulifera* which can be seen to be growing; and cutting this vegetation in summer would risk damaging nesting birds and other animals.



Map 2 Northern front of *Impatiens glandulifera*

At the northern most property of Glynsaithmaen more balsam had been found than was initially pointed out in the survey. It appears to have spread downstream from the survey last year in numbers of plants less than ten. There are two yellow non managed areas just outside of the property of Carn y Buwch. The west area is a patch of dense willow which is not possible to access on foot and will need winter management to allow access. The area on the east that is yellow and not had summer management is an area of bog and *Molinia* grass where balsam was not noted until too late in the season to be able to deploy resources to cut this area. There is also willow outstretching obscuring access which would benefit from being cut. The purple areas have all been cut several times to stop the development of balsam plants producing seeds.



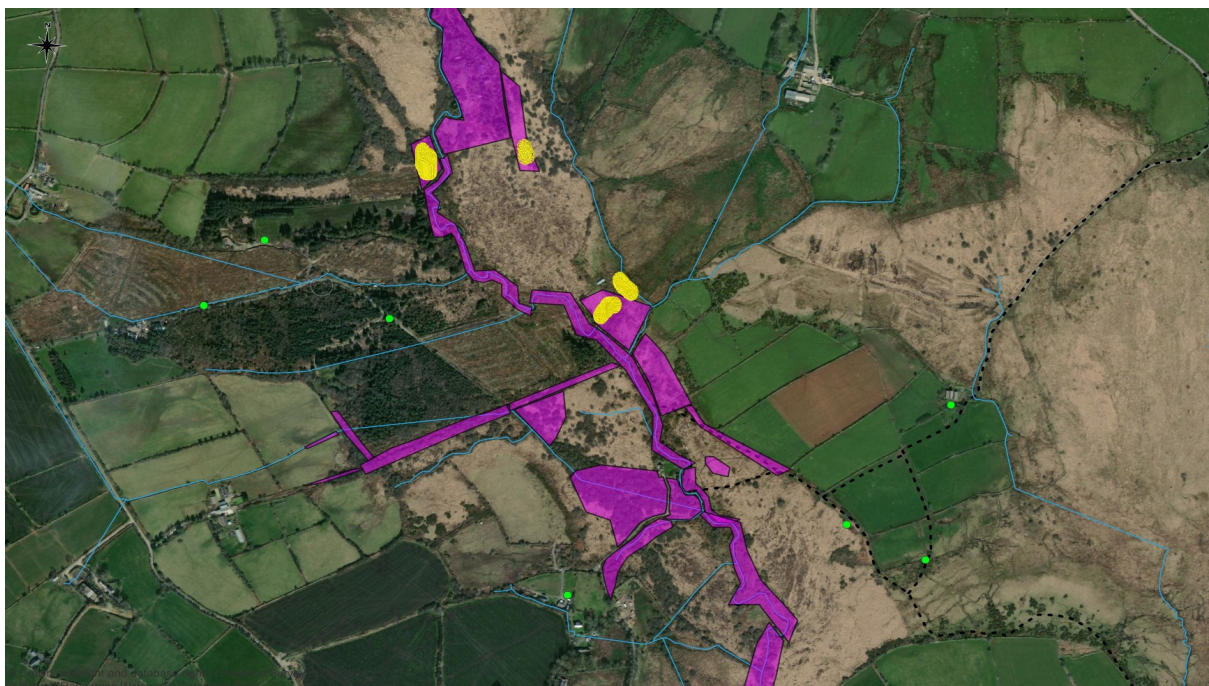
Map 3 Western Front of *Impatiens glandulifera*

The Western front can be seen in the above map. This comprised of a lot of hedgebanks and hedgerows which took a substantial amount of resources to manage especially when there were stock fences present either side of the hedgebank. Careful cutting was needed to not damage the stock fence and to get under hedgerows to access the balsam plants growing. There were large areas which were able to be cut by a large flail machine with tracks.

A total area of around 19.55 hectares was under active management in the summer of 2023.

#### 4. Future Work and Estimates of Cost

Going forward there is winter cutting work needed to improve and, in some places, create access to areas of balsam which have been out of range of control this year. This is to take place in some selected areas which are fairly high in the catchment which would have been ideal to have been under management this summer, but balsam was not known to be present partly due to the dense mainly willow scrub which restricted it being noted in the visual survey in autumn 2022. These areas are fairly small, and I believe there is low risk of spread of seed onto areas which have been managed this summer. However, it is still important to make these areas manageable as soon as possible to carry on managing *Impatiens glandulifera* in a methodical approach.



Map 4 Winter cutting shown in yellow

Cost estimate of winter cutting of mainly willow approx £2-3,000

I propose to manage the same area next year but also include the new areas which will have been winter cut.

Cost estimate of summer management in 2024 approx £15,000-£20,000

## 5. Challenges on Individual Sites

One challenge we faced was areas of very wet ground. This was a challenge for tracked machines but also difficult to walk on with hand tools in parts especially after the summer turned wet in July. This was especially relevant for machines on the land at Gwastad Bach in the fields that are past the house and start to go towards the Afon Wern. I have since come across and seen in action myself a different type of tracked tractor which has less ground pressure and is more suitable to cutting on this very boggy wet ground. It is a type of tractor which was designed for and is used on rice paddies in Japan and so is made to deal with boggy conditions from the start. This tractor can also carry a flail and cut areas next summer which we have struggled on this year.

On the right hand side of the lane driving towards Gwastad Bach there were several fields with balsam on the outer edges forming a network of balsam. These hedge banks had stock fences with sheep netting either side and were a particularly time consuming area to manage. The hedge banks had to be trimmed on top and on the outside edges of the stock fence with cord and then balsam that was growing in the line of the sheep netting had to be sprayed with glyphosate as there was no other way apart from hand pulling and this would have been several times more labour required. This is the first time in managing *Impatiens glandulifera* that I have seen no other option but to use chemical control with glyphosate. The second time also occurred this summer on a stretch of small rocks that had been piled in a long line near a field boundary and *Impatiens glandulifera* was growing out of this in a very dense fashion and we were unable to trim the bottom of the plants and so chemical application was the only way to manage *Impatiens glandulifera* in this case also.

Also at one property in particular (Wern) the owner wanted to manage the balsam surrounding their land without machinery. After discussions they did allow us to use machines to manage some parts of the land but there were still parts which we did not manage and which I suspect where balsam was allowed to seed. Next year I will approach this property owner early in the season and ask them if they would like me to manage all the areas around their house this year.

One challenge was finding balsam outside the areas we originally surveyed for. This I would say is a generic feature of managing balsam which comes up nearly always as there is often a lot more balsam in areas that you initially thought there was low numbers of balsam or balsam not present. This becomes a major challenge when that balsam is amongst other vegetation that makes accessing the balsam near to impossible in the short term without major cutting access works taking place first. The only way around this is to highlight them areas, carry out winter cutting and then add them areas into the summer management regime.



# FORCE FOR NATURE

## MINI GRANT SCHEME



20

NEW AREAS FOR NATURE HAVE BEEN CREATED ACROSS PEMBROKESHIRE.



9

PROJECTS ACROSS PEMBROKESHIRE CREATING GREEN SPACES, WELLNESS GARDENS AND IMPROVING BIODIVERSITY WITHIN COMMUNITIES.



112 VOLUNTEERS INVOLVED

3385 VOLUNTEER HOURS

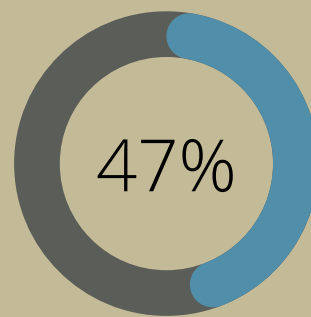


49 PUPILS INVOLVED

61 MEMBERS OF THE COMMUNITY



15.95 ACRES ENHANCED



47% OF VOLUNTEERS TAKING PART IN THEIR LOCAL PROJECTS REPORTED AN IMPROVEMENT IN THEIR WELLBEING.



7 TREE PLANTING SITES



3 FOOD GROWING OPPORTUNITIES



26 ENHANCED POLLINATOR SITES

“Force for Nature is thanked for providing the means to annotate these areas and formally identify them to the school’s learners and the wider public.”

*Ysgol Harri Tudur*

“We would like to thank you for giving us the kick-start for our project”

*Tenby Town Council*

“By improving the area we have been able to engage with the wider community, explain what we are doing and why, in the hope that these ideas will be taken up by individuals in their own garden/spaces”

*Dinas Wellness Centre*

The collaborative effort of community members in constructing this space has been immensely rewarding, knowing that it will serve as a valuable resource for the community’s well-being for years to come.”

*Llawhaden Community Council*

SUPPORTED BY:

