# West Country Buzz:
## Nature Recovery Networks initiative

## End of year report
## April 2022 – March 2023

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Bumblebee Conservation Trust

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NATURAL ENGLAND

Natural England via its Species Recovery Programme, Barbara Whatmore Charitable Trust, George Cadbury Charitable Trust Fund B, Philip J Milton & Company Plc

## Background

The West Country Buzz project focuses on the recovery of populations of three rare priority species of bumblebee in North Devon, aiming to safeguard and prevent them from extinction. The Brown-banded carder bee, Moss carder bee, and Ruderal bumblebee are the three S41 priority species. The objectives are to survey and monitor populations; to provide advice and support to raise awareness; and to provide habitat management assistance. This is year five of the project, which was extended due to difficulties arising from Covid-19 and needing more time to achieve ambitious habitat creation targets. From 2022 the project is being delivered part-time (24 hours a week) by BBCT Project Officer Jamie Buxton-Gould.

Our focus area is a 5 km strip along the North Devon coast in which we have piloted an approach for a Nature Recovery Network (NRN), targeting the aforementioned S41 priority bumblebees and benefiting a broad range of other pollinating insects. The NRN is being used to create, restore and join up pollinator habitat at a landscape scale, and integrates a wide variety of landowners, farmers and organisations in the area.

The Brown-banded carder bee (*Bombus humilis)* and the Moss carder bee (*B. muscorum)* were once found widely across Devon but alarmingly are now known from just a few sites on the North Devon coast. The Ruderal bumblebee was considered extinct in the county, last recorded in 1985 until its rediscovery in 2019, where it has only been recorded on Braunton Burrows. This 5km strip of the N Devon Coastline was chosen as the project area to cover the locations of these small, fragmented populations along the coast and to enable collaborative work with partners and landowners to deliver habitat restoration. See Map 1 in Appendix for key locations mentioned in the report.

Bumblebee habitat is under threat from factors including degradation, fragmentation, coastal erosion and from low-uptake of Countryside Stewardship. It is essential that landowners, farmers and the general public are made aware of the plight of bumblebees, and how management decisions can impact on their survival.

### Summary of achievements April 2022 – March 2023

Worker **Brown-banded carder bees** were **found at Baggy Point** (prior to 2000, they were absent from the site). Workers were **also found at Roylands** in Croyde, new to this site. A male was **recorded at Home Farm Marsh**, which is the first record for this side of the estuary since 1999. A record was also made at Windbury Hillfort, Hartland.

A queen **Moss carder bee** was found in **Fremington**, which is the first time since 1999 that the species has been recorded this side of the estuary. It is the first sighting of the species since 2019.

**BeeWalks at 2 case study sites** are ongoing to gather evidence.

**A Bumblebee and other insect Bioblitz** took place at Braunton Burrows in August, generating records of 53 species including numerous Brown-banded carder bees. **26 people** attended.

**30 landowners** have received in-depth **management advice and follow-up support, across 40 different sites.**

**83.2 ha of pollinator habitat has been created** this year.

**574.6 ha of new land has been advised on**, **plus ongoing advice given to 1,148.59 ha of land** on existing sites **(totalling 1,723.19 ha)**

**17 people attended a Farm Day for Pollinators** in partnership with FWAG SW and National Trust and **11 people attended a Farm Day for soil health** with the North Devon Biosphere

**122** people attended **three workshops, two field practice sessions, and two guided walks**

**235** people attended **6** talks

We are continuing to work with **27 partners** across the project area to deliver the project aims.

## Project objectives[1]

**1. Survey and monitor: Summary of objective - establish the abundance and distribution of bumblebees, with a focus on S41 species**

We have established a network of highly-skilled volunteers and BeeWalkers (the Trust's BeeWalk national bumblebee recording scheme) in North Devon. To support them and recruit more recorders, we ran a **bumblebee identification workshop** in May, attended by **11 participants,** at Braunton Countryside Centre, followed by an afternoon practical session out in the field at Braunton Burrows. This site is the most reliable location to find Brown-banded carder bees, and two queens were found during the session. This is particularly useful to raise awareness and improve people's identification skills of the different carder bee species.

*Looking at a Brown-banded carder bee queen during May's Bumblebee ID workshop on Braunton Burrows*

**Three field practice sessions** were delivered for a total of **14 people**; one in June for the National Trust at South hole for 3 members of staff, one in July for 8 participants at Northam Burrows; and one in August for the National Trust and Dynamic Dunescapes staff (3 attendees). Training identification skills in National Trust staff and volunteers has been particularly useful, as they are a key landowner and partner in the project area. Through training given throughout the project, National Trust rangers have been identifying some of the priority bumblebee species on their own and on neighbouring sites. As the National Trust teams throughout the project area (Hartland, Woolacombe and Heddon) are embarking on large-scale habitat restoration, including species-rich grasslands, promoting bumblebee ID and surveying is an important aspect of habitat improvements and ongoing ecological monitoring.

**Bumblebee workshop feedback quotes**

*'A very interesting well constructed workshop with an excellent teacher.'*

*'Really informative and enjoyable day, thank you.'*

*'Very informative and enjoyable day.'*

*'Thank you for a great day.'*

*Field session at Northam Burrows in July*

**What was the most useful part of the workshop for you?**

*'Identification techniques in the field'*

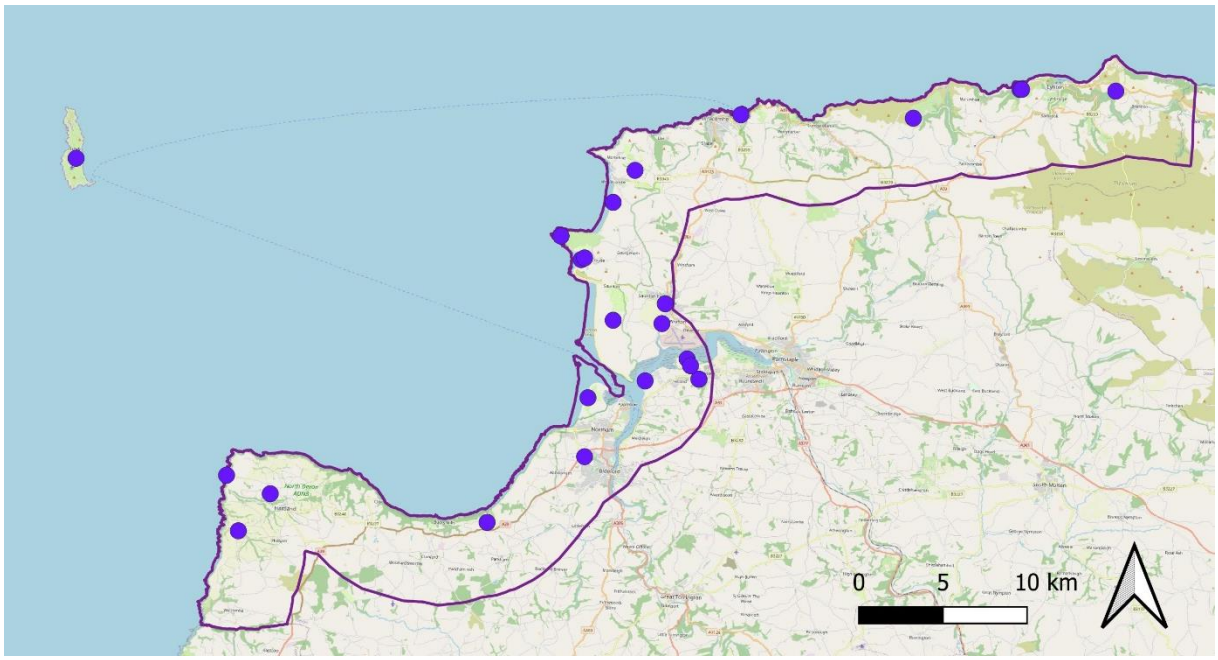
*'All of it. Good mix of theory and practical'*

*'Learning how to identify bumblebees'*

*'Practical ID session'*

[1] See Appendix for a summary of the project objectives achieved against the work plan

Bumblebee surveys to record both rare and common species have been carried out as part of advisory visits and in monitoring case study sites. Volunteers and landowners have joined Trust staff in these surveys. Staff have also been mentoring new BeeWalkers, helping them to gain confidence in walking their transects, thus helping to retain these volunteers. There are now **24 Beewalks** established in the area and of these, **15 are currently active**. Re-activating dormant Beewalks will be worked towards in the coming year. Between April 2022 and February 2023, data has been submitted from all 15 active transects, yielding **909 records for 13 bumblebee species,** including all of the Big 8 widespread and abundant species (*B. terrestris, B. lucorum, B. hortorum, B. jonellus, B. lapidarius, B. pratorum, B. pascuorum, B. hypnorum*), as well as the cuckoo bumblebees *B. rupestris*, *B. vestalis*, *B. sylvestris* and *B. campestris* and the project target species *B. humilis*.




*Map 2: Registered Beewalks in the project area*

**New sightings for one of the target species, the Brown-banded carder bee were made at seven sites,** including Braunton Burrows. See Appendix for 5km distribution map of Brown-banded carder bee in the project area (Map 3).

At **Baggy Point**, a Brown-banded worker was discovered on the northern side in August 2022. The species has been absent from the site since 2000, prior to the discovery of a male in August 2021. Two queens were also found in August 2021 at the nearby new meadow on Middleborough Hill (which received funds and advice from WCB). It is particularly good news to find workers as this is indicative of a breeding population; males can be transient and are able to disperse more widely and could have originated on Braunton Burrows, as could the end-of-summer queens which may have been seeking a hibernation site. The management on Baggy Point is changing to reduce bracken and encourage flower-rich grassland through grazing. It could support more nests of this species in future as this management progresses. In late August of 2022 a fire destroyed 5 ha of vegetation on the southern side of Baggy point. As much of the vegetation was dense gorse and bramble scrub, it is hoped that restoration works will enhance

*Brown-banded carder bee at Baggy Point*

the area through encouraging beneficial species such as knapweed, heather and Kidney vetch, with the WCB project advising on restorative management.

At **Roylands**, as a direct result of management advice given through the project in conjunction with the National Trust (NT), a 9.06 ha species-rich lowland meadow priority habitat was allowed to flower, as the former management of continuous heavy horse grazing was removed and replaced with light grazing by a small number of Belted Galloway cattle. For the first time ever, in August 2022, **a number of worker Brown-banded carder bees** were found here and on adjacent NT land, on two separate site visits by NT and BBCT, feeding on Common knapweed. They were not recorded on previous visits (2019 onwards) and it was thought that there was insufficient forage at that time to support the species. The presence of workers is an excellent sign of breeding success and suggests that the species could establish. Another interesting find at this site is the Red-tailed cuckoo bumblebee, *B. rupestris*, found by the NT. Although not a listed species, it has suffered serious declines and Devon records are very sparse. It was last recorded in the project area in 1967.

*Brown-banded carder bee photographed at Roylands in Croyde - a new site for this priority species*

A further new record of a male Brown-banded carder bee on knapweed was made in early September along the footpath running through a field in Croyde; approximately 220m southwest of Croyde Baptist Church (SS448390) and 0.3km northeast of Roylands.

A male Brown-banded carder bee was found at **Home Farm Marsh**, foraging on Water mint and Common knapweed. The project has worked closely with land managers and volunteers at this site since 2018, and changes have been made during this time to support this and other bumblebee species. These recommendations include planting favoured forage plants such as Viper's bugloss and Kidney vetch, and advice on seed mixes for Countryside Stewardship options and their positioning to help join up habitat. **Finding this species at this site is particularly significant as it is the first sighting of the species on the south of the Estuary since 1999**. A BeeWalk was set up at the site by a volunteer trained through the project, and regularly consults with the site managers on management for bumblebees. This resulted in

planting sunflowers and clover-rich nectar strips in 2022 for example. Following on from the Brown-banded discovery, volunteers collected and spread seeds of Common knapweed, Red clover and Red bartsia around suitable parts of the site in the autumn to increase forage availability.

*Brown-banded carder bee on Water mint at Saunton Golf Club*

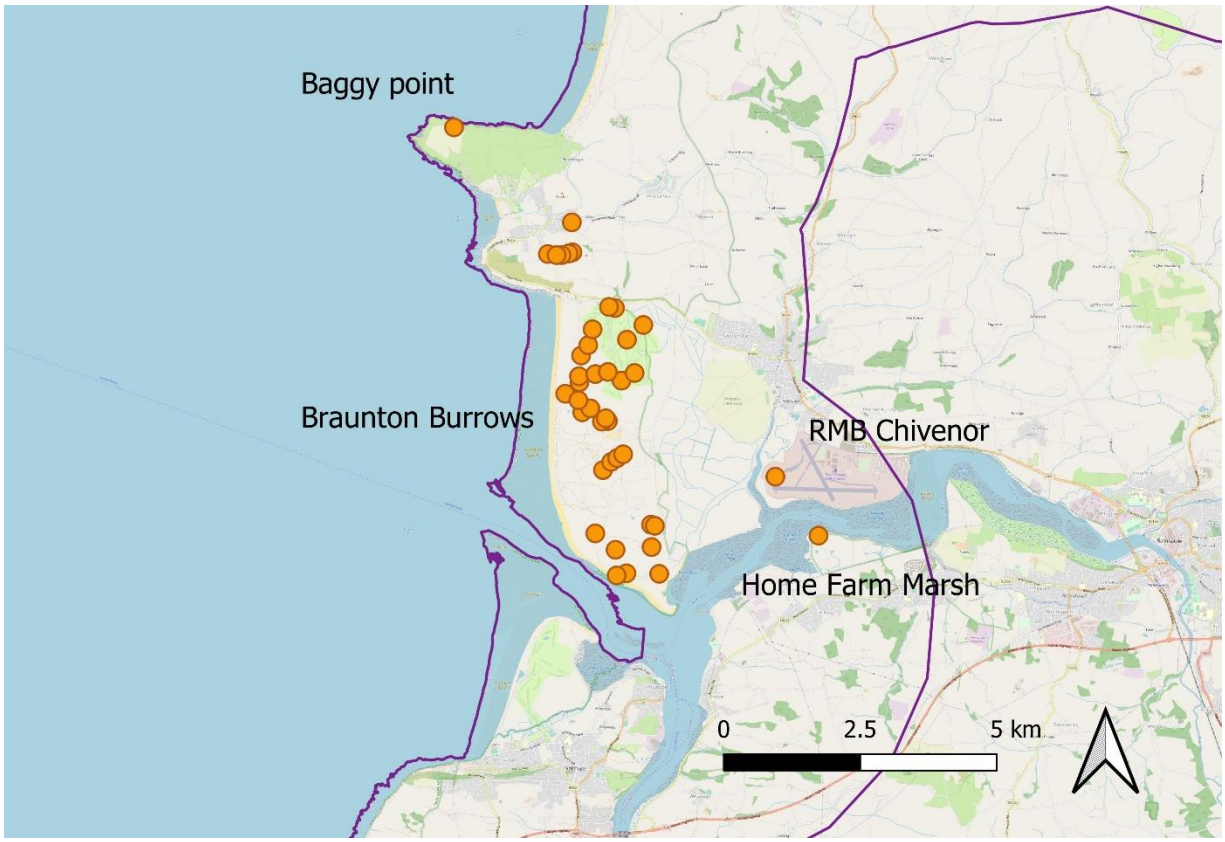
**Saunton Golf Club** is part of the Braunton Burrows SSSI dune system and is a key site for all of the target bumblebee species. It was surveyed for the first time throughout the duration of the project, with access provided by the golf course manager alongside their ecologist Sophie Olejnik, who organised a Bioblitz in August with Jamie Buxton-Gould and local botanist Mary Breeds. Brown-banded carder bees were recorded in numerous locations on the golf course, using Water mint and Carline thistle to forage on. Other bumblebee species recorded on site include Common carder bees and Buff/white tailed bumblebees. The WCB officer wrote a land management report for the site, with recommendations feeding into the new management plan and HLS scheme.

Brown-banded carder bees were also found at **Windbury Hillfort** in August 2022: a worker foraging on Common knapweed. This was discovered by NT staff who were trained through the project, and was confirmed from a photograph by BBCT's Science manager. It is a very exciting find because the population is at very low levels in the Hartland Peninsula, and was considered potentially locally extinct (the last sighting prior to this was in 2018, from sporadic records of lone individuals). The population here is especially vulnerable due to fragmented habitat and low abundance.

**The Moss carder bee was observed for the first time since 2019**, (where it was found at RMB Chivenor) in a garden in Fremington, on flowering Kale, in April 2022 by volunteer Steve Gunn. It was a worn and faded queen, with identification confirmed by BBCT staff. This is another **significant find, as it has not been recorded in this area since 1999**. The Moss carder bee is particularly vulnerable and was absent from Braunton Burrows for another consecutive year despite extensive searches, particularly in the wet slack areas. This is alarming and suggests that the species is at risk. See Appendix for distribution map of Moss carder bee in the project area (Map 4).

**No records were made for the Ruderal bumblebee in 2022**. This is a particularly difficult species to identify, and it is hoped that it is present but under-recorded. However, it is likely to be in low numbers due to a lack of habitat. BBCT training includes how to separate this species from similar species, since its discovery in the project area in 2019, and recorders are encouraged to submit photos of potential sightings. See Appendix for distribution map of Ruderal bumblebee in the project area (Map 5). Maps 6,7 and 8 in the Appendix show the records of the priority species before the WCB project, from 2018-2021 and for 2022.

*Moss carder bee in Fremington*




*Map 9: Brown-banded carder bee records for 2022 observed by Project Officer Jamie Buxton-Gould*

Additionally, the rare solitary Early Colletes bee *Colletes cunicularius* was discovered on Braunton Burrows in April 2022 on Zone 2 of Braunton Burrows and confirmed by Kim Leaver. This scarce species is a first record for Devon, with its distribution previously restricted to parts of north-west England and south-west Wales, emphasising the importance of this site for rare bee species.

*Early Colletes bee at Braunton Burrows*

*Brown-banded carder bee on Viper's bugloss at Braunton Burrows*

Two case study sites are being monitored, Baggy Point and Braunton Burrows. Detailed bumblebee and habitat data is being collected using monthly BeeWalks and three vegetation surveys per year to record early, mid and late season forage. Data will enable examination of bumblebee responses to habitat management and record presence of S41 species. Landscape scale analysis of bumblebee distribution and habitat will help inform us how the target species are responding to interventions and help target our work next year.

**Braunton Burrows Case Study: Highlights**

During spring and summer of 2022, Brown-banded carder bee queens, workers and males were observed across all zones of Braunton Burrows: a key site for this species. In spring, Viper's bugloss appeared to be an extremely important forage plant for queen bees, being noticeably abundant at a crucial time of year. New records of Brown-banded carder bees were made from Saunton Golf Club on 22nd August 2022, which is part of the wider Braunton Burrows SSSI and was a new site advised on for this year. The new discovery of an Early Colletes bee emphasizes the importance of Braunton Burrows as a hymenopteran hotspot in the area, meaning appropriate management is vital.

Management recommendations have been made to the owner, Christie Estates and the Site Manager regarding the grazing regime. A MSc research project by the Project Officer Jamie Buxton-Gould carried out during 2021-22 was written into a summary report to influence the grassland management of Braunton Burrows. The study found that a combination of a higher grazing intensity combined with periodic mowing resulted in greater plant species richness and lower sward heights. The addition of rabbit grazing led to higher numbers of positive indicator species on the dune grasslands. Grazing exclusion areas showed the lowest plant diversity and were increasingly dominated by tall, coarse grasses, demonstrating the importance of continuing active management on site to maintain botanical communities. The grasslands of the damp dune slacks can be very diverse and provide more floral resources in late summer, when key species for priority bumblebees including Water mint, Red clover and Purple loosestrife are still flowering, even during the drought conditions this year.

The winter of 2021 saw 36 ha of scrub clearance and 10 ha of bare scrapes created, with an additional 13 ha being worked on during winter 2022, including features such as notch creation to promote more mobile sand. Some of these new scrapes were surveyed during the summer of 2022: the bare sand was creating germination opportunities for plants such as Viper's bugloss and Common restharrow, which are key flowers for the priority bumblebee species.

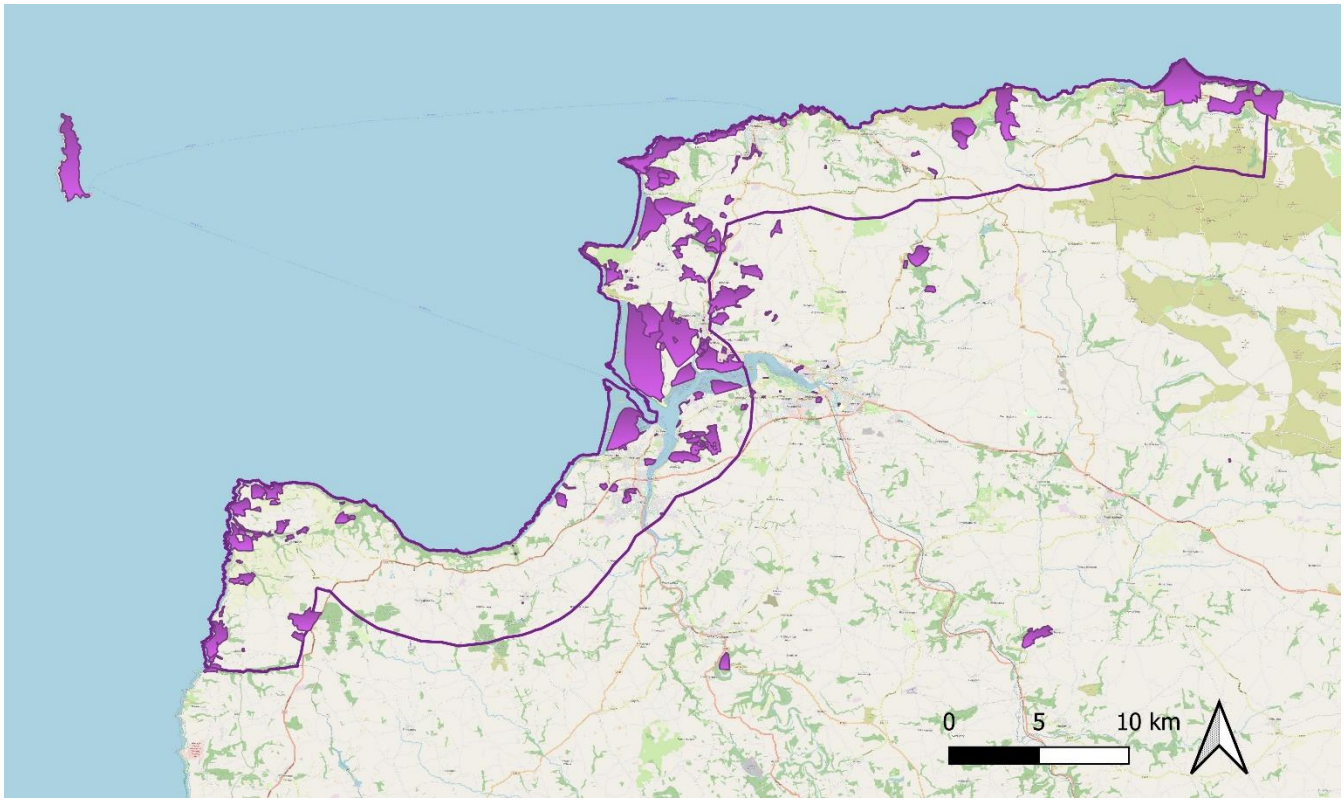
*New scrapes at Braunton Burrows and emerging rosettes of Viper's bugloss*

## 2. Advice and support: raise awareness of what pollinators need to survive and thrive, with landowners, farmers, and the general public

Since April 2022, **30 landowners across 40 sites** have been visited and given in-depth management advice (target number is 15), which often involves multiple visits to the same site, as required. This figure includes ongoing support for 19 landowners already engaged with, and 11 who were new to the project since April 2022.

Between April 2022 and March 2023, we have **delivered advice across 1,723.19 ha** of land to new and existing landowners (574.6 ha of which consisted of new sites and 1,148.59 ha of sites receiving ongoing advice for landowners already involved). Many of these sites receive ongoing advice and multiple visits across different years.

*Enhanced meadow at South Hole where advice regarding flower species was given to the landowners (National Trust) – photographed in 2022, showing a range of beneficial species establishing in the sward.*




*Map 10: Total sites advised on for the duration of the project, up to March 2023*

A **Farm Day for Pollinators was held in partnership with the National Trust and FWAG SW** in September with **17 attendees**. Invitations were sent to former Facilitation Fund Group members and farmers that we have engaged with directly through the project. Talks covered new and existing agri-environment schemes, ecology and pollinator habitats, including S41 bumblebee species. The work of the National Trust's Grasslands Project was discussed by Project Co-ordinator Joshua Day, with talks and machinery demonstrations on green hay and wildflower seed collection and sowing techniques. The scale of the National Trust project means that once established, many of the newly created and restored wildflower meadows will have an abundance of material that can be used for green hay and collected seed. Discussions with local landowners involved increasing the receptor sites throughout the area, future seed sharing and opportunities for green hay. The aim is to work towards a legacy by passing on skills to land managers and professionals in the sector on habitat management for pollinators.

*Farm Day for Pollinators at Woolacombe*

**Farm Day feedback quotes***

*'Thanks for a really interesting day today'*

*'It was a great day, with three excellent informative speakers'*

*'Hope this project continues, to be able to increase public knowledge of pollinators and their needs'*

**What was the most useful part of the day for you?***

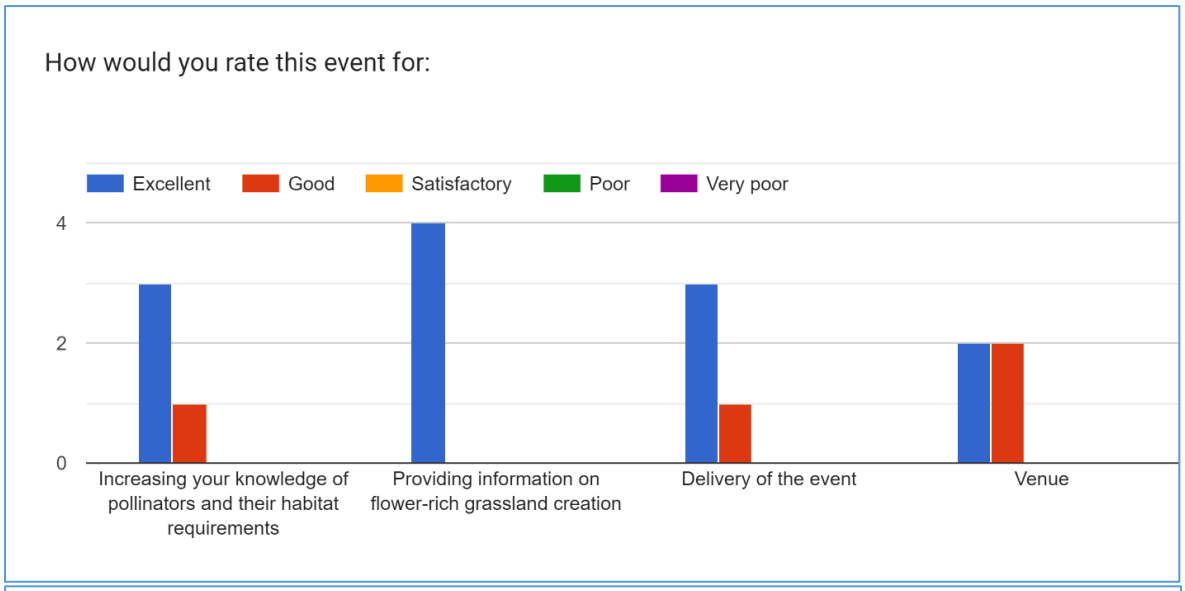
*'Three incredibly informative talks. Increased my knowledge hugely and all given in a professional and interesting manner. Broad spectrum of information.'*

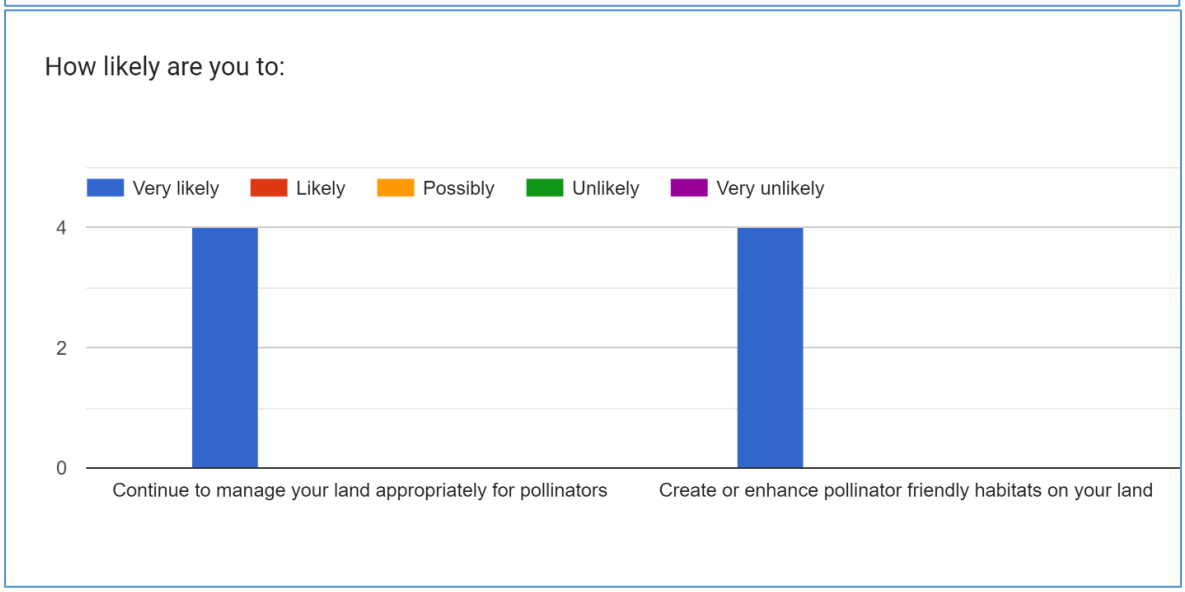
*'Information on Countryside Stewardship'*

*'Learning about use of green hay'*

*'Meeting other attendees and forming useful local contacts'*

**Feedback given anonymously via forms following the event*




*Graphs presenting feedback from Farm Day indicating improved knowledge of pollinators and grasslands and increased motivation to create suitable habitats*

Another Farm Day in collaboration with the North Devon Biosphere's CRITTER project and Westcountry Rivers Trust was held in March 2023 with **11 attendees**. The event focused on **soil health and productivity** on Braunton Marsh (adjacent to Braunton Burrows). The WCB project provided information and recommendations for farmers regarding nature-based solutions that meet the needs of pollinators whilst improving soil health. The requirements of bumblebees were discussed alongside rotational grazing and herbal leys for both pollinators and soil health, as well as creating wildflower-rich meadows with the National Trust.

*Farm Day for Soil health and productivity*

We have **assisted with 2022 Countryside Stewardship applications for three Farms** (Roylands, Home Farm Marsh and Broadlands), collaborating with the RPA and FWAG SW. This includes advice on which options to select, where to position them for maximum benefit to pollinators, and which seed mixes to choose, and providing evidence for the presence of S41 Priority species for the **SP9** Threatened species supplement.

The range of agri-environment options that have been implemented on these farms have included:

- **HF12** Enhanced wild bird seed mix plots (with bumblebee-friendly plants including sunflowers)
- **HF4NR** Nectar flower mixture with inclusion of a range of clover varieties
- **HK8** Creation of species-rich, semi-natural grassland
- **EK3** Permanent grassland with very low inputs
- **GS6** Management of species-rich grassland
- **SP6** Cattle grazing supplement
- **GS1** Take field corners out of management
- **GS2** Permanent grassland with very low inputs (outside SDAs)
- **WT3** Management of ditches of high environmental value
- **WT12** Wetland grazing supplement
- **BE3** Management of hedgerows (one side per 100 metres)

Capital items included: **BN11** Planting new hedges, **BN3** Earth bank creation and **FG2** Sheep netting.

In August, we held a **Bumblebee and insect Bioblitz** event at Braunton Burrows, attended by **26 people** which generated 53 records of a range of insect species. Bumblebee species recorded were Brown-banded carder bee, Common carder bee, Garden, Red tailed and Buff/white tailed bumblebee. The same week, a bioblitz with the National Trust at Heddon Valley was attended by **55 people**. A **Bumblebee Safari** at Northam burrows was attended by **23 people** including families and children.

*Bioblitz at Braunton Burrows*

**Six talks** have been delivered to 235 people from April to March. An **online talk** was given to the NHS (**51 attendees**). A talk about local wildflowers and verges was given at Braunton Countryside Centre in September, giving away 164g of annual and perennial wildflower seeds (attended by **45 people**). A follow-up community wildflower planting event was held in October in Braunton with 8 attendees, helping to prepare and sow two areas totalling 86m$^2$ with wildflowers. These areas will be managed as community wildflower verges as they are alongside paths and pavements and will also be included on the transect of a new Beewalk in the locality. Another talk all about bumblebees was delivered at Quince Honey Farm in September (attended by **50 people**).

In October, a bumblebee talk was given to Barnstaple and District Devon Wildlife Trust Group with **43 attendees** and in November, another to Ilfracombe U3A natural world group with **22 attendees**, followed by a talk to Barnstaple's Christ church group with **24 attendees**. These talks resulted in kind donations to the project, which have contributed to additional seeds and plugs to enhance key sites.

Talks were well received, with positive feedback gathered across all talks delivered:


*Wordcloud made from feedback from all talks given in 2022*

The West Country Buzz project's Twitter account is updated regularly and the project features on its own page of the BBCT website, which was recently updated. A video was created from clips filmed throughout the summer by Project Officer, Jamie Buxton-Gould and was posted online in January. The video focuses on the requirements of bumblebees and the West Country Buzz received a lot of attention of social media, gathering over:

- 2,260 views and 48 likes on Twitter (https://bit.ly/42r4yUL)
- 16,600 views and 1,434 likes on Instagram
- 1,600 views and 232 likes on Facebook

Two articles have been written about the West Country Buzz:

- An article in the North Devon Journal published on 20/04/22 describing the pollinator-friendly management of verges due to Braunton Parish Council acquiring cut and collect machinery with funding from North Devon AONB:

  https://www.devonlive.com/news/devon-news/bringing-back-buzz-brauntons-road-6973041

- An article published in the North Devon Gazette on 12/05/22 covering the WCB project's work in the area and a kind donation from Philip J Milton & Company Plc:

  https://www.northdevongazette.co.uk/north-devonians-urged-to-help-the-humble-bumble-bee/

**Three articles** have been written by the Project Officer:

- An online article titled 'Boosting Bumblebees on the Farm' for NFFN published on 07/12/22 focused on enhancing and creating farmland bumblebee habitats with case studies of our recent habitat delivery work including green hay and seed sowing: https://www.nffn.org.uk/boosting-bumblebees-on-the-farm-west-country-buzz-bumblebee-conservation/

- A Buzzword article summarising the past year's achievements of the West Country Buzz Project

- A BBCT blog article for April has also been written, covering the needs of queen bees in springtime and the value of flowering trees such as willow.

We continue to work with **27 partners** across the project area, including FWAG SW, Devon Wildlife Trust, National Trust, Natural England, North Devon AONB, North Devon Biosphere, Devon Local Nature Partnership, South West Water, South West Lakes Trust, Westcountry Rivers Trust and local wildlife groups.

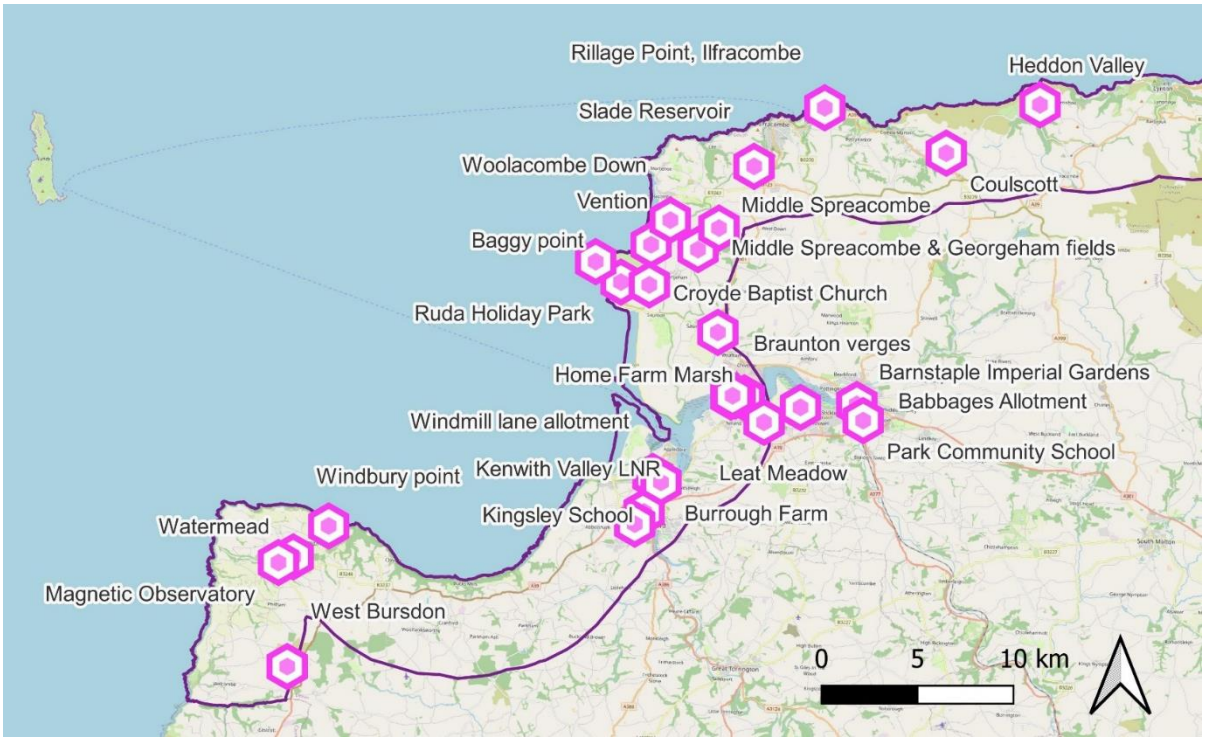
## 3. Habitat management: increase the area of suitable habitat and habitat connectivity around existing populations of target species.

*Oversowing with locally harvested seed at West Bursdon with Devon Wildlife Trust*

Between April 2022 and March 2023, we have worked with landowners to **create 83.2 ha of habitat**. Work implemented in this reporting period is listed in Table 1 on page 16.

As well as advising on 1,723.19 ha to date, **150.68 ha of new habitat has been created since the start of the project** (14.12 in year 1, 27.4 in year 2, 10.01 in year 3, 15.95 in year 4, and 83.2 ha in year 5). Of the 142 sites where habitat advice has been given throughout the project, 65 sites have undertaken habitat restoration and/or creation. This represents an implementation rate of 45.8% on sites following recommendations.

The overall project target for habitat creation within the project area is 160 ha, with the aim to increase the area and connectivity of suitable habitat. The 160 ha target was established during the project development phase and took into account achievements from similar BBCT projects. It was a result of estimating the achievable high-quality habitat creation when accounting for project officer time and the potential for successful and repeated engagement with landowners in the area. The 5 km width of the project area along the coast is defined as the likely dispersal distance of queen bumblebees[2].




*Map 11: Sites where habitat was delivered from April 2022 to March 2023*

2. Lepais *et al* (2010) https://onlinelibrary.wiley.com/doi/10.1111/j.1365-294X.2009.04500.x

*Herb bed for bumblebees at Babbages Allotment*

*Wildflower area creation in Braunton*

*Planting Viper's bugloss plugs at Croyde dunes*

*Planting plugs after hay cut at Kenwith Valley LNR*

*Planting plugs at Home Farm Marsh*

*Selfheal plugs*

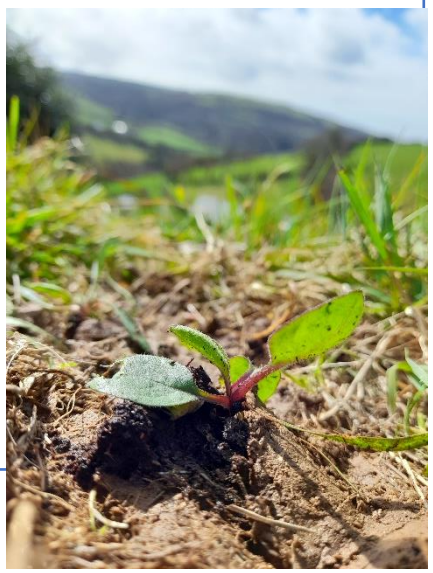
**Table 1**: Habitat delivered between April 2022 and March 2023

| Date | Site | Info | Habitat delivered (ha) |
|---|---|---|---|
| 01/04/2022 | Home Farm Marsh | Cotswold seeds AB1 pollinator mix sown for flower margins along arable fields | 0.6 |
| 04/04/2022 | Barnstaple Imperial Gardens | Council sowed wildflower seeds for newly designed flower beds | 0.04 |
| 18/04/2022 | Park Community School | Teacher and volunteers rotovated and sowed seed on new wildflower area | 0.1 |
| 20/04/2022 | Windmill lane allotment | Sowed Phacelia, Red clover, other annuals and planted fruit trees | 0.002 |
| 27/04/2022 | Slade Reservoir | Planting wetland plug plants | 0.0002 |
| 04/05/2022 | Babbages Allotment | Planted up herb bed and gave Comfrey roots, Phacelia, Nasturtium seeds to sow around allotment | 0.0006 |
| 21/07/2022 | Middle Spreacombe & Georgeham fields | Green haying Georgeham fields with organic, species-rich hay | 17.5 |
| 24/08/2022 | West Bursdon | Devon Wildlife Trust harrowed and sowed locally harvested seed to enhance meadow | 1.3 |
| 31/08/2022 | Home Farm Marsh | Site manager and volunteers collected seed (Knapweed, Red bartsia & Red clover) and sowed along path where *B. humilis* was found | 0.1 |
| 07/09/2022 | Kenwith Valley LNR | Planted wildflower plugs and sowed seed alongside green hay to enhance grasslands with volunteers | 0.4 |
| 11/10/2022 | Ruda Holiday Park | Planted Viper's bugloss plugs and sowed Sea holly and Sea stock at Croyde dunes | 1.243 |
| 13/10/2022 | Home Farm Marsh | Planted Knapweed plugs, sowed Yellow rattle, Red clover and wildflower mix in areas | 0.269 |
| 14/10/2022 | Burrough Farm | NT harrowed and oversowed species from South Hole + seeds of Yellow rattle, Knapweed, etc. | 14 |
| 18/10/2022 | Leat Meadow | Sowed Yellow rattle after cutting and raking | 0.1 |
| 21/10/2022 | Middle Spreacombe | Sowed 1kg Goren Farm premium wildflower seeds mix and 3kg Yellow rattle on harrowed species-poor field | 2.3 |
| 24/10/2022 | Baggy point | Sowed hand collected Knapweed seed | 0.22 |
| 26/10/2022 | Braunton verges | Community wildflower sowing event - sowed wildflower mix on two areas with 8 volunteers | 0.0086 |
| 31/10/2022 | Vention | NT sowed seed collected from Braunton Burrows and Saunton Golf Club | 1.83 |
| 31/10/2022 | Woolacombe Down | NT sowed seed collected from Chivenor along with other seeds (some recommended bumblebee favourites) as part of grassland project | 33.142 |
| 31/10/2022 | Windbury point | NT harrowed strip along footpath and sowed Knapweed | 0.036 |
| 31/10/2022 | Rillage Point, Ilfracombe | Cut and raked area to enhance grassland | 0.04 |
| 28/11/2022 | Magnetic Observatory | Installed new fencing to enable rotational grazing (from March 2023) | 6.842 |
| 01/12/2022 | Home Farm Marsh | Volunteers sowed Yellow rattle on cut and raked flowery bank | 0.07 |
| 05/12/2022 | Croyde Baptist Church | Planted White dead nettle and Knapweed plugs around grassed car park and church volunteers planted bluebells and other bulbs in churchyard | 0.04 |
| 07/12/2022 | Kingsley School | Ground keepers cut and raked area and sowed Yellow rattle to restore grassland | 0.42 |
| 12/12/2022 | Heddon Valley | Grazed grassland area with cattle and sheep overwinter to break up coarse grass and bracken - planning to cut next autumn | 2 |
| 21/03/2023 | Coulscott | Planted new orchard and meadow plugs with lecturer and 3 students from Petroc college (with AONB SDF funding) | 0.6 |
| 23/03/2023 | Northam Town Council | Grounds team planted a mixture of wildflower plugs in Anchor Park | 0.003 |
| **Total** | | | **83.2064** |

**Orchard and wildflower meadow enhancement at Coulscott with AONB funding**

The North Devon AONB provided Sustainable Development Funds for a habitat enhancement project at Coulscott House Holiday Cottages near Combe Martin, following a site visit and recommendations from the WCB Project Officer, who assisted with the application form. The project focused on enhancing the existing small, old orchard with new mainly local, west country fruit tree varieties and increasing species diversity in a nearby grassland that overlooks the AONB to benefit bumblebees and other wildlife. On 21st March 2023, with the direction of the WCB Project Officer and the help of the site owners and volunteers from Petroc College, 21 fruit trees and 500 wildflower plugs were planted. The provision of pollen and nectar sources early in the year are vital for establishing bumblebee colonies, so the fruit trees included species to flower throughout spring, including cherries, pears and plums. The majority of the trees planted are south west apple varieties such as 'Limberland', 'Hoary Morning' and 'Pig's Snout', which are well adapted to the local climate and will add diversity to the limited species currently in the orchard.

Alongside the orchard, a 0.23ha grassland was enhanced with the addition of a range of wildflower plugs: species included Betony, Meadow Cranesbill, Bird's-foot trefoil, Common knapweed and Tufted vetch. When flowering, these species will provide important mid to late summer forage for bumblebees and other pollinators. The combination of both the orchard and grassland flowers provide a succession of floral resources throughout the year on the site and will benefit pollinators and wider biodiversity in the area. Advice for follow up management has ensured that the grassland will be shut up for summer and receive autumn grazing by sheep, whilst the fruit trees will be fed and watered throughout the growing season.



**Grassland habitat restoration at Middle Spreacombe**

WCB Project Officers have worked with a landowner at Middle Spreacombe who farms organically with wildlife in mind and was keen to enhance some of her species-poor grasslands on her Georgeham parcels. An organic farmer in Queen's Nympton was selling round bales of species-rich hay, with over 150 species counted in his meadows. This was an ideal seed source as it needed to be certified organic and also contained a large amount of Yellow rattle (a species hemi-parasitical on grasses so weakens them, thereby giving other wild flowers a chance to compete) to help with species establishment.

Site preparation of the receptor fields (covering 17.5 ha) involved a hay cut followed by harrowing. 58 round bales of green hay were cut, transported and spread on 21st July 2022 by contractors, although some bales spread towards the end of the day may have heated up and lost some seed viability. Follow up advice has been to graze the grass short over winter and shut up from March.

*Green hay at Middle Spreacombe's Georgeham fields*

On the main landholding in Middle Spreacombe, there are a range of more improved grasslands and it was decided to enhance a 2.3 ha field by oversowing with a local, organic seed mix. WCB purchased 1kg of premium wildflower-only mix from Goren farm and the National Trust donated 3kg of Yellow rattle seed. The site was grazed short, then power harrowed in strips to create high amounts of bare ground (~60%) and the seed was sown by hand on 21st October 2022. Sheep were let in to graze immediately after and follow-up advice was to graze overwinter to control grass during mild weather. Surveys will be carried out across both parcels in summer 2023 to observe establishment. The motivation and dedication of this landowner has resulted in some ambitious habitat creation and establishing connections with the National Trust's Grassland Project opens up opportunities for seed sharing and further grassland restoration work in the future.

*Seed sowing at Middle Spreacombe*

## Nature Recovery Networks: a summary

West Country Buzz was tasked with exploring approaches towards the development of a Nature Recovery Network (NRN) in North Devon, by working at a landscape scale to aid pollinator recovery. Outlined below are findings from the project to date.

### 1. Landscape scale working

Many pollinators move through the landscape to search for food, mates and nesting and hibernation sites, meaning that a landscape scale and collaborative approach is essential. We identified a project area covering a 5 km wide strip along the North Devon coast as this holds Devon's last remaining populations of three nationally declining S41 bumblebee species and covers their potential dispersal range. We set up an NRN here to create resources for pollinators.

The dominant agricultural landscape use of the project area is livestock farming on permanent grassland, involving mainly beef cattle, sheep and a small amount of dairy farms. Arable and horticultural operations are also present in the area, with patches of woodland and forestry occupying mainly valleys and cliffs. Figures from the North Devon AONB overlap with the majority of the WCB project area and show land use consisting of: 74% grassland, 8% arable, >0.1% woodland and 0.1% non-agricultural land. Up to 29% of the AONB is part of agri-environment schemes (AES) and 16.9% is SSSI designated (https://bit.ly/3SEJB41). According to the Devonshire Association, the average farm size in Devon is 59.5 ha (compared to the England average of 84.2 ha). Significant landowners in the area include the National Trust, the Stucley Estate in Hartland, the Christie Estate covering Braunton and Instow and the Clovelly Estate.

*View towards the project area showing the Taw Torridge Estuary and Saunton Down in the distance (taken from Codden Hill, just outside Barnstaple)*

As one of the most rural places in England, North Devon's economy is dominated by agriculture and tourism. North Devon has some of the lowest wage levels in the UK, with a high concentration of working families claiming tax credits (43% compared to 36% for Great Britain) and a 188% rise in over 50's claiming Universal Credit, according to the ONS. There are a mixture of affluent and deprived areas along the coast, with house prices above average, but some towns such as Ilfracombe having 33% of people classed as income deprived. These socioeconomic factors can influence the project delivery in terms of individual and community engagement, access to nature, consumer behaviours that could affect local land-use and the ability to implement wildlife-friendly land management that can be time and cost-prohibitive.

This year, we recorded worker Brown-banded carder bees outside of Braunton Burrows (which is the main stronghold for the species in Devon). This builds upon results from 2021, where we recorded males and new queen Brown-banded carder bees in Croyde and by Baggy Point; and a male at Woolacombe in 2019. These sites, which have received improved management through the project, are not only within the dispersal capabilities of this species but are showing signs that they can support the species to re-colonise. It is hoped that with continued targeted

work on sites within or close to Braunton, Croyde and Woolacombe, further dispersal might be possible.

Our landscape-scale working integrates landowners and organisations across the area, and includes different habitat types and land uses such as farmland, holiday parks, golf courses, churchyards, and the South West coastal path. We have established good, collaborative relationships with 27 partner organisations and voluntary groups to achieve the project aims.

Pollination is a key ecosystem service. Bumblebee habitat created through the project - through supporting delivery of AES options, voluntary measures, and supplying seed - contributes to broader ecosystem restoration by providing a wide suite of pollinating insects with forage, nesting sites and hibernation sites. Creating more habitat and joining it up increases resilience to pressures such as inbreeding depression caused by habitat fragmentation.

## 2. Evidence and planning

Stage one involved landscape scale work across the whole project area to record the distribution of the target bumblebees. Habitat was assessed at this broad scale for suitability for these species, and to identify areas for improvement, using aerial photograph interpretation, Phase One surveys and detailed botanical surveys.

Stage two has involved working at a finer scale for habitat creation and restoration in areas with recent records of target species (post-2000). A local-scale approach is essential for providing the amount of ongoing support farmers need to implement management changes, to keep momentum going, to join up habitat in a strategic way, and for finding achievable management plans.

BBCT's Short-haired bumblebee project was used as a model, although this project has been carried out on a much larger scale and with high numbers of volunteers (>80). Here, rare bumblebees are returning to their former range through an approach of working with clusters of farmers to create habitat, radiating out from these key areas to achieve landscape scale connectivity and species recovery. The West Country Buzz Project area differs from the Short-haired bumblebee project as it contains primarily grassland, with many farms more remote and traditional in their approach, meaning it can be difficult to exert change on a large scale. Our largest scale successes have largely been due to a strong partnership with the National Trust who are a major landowner in the area.

*Braunton Burrows is a focal site in the project area for priority bumblebee species – the largest populations of Brown-banded carder bees are located here, determining the geographic distribution of targeted habitat advice and creation.*

## 3. Delivery

Prior to the project, Devon was under-recorded for bumblebees and few people had the necessary identification skills. Only two BeeWalks were registered in the area. Multiple targeted bumblebee surveys have since taken place across North Devon as a result of the project and an Atlas to Devon bumblebees was produced in 2019. We have provided free training through workshops and field practice sessions, and events such as bumblebee bioblitzes, guided walks, talks and wildflower planting. We have also provided free equipment to BeeWalkers.

Our results indicate that this intervention has been effective. Subsequent to this engagement, 24 new BeeWalks were set up so far (exceeding the original project target of six), and new recorders have taken part in surveys with project staff and independently. Two new Beewalks have been set up throughout the past year; one in a key area of Braunton, which will help to monitor new wildflower areas and engage with local people as an easy, accessible route. The other is on Lundy Island, which will contribute to their overall biodiversity monitoring on site.

BBCT is being represented by volunteers at talks and events. The National Trust has adopted BeeWalks at five sites; and are now including bumblebees as target species in their management plans. After receiving training through the project, rangers and volunteers have new records for the Brown-banded carder bee and are implementing habitat management changes to help support this species as a result.

Following on from successful seed harvesting operations over the past two years, the WCB project has collaborated with and enabled the National Trust's Grassland Project to collect seed from species-rich sites to enhance their sites in Woolacombe. Throughout summer, **5 seed harvesting days** were held (1 at RMB Chivenor, 3 at Braunton Burrows and 1 at Saunton Golf Club) targeting seeds from a range of key bumblebee-friendly plants, including Viper's bugloss, Red clover, Common bird's-foot trefoil, Yellow rattle and Carline thistle. A combination of hand harvesting and the use of a brush harvester were used to collect seeds on dry days. The National Trust's focus on diversifying grasslands across their landholdings is a high-impact, comprehensive approach that we will continue to provide support and advice for.

*Seed harvesting on RMB Chivenor*

**Grassland enhancement with the National Trust**

Throughout 2022, WCB contributed to the National Trust's North Devon Grasslands Project, through advising on species to collect and sow, arranging seed harvesting days and enabling access to local sites for harvesting. The chosen sites (RMB Chivenor, Braunton Burrows and Saunton Golf Club) contain species-rich coastal grasslands. Plant species of local provenance are ideal to spread to other suitable sites in the locality, possessing adaptations to the local climate and enhancing genetic and species diversity on the receptor sites (Woolacombe Warren, Woolacombe Down and Vention).

In October 2022, 86 ha of National Trust grasslands were enhanced by power harrowing and sowing with a mixture of wildflower seeds. The locally harvested seeds were combined with seed from Emorsgate and broadcast at 20kg per ha. The long-term aim is to provide a source of donor seed to create flower-rich grassland patches across 70 miles of North Devon (https://bit.ly/3SkO9fC). The location and targets of this project overlaps with and complements the WCB project and has potential to provide a large network of floristically rich habitats, which will benefit bumblebees.

Seed collected from RMB Chivenor combined with WCB recommendations on appropriate species contributed to 33.1ha of grassland habitat delivered at Woolacombe Down, whilst seeds from Braunton Burrows and Saunton Golf Club were part of the 1.83 ha of grassland restoration at Vention. Burrough Farm is another National Trust site that received species recommendations and was sown with a mix containing Yellow rattle, Lesser knapweed, Common bird's-foot trefoil amongst others and seed harvested from South Hole (a site we have previously advised on to improve diversity with key bumblebee plant species).

*Seed collecting and sowing with the National Trust. Credit: Joshua Day/ NT*

Using flagship bumblebee species to create resilient pollinator networks inspires people to get involved and helps create a strong message to capture interest. This method has opened up many opportunities such as permission to survey, implementing habitat changes, and inspiring people to volunteer and record bumblebees.

Providing free, impartial support for farmers in existing AESs, and free basic resources for habitat creation such as seed and compost has also helped to garner interest and support for the project's aims.

There are direct benefits to agriculture due to the West Country Buzz project. Since April 2022, we have run and participated in two farm days to share knowledge on managing habitats for pollinators. **In-depth management advice and follow-up support has been given to 30 landowners across 40 sites** during this period, with approximately **1,723.19 hectares of land advised on this year** (574.6 ha on new sites, and 1,148.59 ha on land previously engaged with since the project began in 2018). In addition to this, **150.68 ha of new pollinator habitat has been created since the start of the project.** The additional forage for pollinators should lead to increased pollinator populations over time, which will help crop pollination; and improve pasture quality, translating to healthier and more productive livestock. Rotational grazing has been implemented, which helps provide forage throughout the season, supporting later flying insects such as the target bumblebee species and boosting biodiversity.

Targets for 10% of farmland to be managed with wildlife-friendly habitats are proposed by the RSPB and GWCT (Game and Wildlife Conservation Trust) as being proven to be the most effective for birds. In relation to the percentage required by bumblebees, including priority species, we recommend between 0.25 and 0.5 ha of evenly distributed flower-rich patches per 100 ha on the farm as per Nowakowski and Pywell, 2016, from Habitat Creation and Management for Pollinators (https://bit.ly/3ILwGd9). On some sites, we have started with small habitat areas, such as a wildflower patch or some comfrey plants, then with repeat visits and continued interest have expanded to larger-scale actions such as changing grazing management or sowing wildflowers across larger fields.

To promote connectivity across the landscape, habitat patches should ideally be no more than 500m apart as this is the approximate foraging range from the nest of the priority bumblebee species. The efficacy of these patches depend on many factors, such as size, habitat quality and if continuous foraging and nesting habitat are also available. These species are only found in large, interconnected areas of habitat: the success of the species will be greater the more closely connected the patches are, as it appears they don't fly over inhospitable areas to reach forage from where they nest. Throughout the project, we have observed Brown-banded carder bees (*B. humilis*) dispersing from Braunton Burrows to sites in Croyde (1km), to Baggy point (4km) and to Woolacombe (5km).

### 3.1 Challenges in delivery

The extent of **habitat fragmentation** in North Devon presents a major challenge and requires a long-term approach. Species-rich grasslands are rare and fragmented, and both overgrazing and undergrazing of grasslands result in a loss of flower-rich habitat. There is degradation of coastal grassland through lack of scrub management and nutrient run-off; and due to intensive farming often almost to the cliff edge. This leaves very little space for wildlife.

*Overgrazing and cliff-side erosion along the South West coast path*

Many grassland habitats in the area have been significantly altered from their historical status

through heightened nutrient levels and heavy grazing, requiring restoration and or creation to introduce or reintroduce the desired species that would once have occurred across these meadows. Restoration and creation of species-rich grassland (GS7 and GS8 respectively) can be more difficult methods to carry out and are only for Higher tier agreements, with other limitations that could constrain take-up. GS8 currently offers £428 per ha, which is insufficient to cover the cost of a suitable wildflower seed mix and the associated preparation work required for grassland establishment. These factors could present considerable barriers to creating floristically rich grasslands.

There is **low AES uptake** among landowners, which is a major barrier to achieving landscape-scale habitat connectivity for pollinators. Feedback has been that the payment for grassland and other options are too low to make it financially viable and that the complexity and level of bureaucracy discourages some from entering CS agreements.

**Suitable AES options for pastoral farms are lacking** to support these declining bumblebee species, in particular by providing late season forage. For option GS2 (permanent grasslands with very low inputs), for example, this could be achieved by offering a supplement for a late hay cut; and/or leaving a block or strip of flower-rich pasture uncut until September, the location of which is rotated annually to prevent grassland becoming rank or a build-up of weeds. Paying for **capital costs for setting up rotational grazing** would be extremely valuable to encourage good management of flower-rich grassland. This approach yields great benefits to pollinators and the grassland itself. Even the practice of installing electric fencing around the edges of pastures during the summer months to allow a few metres of margin to grow could result in an increase of bumblebee foraging and nesting habitat and be less time-consuming than rotational grazing.

Landowners are put off by the **low payments for grassland options**. Recognition of the value in monetary terms of for example GS4 (legume-rich swards) and GS2 compared with arable options (such as SW1, AB1 and AB8), which all receive considerably higher payments, is urgently needed. It remains to be seen whether options under ELM schemes such as the Sustainable Farming Incentive and new Countryside Stewardship will improve the situation, with existing habitats continuing to be covered including: Managing species-rich grassland (GS6), Restoring grassland towards species-rich grassland (GS7) and Creating species-rich grassland (GS8). Higher payment rates are planned for new CS and new SFI options for 2023 cover a range of pollinator-friendly habitats, although sufficient take-up may depend on available support and encouragement for farmers.

Although almost a third of landowners in the project area are in agri-environment schemes, surveys carried out by the AONB have found that many farmers believe the agricultural transition will require major changes on the farm, with over 40% of respondents planning to pursue ELM's or CS options (https://bit.ly/3SEJB41). There appears to be quite a high amount of interest in grassland and soil management advice from farmers, as well as a need for guidance on agri-environment schemes. A large proportion of farmers are already part of farm groups including facilitation funds or are interested in joining local groups including farmer clusters.

Throughout 2023, the possibility of establishing new farmer cluster groups in key areas will be explored. It would be ideal to build on the work achieved through the Braunton Facilitation Group and Devon Greater Horseshoe Bat Project, which recently came to an end in 2021 and worked with farmers across 3,900 ha of Braunton and Caen valley. Communication has been made with some of the former group members to continue positive engagement in the area. Existing projects within the project area include the Biosphere's CRITTER project (Coordinated Response to Taw Torride Estuary Restoration), which works towards improving soil health and water quality in the locality and covers areas where priority bumblebee species have been recorded. Collaboration with partners such as this will be the most effective way to sustain effective farmer to farmer learning opportunities and partnerships in the long-term, after the completion of the WCB project.

Limitations from current farming practices on bumblebee habitat in the project area are **forage availability**, **in particular early and late in the season**. An increase in the implementation of rotational grazing would increase the opportunity for plants to flower as would temporarily fencing field margins during summer months. Delaying cutting times until late August/early September would allow meadows to flower at a key time of year for males and new queens of priority species. Establishing multispecies swards such as herbal leys could help to supplement the superior value of species-rich grasslands in the project area, especially if Red clovers and vetches are included in a diverse mix. The practices of introducing diverse leys and rotational grazing have multiple on-farm benefits, including improved soil and livestock health, increased yields, resilience to extreme weather and enhanced uptake of nutrients alongside the benefits to pollinators and other insects. It would be ideal to continue to engage with farmers regarding the benefits to the farm business of implementing bumblebee-friendly measures.

*Kidney vetch is locally abundant on some areas of the South West coast path*

Sufficient spring forage close to suitable nesting sites may be a key factor in dispersal of queens from core sites. Key flower species in spring include White dead nettle, Common bird's foot trefoil, Red clover and Viper's bugloss and Kidney vetch in more coastal habitats. Later summer flowering species include Common knapweed, Water mint, Tufted vetch and second flushes of Red clover. These plants are present in the landscape, but not in large enough quantities with good connectivity. Suitable flower-rich habitat is restricted to islands that need to be greatly increased in order to reach thresholds to secure long-term stability of priority bumblebee populations. These habitats are fundamentally important to the survival of priority bees and other pollinators in the south west.

The weather during 2022 was warm and dry, with the UK having the 4th warmest summer and 10th driest on record (https://bit.ly/3xEg1C5). Locally, the 2022 provisional data from Chivenor weather station shows the mean summer temperature (June/July/August) as 17.6°C, although some summers have been warmer, with the summers of 1995 and 2018 both 17.8°C (https://bit.ly/3EjFPrK). Late flying species, such as the target bumblebees, are particularly vulnerable to the effects of sustained warm weather in the early summer since many of their food plants had already gone to seed by the end of the season. However, in some parts of the project area, Common knapweed was proving to be a good drought-resistant plant in mid-August, providing essential floral resources and attracting an abundance of pollinators. In wetter areas, Water mint (e.g. in damp slacks of Braunton Burrows) was also providing vital forage throughout August and September, reinforcing the importance of restoring wetland habitats in the landscape for supporting pollinators and many other species during drought conditions.

*Deep-rooted knapweed flowering well in the 2022 drought compared to parched grasslands in the background*

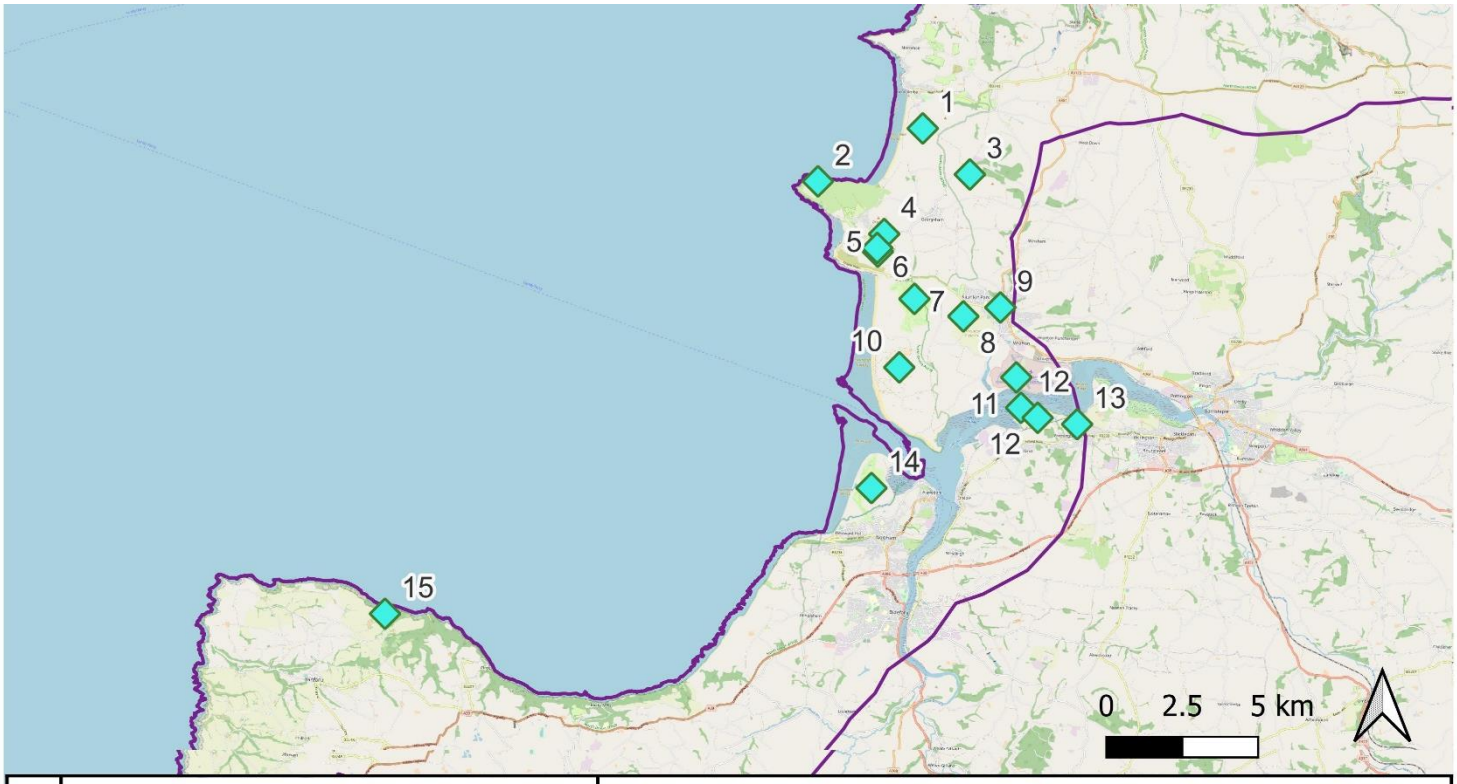
## 4. Concluding remarks

The results of our Nature Recovery Network pilot project indicate the importance of local interventions, and upskilling individuals; as well as the necessity of support for small scale activities and 1 to 1 advisory work. A long-term project approach is also necessary – it is not until year 5 of the project that we have started to see the species respond to habitat changes. Continued input is needed from an advisor for technical advice, and for keeping enthusiasm and motivation going.

Initial findings indicate that a bottom-up approach works. As clusters of farmers and enthusiasts have become established, we have been able to start spreading our efforts out from these core areas to include more landowners. This is facilitating joined-up habitat creation at gradually bigger and bigger scales, which is essential in allowing pollinators to recover to their former ranges. Landowner engagement work and habitat creation and restoration takes a long time – to establish networks and build trust, and for ongoing advice and support. To tackle landscape scale habitat restoration requires long-term investment.

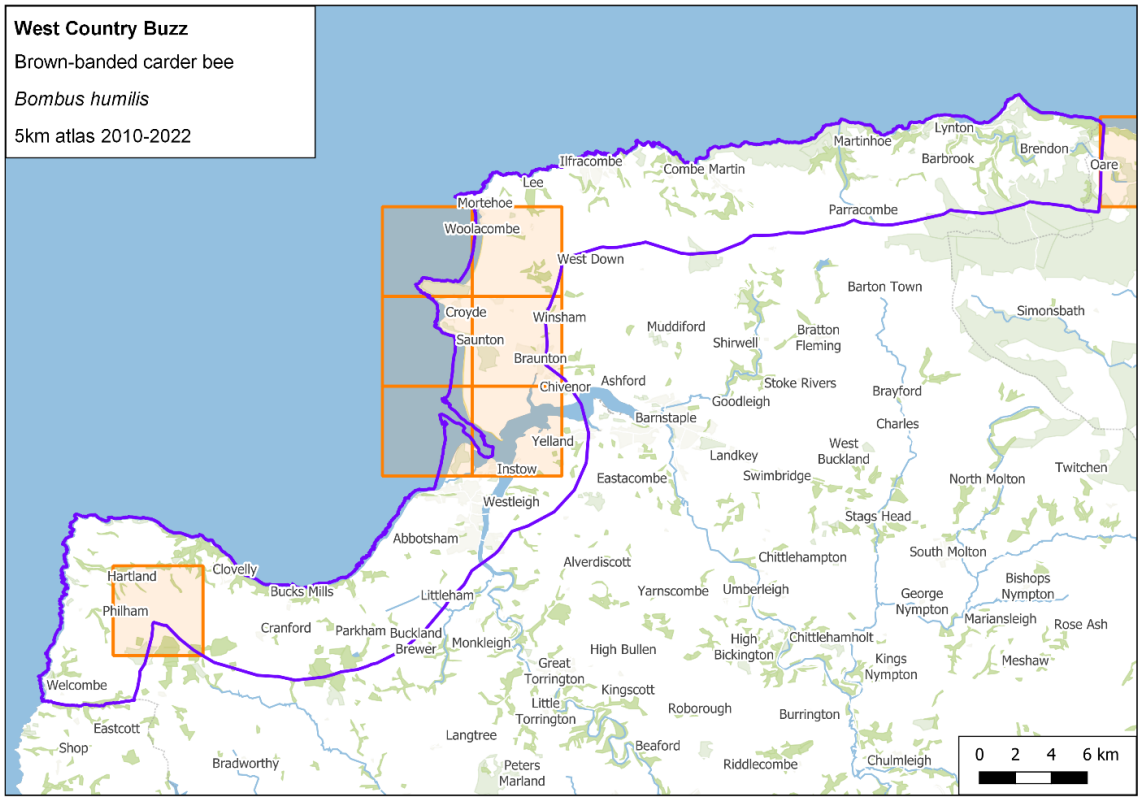
# Appendix

*Map 1: Key locations mentioned in the report*



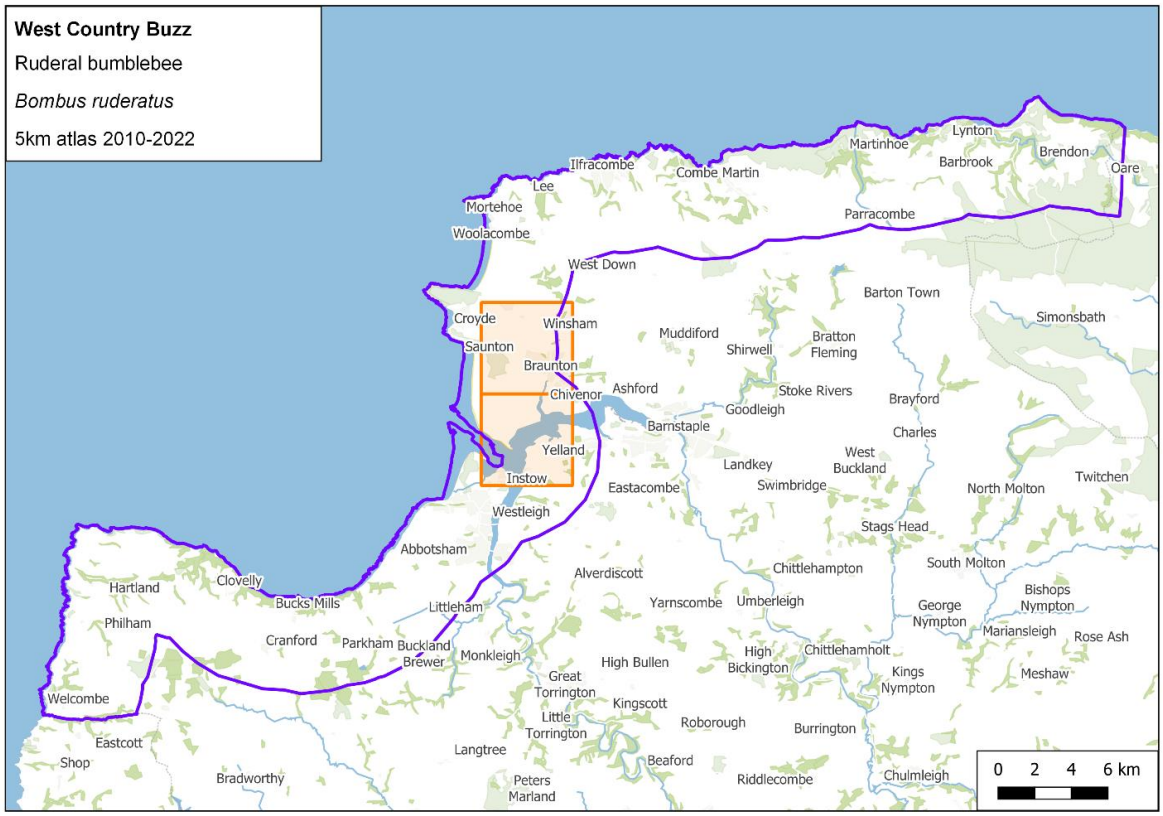

| No. | Site | Info |
|---|---|---|
| 1 | National Trust - Woolacombe Down and Vention | Receptor sites for locally collected seed |
| 2 | Baggy Point | New B. humilis sighting |
| 3 | Middle Spreacombe - Georgeham fields | Location of 17.5ha of green haying |
| 4 | Croyde | New B. humilis sighting |
| 5 | Roylands | Assisted with 2022 Countryside Stewardship application |
| 6 | Roylands and neighboring NT site | New B. humilis sightings |
| 7 | Saunton Golf Club | New B. humilis sighting and location for seed harvesting |
| 8 | Broadlands Farm | Assisted with 2022 Countryside Stewardship application |
| 9 | Braunton verges | Site of community wildflower planting event |
| 10 | Braunton Burrows | Case study site and location for seed harvesting, field ID sessions and bioblitz |
| 11 | RMB Chivenor | Seed harvesting location |
| 12 | Home Farm Marsh | New B. humilis sighting |
| 12 | Home Farm Marsh | Assisted with 2022 Countryside Stewardship application |
| 13 | Fremington | New B. muscorum sighting |
| 14 | Northam Burrows | Location for field ID sessions and bumblebee safari |
| 15 | Windbury Hillfort | New B. humilis sighting |

*Map 3: 5km distribution of Brown-banded carder bee in the project area*

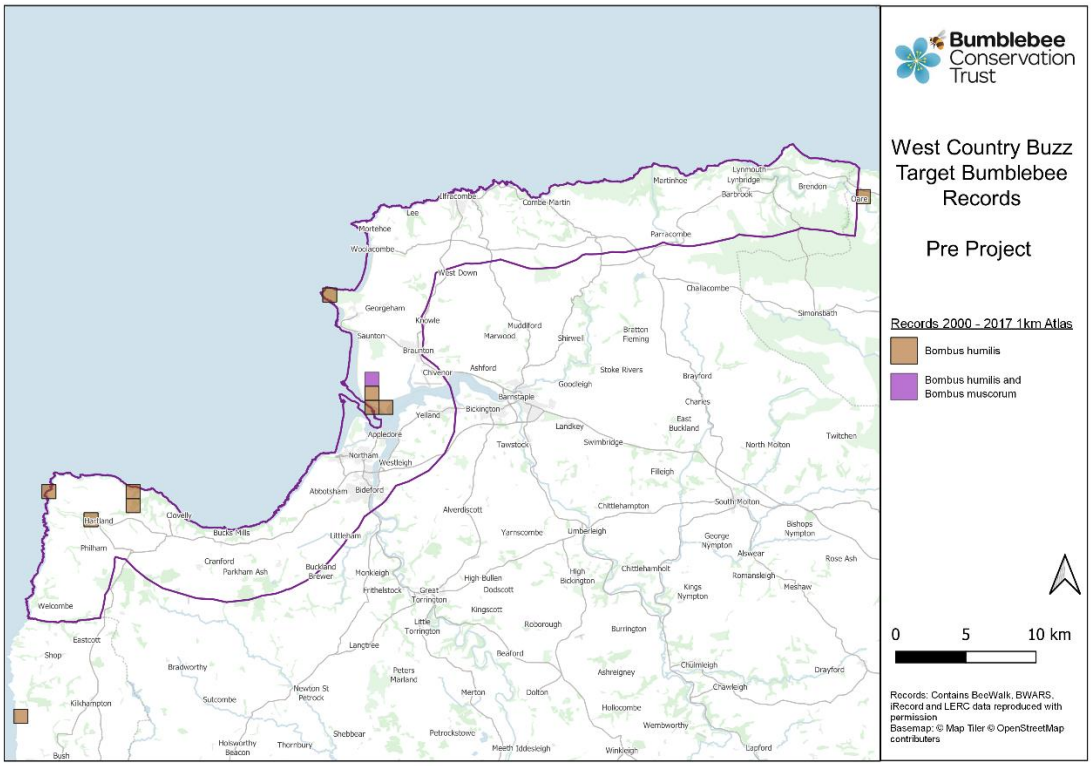



*Map 4: 5km distribution of Moss carder bee in the project area*

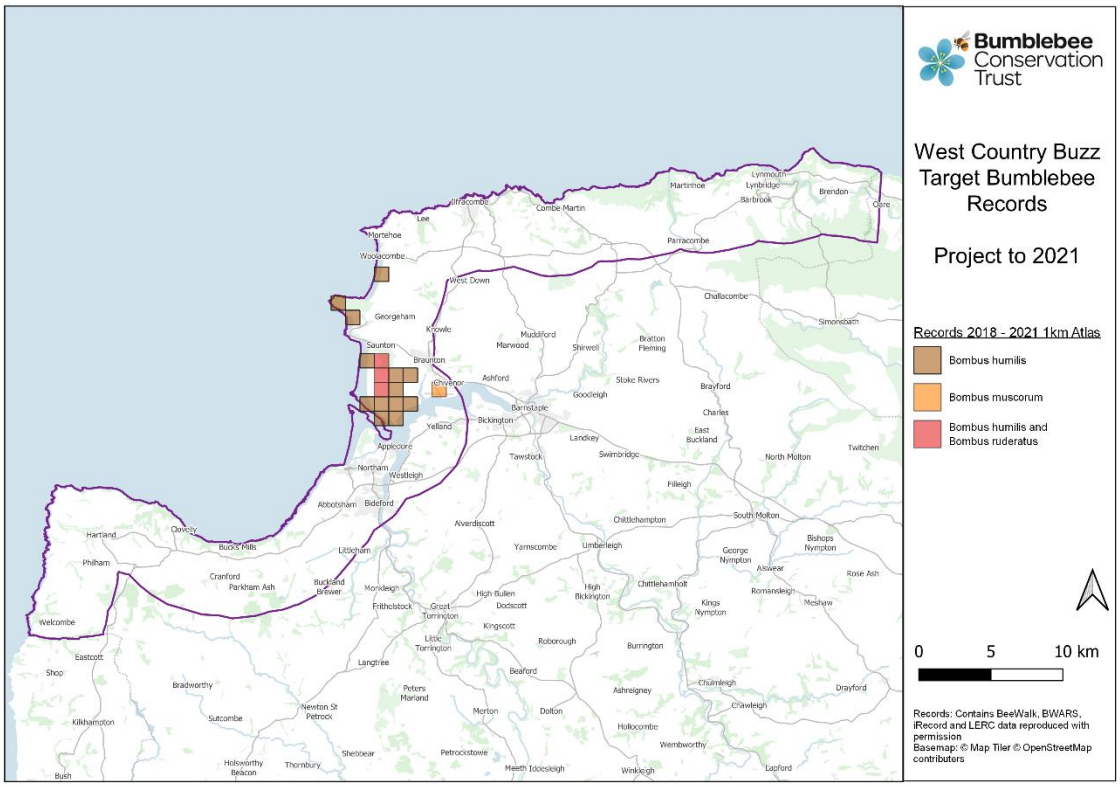
*Map 5: 5km distribution of Ruderal bumblebee in the project area*



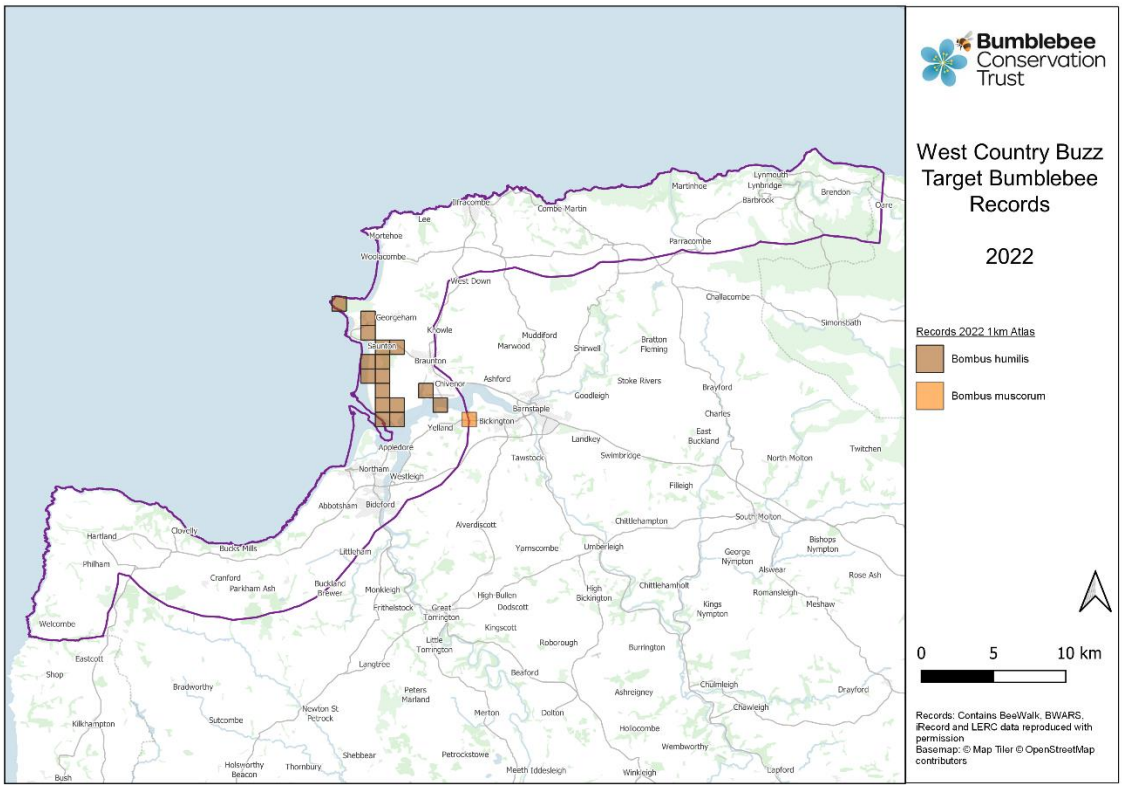

*Map 6: Priority species records 2000–2017 (prior to WCB project)*



*Map 7: Priority species records during WCB project (2018-2021)*




*Map 8: Priority species records for 2022*



Below is a summary of progress against the delivery profile for April 2022 to March 2023.

| Objective | Outcome | Output | Actions for BBCT / NE & staff responsible for delivery and reporting | Date for completion of output | Payment milestone £ and date |
|---|---|---|---|---|---|
| **1. Survey and monitor the abundance and distribution of bumblebees, with a focus on S41 species** | An increase in bumblebee records and trained recorders in Devon | Gather evidence on bumblebee distribution and abundance in North Devon, with a focus on Brown-banded carder bee and Moss carder bee, and the Ruderal bumblebee. Identify opportunities for habitat and species connectivity. | Produce a map of bumblebee records to demonstrate abundance of records and distribution of recording effort<br><br>1 beginners/intermediate identification session<br><br>2 field practice sessions<br><br>1 bioblitz<br><br>2 case study sites – ongoing monitoring<br><br>Support Braunton Parish Council and North Devon AONB to monitor road verges under new management<br><br>24 BeeWalk transects, both new and existing, continuing to submit data for long-term monitoring<br><br>Continue to add to baseline of distribution data for the Ruderal bumblebee, Brown-banded and Moss carder bees to monitor their recovery | March 2023<br><br>May 2022 (11 participants)<br><br>3 delivered, May, June, July (14 people)<br>1 safari (23 people)<br><br>2 delivered, Aug 2022 (81 people)<br><br>March 2023<br><br>March 2023<br><br>March 2023<br><br>March 2023 | NE payment of £30,000 to be in two instalments. First instalment paid by 31st October 2022 on receipt of interim report. Second report to be completed by the end of March 2023. Payment on receipt of final report. |

| Objective | Outcome | Output | Actions for BBCT / NE & staff responsible for delivery and reporting | Date for completion of output | Payment milestone £ and date |
|---|---|---|---|---|---|
| **2. Advice and support, raising awareness of what pollinators need to survive and thrive, with landowners, farmers and the public** | Raise awareness and identify actions needed.<br>Engage with landowners and local communities to deliver outcomes for habitats and species | Greater uptake of positive measures and a joined-up, integrated approach<br><br>Focused training / events and practical 1-to-1 land management advice | Ongoing support and land management advice (including site visits) for 15 landowners and farmers<br><br>Develop a strategy for a species recovery plan by beginning a knowledge review, identifying partners and starting a threat analysis<br><br>Encourage formation of a Farmer Cluster group<br><br>1 farm day with guest speakers, to provide land management training to key partners, landowners and farmers to upskill and provide confidence in decision making for bumblebees.<br><br>1 event for the public on wildflower habitat and road verge management with planting advice<br><br>Write 1 article for farmers and landowners, and post project updates on BBCT website/social media<br><br>4 real-life or virtual talks via Zoom<br><br>Communicate with and work in partnership with local NGOs and other parties in the project area, and try to embed bumblebees into work plans | March 2023<br><br>March 2023<br><br>March 2023<br><br>Sept 2022 (17 attendees) and another March 2023 (11 attendees)<br><br>Sept 2022 (45 people)<br><br>March 2023 (Article for NFFN)<br><br>March 2023 (6 talks to 235 people)<br><br>March 2023 | |
| **3. Habitat management, increasing the area of suitable habitat and connectivity around existing populations of** | High quality and targeted habitat management for pollinators and broader ecosystem restoration | Landscape scale habitat creation and connectivity, and species recovery | Focus on working with current landowners rather than actively seeking new contacts, but continue to engage with new landowners who approach the project, to create suitable habitat in the project area<br><br>Map pollinator habitat and review ways to join up habitat and where to target efforts | March 2023<br><br>March 2023 | |

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| **target species, using an integrated, landscape scale approach** | | | Create habitat for bumblebees and wild pollinators through ongoing advice, promoting Countryside Stewardship, voluntary measures, work party days and providing seed<br><br>Work towards overall project habitat target (160 ha created / restored / under improved management by project end).<br><br>1 green haying and 1 seed harvesting event | March 2023<br><br>March 2023 (150.68ha to date)<br><br>July, Aug and Sept (5 seed harvesting days and 1 green haying event) | |
| Review project | Review approaches to targeted landscape scale delivery and Nature Recovery Network | Project review | Review Nature Recovery Network pilot<br><br>Record number of landowners given 1-to-1 advice, number of repeat visits, ha's of land advised upon, and ha's of land that positive measures for wild pollinators have been achieved on (including ongoing management of existing Countryside Stewardship agreements, new Countryside Stewardship agreements, and voluntary measures)<br><br>Analyse case study sites data<br><br>Measure consolidation of habitat and connectivity through mapping habitat improved or created across the landscape<br><br>Landowner evaluation questionnaire<br><br>Review project's success through evaluation of survey and monitoring data, including presence of S41 species in new sites | March 2023 – March 2024<br><br>March 2023<br><br>March 2023 – March 2024<br><br>March 2023<br><br>March 2024<br><br>March 2023 – March 2024 | |

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|---|---|---|---|---|---|
| Report on progress made | Effective flow of communication | Progress reports | Regular communications and internal updates to BBCT, and to Bees Needs<br><br>Short progress update<br><br>Interim progress report<br><br>End of year report | March 2023<br><br>June 2022<br><br>Sept 2022<br><br>March 2023 | |