West Country Buzz: Nature Recovery Networks initiative

End of year report
April 2018 – March 2019

Dr Cathy Horsley
West Country Buzz Conservation Officer
cathy.horsley@bumblebeeconservation.org

Funded by:

[Logos of Bumblebee Conservation Trust and Natural England]
Natural England and the Prince of Wales Charitable Foundation are generously supporting the Bumblebee Conservation Trust project, West Country Buzz. The project focuses on the Brown-banded carder bee and Moss carder bee on the North coast of Devon. The objectives are to survey and monitor; to provide advice and support to raise awareness; and to provide habitat management assistance. The project is being carried out by BBCT Conservation Officers Cathy Horsley and Daisy Headley.

Our focus area is a 5 km strip along the North Devon coast in which we will pilot approaches towards development of a Nature Recovery Network (NRN), targeting the S41 Brown-banded carder bee and Moss carder bee and benefiting a broad range of other pollinating insects. The NRN will be used to create, restore and join up pollinator habitat at a landscape scale, and will integrate a wide variety of landowners, farmers, and organisations in the area.

Background

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. Remaining habitat is under threat, such as from 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

- **Targeted bumblebee surveys** have taken place across North Devon, yielding **463 bumblebee records**
- A **new site for the Brown-banded carder bee** was discovered at Hartland Quay, and a **new site for the Moss carder bee** was discovered at RMB Chivenor
- **30 landowners across 38 sites** have received in-depth **management advice and follow-up support**
- **67 people** attended **five workshops and two field practice sessions**
- **1004 people** have been **engaged with at events**
- **30 farmers attended two Farm Days for Facilitation Fund Groups**
- **538.4 ha** has been **advised on**
- **14.12 ha of pollinator habitat has been created**
- **24 partner organisations** and voluntary groups have collaborated on the project
- **7 new BeeWalks** have been set up, and **3 case study sites** have been monitored to gather evidence
- **Part-funding has been secured** for 2019 from the Dulverton Trust

*The Moss carder bee (Bombus muscorum), one of the target bumblebee species. In Devon, modern records (post-2000) were from a single site until extensive surveying in 2018 discovered a new site for this bee at RMB Chivenor*
Project objectives

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

1.1 Training

To achieve the outcome of an increase in bumblebee records and trained recorders in Devon, we ran four beginners and one intermediate bumblebee identification workshop, and two field practice sessions in 2018 (67 attendees).

Braunton Burrows is one of the last remaining sites for the target bumblebees, and was the site of two of the project's workshops.

A survey of 48 participants was conducted (Figure 1). 100 % of participants scored either a four or five out of five for increasing knowledge of bumblebee ecology, and for the delivery of the event. 83 % of people were likely to record bumblebee sightings, and 50 % were likely to join BeeWalk (scoring four or five out of five), BBCT’s national bumblebee recording scheme.

Figure 1: Results of a survey of 48 workshop participants in 2018

1 See Appendix for a summary of the project objectives achieved against the work plan
Lack of data is a major barrier to implementing a successful species recovery plan. Recording bumblebees requires a level of skills and experience, and the project’s workshops and other training events are aimed at filling this knowledge gap within the project area.

Prior to WCB, there were only two BeeWalk transects in and around the project area, one of which was inactive. In 2018, there was a 2.5-fold increase in the number of active BeeWalks (Figure 2), with 7 active BeeWalks now present. Also, the National Trust are adopting BeeWalk to monitor their land at four sites in North Devon from 2019. Across Devon, there were 26 registered BeeWalk transects in 2018, making it the second most-recorded county in the UK (after Kent). This reflects an increased BBCT presence in Devon through phase one and two of West Country Buzz.

**Figure 2:** Distribution of the seven BeeWalk transects in North Devon in 2018

To encourage more BeeWalkers, 15 BeeWalk kits were purchased (net, pot, bee marking cage, identification guide and hand lens) for new and existing BeeWalkers in the vicinity of the project area. Ten have been allocated. Project staff are providing mentoring and extra training to new BeeWalkers to build skills and confidence, which are known barriers to starting a transect. A long-term aim is that more experienced BeeWalkers will act as mentors to new volunteers.

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*Feedback from workshop participants*

“Marvellous great fun day. Interesting - learned a lot. Thank you”

“Really good day. Increased knowledge and understanding and enthused me. Will continue to try to hone identification skills and plant for bees”

“An extremely successful event which has given me more knowledge and confidence to id and study further.”

“A really excellent id workshop. I have learnt a vast amount. Thank you!”
1.2 Surveys 2018

Bumblebee surveys

Targeted bumblebee surveys have taken place across the project area, recording all bumblebees both rare and common. A contractor, Patrick Saunders, was engaged to assist with surveying and to provide additional technical training for staff on species identification. Volunteers and landowners have been invited to join BBCT staff in the surveying.

The 2018 surveys yielded 463 bumblebee records in the project area (which includes BeeWalk data) (Figure 3), and 19 bumblebee species were recorded. Note 2018 data from the Devon Biodiversity Records Centre are pending, so this is an under-estimate of recording effort from the wider recording community. A new record for the Brown-banded carder bee was found at Hartland Quay, and for the Moss Carder bee at RMB Chivenor. This makes only three known modern sites (records post-year 2000) for the former, and two for the latter in the whole of Devon.

Habitat surveys

A mixture of aerial photograph interpretation, broad phase one surveys, and detailed botanical surveys were used to assess the distribution and extent of suitable habitat for the target bumblebees. This was used to identify opportunities for habitat creation and management, in a strategic way. By working at a landscape scale across the project area, we were able to examine how best to target our conservation efforts to join up habitat. We focused our work around existing populations of the rare bumblebee species.
Why are there such low numbers of the Brown-banded and Moss carder bees in Devon?

Low numbers may be due to the warm and dry conditions of summer 2018. Bumblebees prefer cooler conditions, and grasslands were noticeably lacking in forage, being dry and brown by July. The Met Office summary of 2018 confirms that June and July 2018 saw daytime temperatures well above average in all areas, with only short unsettled spells bringing rainfall of mostly a showery nature. The numbers could be an under-representation – bumblebees may have been flying earlier and later in the day when temperatures were cooler, which was outside of the survey time.

A lack of flower-rich grasslands is a major driving factor. North Devon is intensively farmed in places, and there are multiple pressures on land use, including tourism and amenity spaces. This means that flower-rich grasslands are limited.

Habitat fragmentation is key to their decline in North Devon. There are pockets of suitable habitat remaining, but they are isolated and must be joined together for them to become suitable for supporting these bees. These bumblebees are typically found in connected habitat with high abundances of their favoured food plants, such as Red clover and Kidney vetch.

A lack of late season forage was noted. The Brown-banded and Moss carder bees typically fly between May and September. After the July hay cut, there was little forage available apart from isolated pockets; both in the farmed landscape and more widely.

Unsuitable management of flower-rich grasslands for pollinators was evident. There are species-rich and diverse grasslands remaining across North Devon, but large areas were grazed too heavily over the spring and summer to allow flowering. Conversely, other areas were scrubbed over through lack of grazing.

How can this be addressed to allow species recovery?

Using a Nature Recovery Network approach, we are tackling the barriers to species recovery that we identified; that is, the lack of species-rich grassland, its fragmentation, and the lack of late-season forage.

Stage one involved working at a landscape scale, across the whole project area (Figure 1) to identify where populations of the Brown-banded and Moss carder bees are. We also worked at this broad scale to assess the habitat for suitability for these species, and to identify areas that could be improved. Stage two involved working at a finer scale to target our efforts in habitat creation and restoration for recovery of these species (Figure 4, dark blue areas). Current and ongoing work is focused around Braunton burrows, Baggy Point, Hartland quay, and the surrounding areas. In these areas, we are working at a local level to engage with landowners, farmers, and the local community to create and join up habitat. Stage three is to then radiate out from these areas more broadly, engaging in a similar way, to gradually join up these areas at a bigger and bigger scale (Figure 4, lighter blue areas).
Figure 4: Nature Recovery Network in North Devon. Dark blue areas are buffer areas around records of the Brown-banded and Moss carder bees (records since 2000) showing the area in which much of the advisory work and habitat creation has taken place in 2018, representing Stage 2 of the project. The lighter blue areas show where future work will focus (Stage 3 of the project) helping to gradually join up pollinator habitat across the landscape, allowing species to recover and creating resilience in populations. Nature Recovery Networks are explored in more detail in Section 7.

1.3 Case study monitoring sites

To measure the success of the Nature Recovery Network and the impact of changes in management on the target species, two case study sites have been identified: Baggy Point and Braunton Burrows. A third, Blegberry Farm, was monitored since it occurs in a key area and could potentially support the target bumblebee species. However, a decision was made to change the third case study site to Cheristow Lavender farm, which will be surveyed from 2019. This is because it is entering into Mid Tier and monitoring would be beneficial to measure the effects of management changes. At each site, detailed bumblebee and habitat data is being collected each year. Bumblebee populations were monitored using BeeWalk, and vegetation surveys were conducted in May, July and September to record early, mid and late season forage.
Case study monitoring site: Braunton Burrows

Braunton Burrows, owned and managed by the Christie Estates, is the last remaining site in Devon where the Brown-banded carder bee is found in reasonable numbers. It covers approximately 1000 hectares and comprises of dunes, slacks, grassland plains, dense scrub and ponds, and is a designated UNESCO world biosphere reserve and SSSI.

Six bumblebee species were recorded at Braunton Burrows on the BeeWalk transect in 2018, including the Brown-banded carder bee. The last record of the Moss carder bee at Braunton Burrows was in 2009 but it may still be present. We discovered the Moss carder bee at RMB Chivenor in 2018, which is 3 km east of the Burrows.

Anecdotal evidence suggests that the abundance of the Brown-banded carder bee is in decline on the Burrows. We do not have sufficient data to confirm this or identify a cause, but the isolated nature of the population could lead to inbreeding depression; and/or bumblebee numbers could reflect the abundance of forage on the Burrows.

Large-scale management works are planned to restore the slacks which have become densely vegetated with scrub. Whilst it is understood that this management is needed to maintain biodiversity, we have raised concerns about the short-term effects these works may have on the Brown-banded carder bee population. To gather more data on bumblebee abundance and distribution and the impact of this management, in addition to a BeeWalk and vegetation surveys, a three-day bumblebee blitz is planned for August 2019 to survey the Burrows more extensively. Due to the vulnerability of this population it is essential to determine the effects these works may have upon the species in both the short- and long-term; particularly in view of the lack of knowledge regarding how they might be using the site for hibernation.

Proportion of flowers receiving bumblebee forage visits on the BeeWalk transect, 2018 (right).

Vipers bugloss received the most bumblebee foraging visits (8 visits), followed by Creeping thistle (5 visits) and Wild thyme (3 visits).
Case study monitoring site: Baggy Point

Historically, Baggy Point was home to the Brown-Banded carder bee (last recorded in 2000). However, it has not been sighted since, and a BBCT survey in 2017 and 2018 concluded that it is unlikely to be present. This is because of a lack of habitat both at Baggy Point, and in between it and the only known surviving population at Braunton Burrows (approximately 6 km away).

Our vegetation survey found that Bracken dominates the northern slope. There are pockets of flower-rich acid grassland adjacent to the path where disturbance has reduced Bracken cover, indicating that the sward could be of high quality with Bracken control. The western side of the Point lacks flowers and the grassland is rank and tussocky in places. There are some favoured bumblebee food plants but these largely did not reach flowering.

In summer 2018, a new grazing regime was introduced by the National Trust (who own the site) on the northern and western sides. Underground “invisible” electric fencing was installed, and four Devon Red cattle now graze. They have been trampling the Bracken and eating the rougher grasses, opening up the sward. Vegetation surveys will be repeated in 2019, and it is expected that these areas will become more flower-rich.

The southern slope is species rich, but partly over-grazed by sheep. The NT are reducing sheep grazing from 2019. Along the path at the top of the slope, Bramble and Gorse scrub dominate. This scrub provides shelter and food to foraging insects but needs to be reduced to increase diversity. The NT have since scalloped areas of scrub along the path to remedy this.

A training workshop for NT staff and volunteers was delivered at Baggy Point. The local NT ranger also accompanied BBCT staff on monthly BeeWalks. The ranger has now set up two new BeeWalk transects at neighbouring NT land, and BBCT staff will be training a NT volunteer to walk the Baggy Point transect.

At Baggy Point carpark, wildflower seeds provided by BBCT and NT were sown, creating 35m² of pollinator habitat. There are plans to put up interpretation to help educate visitors and engage the local community.
2. Advice and support: raise awareness of what pollinators need to survive and thrive, with landowners, farmers, and the general public

Since April 2018, 30 landowners and farmers across 38 sites have been visited and given in-depth management advice (target number was 25) (Figure 5). All received a site visit, an information pack, and a bespoke summary report with recommendations. On-going follow-up support has been given as needed, such as repeat visits to implement the management plan, follow-up phone calls, provision of resources, and repeat bumblebee surveys.

[Image: Distribution of 30 landowners and farmers, across 38 sites in North Devon who received in-depth land management advice, and follow-up support between November 2017 and March 2018.]

The total area advised across the 38 sites was 538.4 hectares, and 14.12 hectares of pollinator habitat was created (Table 1). The latter is detailed in the next section.

| Table 1: Summary of sites visited, area advised on and habitat created (hectares) |
|---------------------------------|-----------------|-----------------|
| Number of sites visited         | Area advised on (ha) | Habitat created (ha) |
| 38                              | 538.4            | 14.12            |

The importance of one-to-one support

Regular one-to-one support is fundamentally important in implementing changes to management:

- enables provision of a bespoke management plan, which is more likely to be put in place than generic advice
- effective communication ensures that the management plan is being interpreted as intended
- building up trust takes time, and makes changes more likely
- keeps enthusiasm high and momentum going
- allows trouble-shooting – as problems arise, they can be resolved quickly
- facilitates small, easy-to-achieve changes to take place one at a time, making bigger changes in management less daunting and more achievable, since they are gradual. Easy changes also mean that even if only small scale changes happen, they add up to a larger whole across the landscape
- identifies even more ways to support pollinators following further conversations as the relationship builds and more interest in the project is garnered
- unhurried and repeated meetings as needed helps to get past barriers to changing management
Most sites are in either HLS and or ELS (63 %) (Figure 6) and needed additional support to improve the delivery of their agreement for pollinators. One landowner has submitted a Mid Tier application. Of the 13 (34 %) not in a scheme, eleven are ineligible as they are less than 2 ha or have a non-agricultural land use (e.g. amenity space), or have other restrictions (e.g. observatory, military). Two are eligible for Mid Tier, and have received advice through the project, and through the local Facilitation Fund Group.

**Figure 6:** Proportion of the 30 landowners and farmers receiving support from the project in 2018 that are in HLS and/or ELS, applying for a scheme, or in no scheme

A farm day was conducted for members of the Braunton Facilitation Fund Group (12 attendees) and for the Taw Valley Facilitation Fund Group (18 attendees), focusing on habitat management for pollinators. These were well-received, and led to one-to-one advisory visits and other local events. There are plans for two more farm days in 2019, in the Braunton area.

**A farm day for Braunton FFG members to discuss habitat management for pollinators**

We have engaged with 1004 people at events. This includes North Devon AONB’s bioblitz at Northam Burrows (320 attendees), and a bumblebee safari (23 attendees). A talk at the Farmer Cluster conference was given in November (250 attendees), and a poster about the project was presented at the Devon Local Nature Partnership conference. Talks have been given to local groups in and around the project area (383 attendees). A Christmas celebration event was held for landowners, farmers, volunteers and partners (28 attendees), to share updates on the project, and thank participants for their involvement.
The project’s Twitter account is updated regularly, and the project features on the BBCT website in its own page and on blog posts. Articles have been featured in newsletters for the Exmoor National Park, and in the Campaign for the Protection of Rural England. West Country Buzz also featured as part of an article for South West Farmer. The project appears on the Farmer Cluster website, and BeeWalk is a recommended tool for recording farm wildlife.

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

To identify opportunities for changes in habitat management, surveys took place at a landscape scale across the whole of the North Devon coast. Habitat management work has been focussed at a smaller, local scale, building resilience around areas with recent records of the target bumblebee species (i.e. recorded in the last 20 years). The longer-term aim is to expand this work with local communities to join up fragments of habitat, gradually expanding out from these areas over time.

A wildflower meadow has been created at Baggy Point car park in collaboration with the National Trust and their volunteers. This has created 35 m² habitat, and will help raise awareness with the local community and visitors to the area on pollinator declines.

Across the project area, 14.12 hectares of pollinator habitat has been created (Table 2). Innovative habitat creation, outside of agri-environment schemes, has been achieved through providing financial assistance from within the project budget to landowners and others within the project area (Table 3). This small provision of resources has been instrumental in building trust, demonstrating the project’s commitment to the cause, and in offering an easy and accessible way for people to become actively involved in the project. This has opened up further opportunities for more habitat creation, networking, and in engaging volunteers, landowners and farmers.

Table 2: Habitat created in 2018 with landowners, farmers, local businesses and the local community

<table>
<thead>
<tr>
<th>Habitat management</th>
<th>Habitat created</th>
<th>Area (has)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrub clearance</td>
<td>Flower-rich coastal grassland</td>
<td>1.8</td>
</tr>
<tr>
<td>Remove grass cuttings</td>
<td>Flower-rich coastal grassland</td>
<td>0.002</td>
</tr>
<tr>
<td>Planting on landholdings in areas outside of AESs</td>
<td>Bumblebee forage plants</td>
<td>0.005</td>
</tr>
<tr>
<td>Planting around holiday park; rotational late cut in meadow; scrub clearance</td>
<td>Bumblebee forage plants</td>
<td>0.5</td>
</tr>
<tr>
<td>Scrub clearance, meadow planting</td>
<td>Flower-rich coastal grassland, meadow</td>
<td>1.004</td>
</tr>
<tr>
<td>Re-seeding meadows</td>
<td>Meadow</td>
<td>0.1</td>
</tr>
<tr>
<td>Rotational grass cutting</td>
<td>Nesting habitat</td>
<td>0.006</td>
</tr>
<tr>
<td>Rotational grazing</td>
<td>Meadow</td>
<td>10.4</td>
</tr>
<tr>
<td>Over-sowing species-poor grassland</td>
<td>Flower-rich coastal grassland</td>
<td>0.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>14.12</td>
</tr>
</tbody>
</table>
Habitat creation through rotational grazing

At a tenanted field near Hartland, the quality of the sward is good and bumblebee forage plants are abundant. This includes Red clover, Birds foot trefoil and Knapweed. However, the grazing and cutting regime meant that there was a lack of food late in the season; there was little left flowering after the hay cut, and after-math grazing was heavy. Late season forage is also particularly lacking in the wider environment.

An agreement was reached to introduce rotational grazing by splitting the field into eight compartments. Hay cutting was proving costly and impractical due to the size of the field. Rotational grazing provides continuous food to the cattle and a fresh clean sward. The rested compartments have enough time to reach flowering before the cattle re-enter, meaning that there should always be some forage for pollinators available. West Country Buzz contributed to the set-up costs of purchasing drinkers and hoses.

Habitat creation through hay meadow restoration

Hillsborough Hillfort (Local Nature Reserve) has many bumblebee forage plants including Foxglove, Birds foot trefoil, and Bramble. However, the Bramble and Blackthorn scrub have become dominant. The Hillfort is in a key area as a potential stepping stone for the target bumblebees to move through the landscape.

BBCT have been working with the owners (North Devon Council) to implement new management plans to reduce scrub and restore the flower-rich coastal grassland. BBCT have purchased a manual baler, and the AONB have purchased hand tools, to enable hay cutting on the steep site which is inaccessible for machinery.
Table 3: Items bought for landowners and farmers to create habitat for pollinators using funds from the West Country Buzz project.

<table>
<thead>
<tr>
<th>Item bought</th>
<th>Habitat created</th>
<th>In a scheme?</th>
<th>Why was it needed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pots, compost, seed</td>
<td>Bumblebee forage around holiday park &amp; education area. “Hub” of bumblebee plants available for local community</td>
<td>Partly in HLS</td>
<td>To improve land outside of scheme, and create an educational area. Opportunity to engage local community. Key site for target bees</td>
</tr>
<tr>
<td>Plant plugs and wildflower seed</td>
<td>Bumblebee forage in garden</td>
<td>HLS</td>
<td>To improve habitat around farm, area not in a scheme. Key site for target bees</td>
</tr>
<tr>
<td>Wildflower seed</td>
<td>Wildflower meadow and re-seeded bank</td>
<td>No</td>
<td>Car park area, not eligible for a scheme</td>
</tr>
<tr>
<td>Wildflower seed</td>
<td>Wildflower meadow</td>
<td>No</td>
<td>Smallholding not eligible for a scheme</td>
</tr>
<tr>
<td>Wildflower seed</td>
<td>Wildflower meadow</td>
<td>No</td>
<td>Business, not eligible for a scheme</td>
</tr>
<tr>
<td>Wildflower seed</td>
<td>Wildflower meadow</td>
<td>No</td>
<td>Business, not eligible for a scheme</td>
</tr>
<tr>
<td>Drinker and hose</td>
<td>Flower-rich pasture, through rotational grazing</td>
<td>No</td>
<td>Single tenanted field, not eligible for a scheme</td>
</tr>
<tr>
<td>Manual hay baler</td>
<td>Wildflower meadow</td>
<td>No</td>
<td>Nature reserve. Steep area, inaccessible for machinery. To enable meadow restoration</td>
</tr>
</tbody>
</table>

Specific measures to help the Brown-banded carder bee and Moss carder bee include recommending higher proportions of legume species such as Red clover and Kidney vetch in seed mixes which are favoured food plants; and recommending rotational late cuts in hay meadows to provide late season forage. We have targeted habitat creation work based on where populations of these target bees are found, and where we can create stepping stones through the landscape to allow movement.

Changes in grassland management in North Devon could have an enormous impact on species recovery, and is a target for work in 2019. These management changes take time however, requiring diplomacy and a deeper understanding of the many different pressures faced by farmers and landowners. It also takes time to build trust and gather interest in the project from the community, which is developed through a presence in the area over time. We have identified grasslands that could be quickly brought back into a highly favourable condition for the target bumblebees, requiring only changes in management rather than restoration.

4. Scaling up Partnerships

Partnership and collaborations are essential for landscape scale working. We have worked with 24 partner organisations and local groups in the project area, including Natural England, Devon Wildlife Trust (DWT), North Devon AONB, National Trust, and RSPB. For example, we are sourcing local seed from DWT; and have collaborated with the AONB to each provide tools for the council and their volunteers to re-instate meadow management.

These partnerships are essential for a co-ordinated effort across the project area. Whilst landscape scale work is vital, we are also scaling back to work more at a local level in order to create high quality, joined up pollinator habitat, and to build up a relationship with the local community. By encouraging local participation and ownership, we hope to leave a legacy after the end of the project. This is evidenced by members of the local community already using their own initiative to promote pollinator habitat management with their Parish council; and other organisations adopting BeeWalk as a way of monitoring their own habitat management.

5. Accessing funding streams

BBCT has a small fundraising team that works closely with field staff and managers across the country to identify and secure project funding shortfalls. Each project usually has a main funder identified, who is committed to supporting the project over the life of the project or, as in the case of Natural England, on an annual renewable basis. (A commitment to life of the project is preferable and Natural England may wish to consider giving this assurance even if the financial commitment is given on an annual basis). The fundraising team will identify a portfolio of possible Charitable Trusts and Foundations based on whether the project meets their criteria and the appropriate approaches are made. Corporates are also approached in a similar way.
Where appropriate and if circumstances permit, BBCT will make a cash contribution or partially underwrite a project to ensure its success. BBCT will follow strict internal procedures in line with its financial management and reserves policy when undertaking this commitment. There is strong competition for funding from Charitable Trusts and Foundations, the commitment by a main funder to support a project gives greater confidence and assurance to others who are considering funding the project. BBCT therefore welcomes the backing of Natural England, both financial and advisory, for the West Country Buzz project in North Devon.

The Prince of Wales Charitable Foundation supported West Country Buzz in 2018-2019. Full details of this and other funds received will be submitted in the financial report. The Dulverton Trust has committed to part-funding the project in 2019-2020, but there is still a funding shortfall. Further fundraising is needed for years three and four of the project.

6. Conclusions

- We have achieved and in some areas exceeded our targets for 2018/19
- One-to-one repeated visits are essential for implementing positive changes
- Building up a presence and reputation in the area takes time and needs a local scale focus
- Targeted small-scale work inspires local action and ownership, leaving a lasting legacy
- Using a flagship species to create resilient pollinator networks inspires people to get involved, and helps create a story to capture interest. This has opened many opportunities, such as permission to survey, implementing habitat changes, and getting people to volunteer and record bumblebees
- It takes time to understand the project area - learning where the key sites are, finding contacts and resources, and reaching an agreement on management

Next steps:

1. We are organising a bumblebee blitz at Braunton burrows in 2019 with professionals, volunteers and partner organisations taking part to gather more data on the last remaining site with decent numbers of Brown-banded carder bees. We hope to confirm the presence of Moss carder bees there which haven’t been seen since 2009.
2. We plan to survey areas around known populations of the target bumblebees, to fill in the gaps in our knowledge of their distribution.
3. We hope to implement habitat management changes on large areas of diverse grassland to make them more flower-rich; and have plans for re-seeding species-poor areas of habitat.
4. We plan to support our new volunteers with BeeWalk by mentoring and upskilling them. We hope to engage more volunteers with an “adopt-a-plant” scheme, where volunteers grow bumblebee forage which is then planted out in target sites.
5. We hope to work more closely with NE for referrals of farmers and landowners interested in applying for Mid Tier

7. Nature Recovery Networks

1) Landscape scale working: How have you taken a larger scale, integrated approach that could contribute to the development of a Nature Recovery Network? Our project area covers a 5 km wide strip all along the North Devon coast, and we are collaborating with 24 organisations and local groups. Integrating individuals and groups into the project facilitates work at a large scale and increases efficiency. We used this broad landscape scale to survey for bumblebees to determine their distribution; and to survey the habitat to determine its quality and quantity for pollinators, and identify areas for habitat restoration and creation. We used the distribution of the Brown-banded and Moss carder bees as a way to focus our advisory work and habitat creation work at a smaller scale. Landscape scale working is essential for pollinator
conservation given their need to move through the landscape for food, mating, and hibernation sites. Integration of different habitat types and land uses across the area such as farmland, holiday parks, churchyards, and road verges is vital for the recovery of Brown-banded and Moss carder bees, through joining up habitat to connect isolated populations.

A local scale is necessary for sustainable, long-lasting and integrated habitat work, requiring engagement with the local community and building up trust over time. A local scale is also necessary for joining up a network of pollinator habitat, which we will gradually expand out from.

How has the project contributed to broader ecosystem restoration?
Bumblebee habitat benefits a broad suite of pollinating insects by providing forage, nesting sites, and hibernation sites. Pollination is a key ecosystem service. Creating more habitat and joining it up increases resilience to pressures faced by many other pollinators such as inbreeding depression caused by habitat fragmentation.

What are the key lessons you have learnt?
It takes time to build up relationships with different organisations and individuals. Working at a broad landscape scale is useful for getting a broad perspective of the species, habitat and who else is in the area with common objectives but once target areas have been identified, work should focus on smaller target areas – a finer scale is necessary to create joined up habitat, and enables repeat follow-up visits as needed which are essential for implementing change. Working at a smaller scale means that we have been able to build up a presence in the area which helps enormously with networking to reach landowners, farmers and volunteers.

2) Evidence and planning
What objectives, criteria and planning methods did you use, and who did you involve in identifying the opportunities? Having worked over a very broad area, across Devon and the wider South West during Phase 1 of the West Country Buzz project (2016-2018), it was determined that narrowing the project area down would achieve more connectivity, and enable more targeted in-depth landowner support resulting in better habitat quality and longevity. BBCT’s Short-haired bumblebee project was used as a model. Here, bumblebees have recovered over large areas due to the approach of working closely with clusters of farmers and radiating out from these key areas to achieve landscape scale connectivity. A scoping exercise showed that the project was well-received by other organisations working in the area. The species data demonstrated an urgent need to focus on S41 bumblebees in North Devon.

The aims and objectives are to

1. **Survey and monitor** the abundance and distribution of bumblebees, with a focus on S41 species
2. **Advice and support** Raise awareness of what pollinators need to survive and thrive, with landowners, farmers and the public.
3. **Habitat management** Increase the area of suitable habitat and connectivity around existing populations of target species

What is the basic level of evidence necessary to support where you might target landscape scale delivery, taking into account its contribution to a local network of nature recovery? S41 bumblebee species distribution data was used to define the project area. Habitat information such as stewardship scheme options from NE open access data, and locations of designated land such as Nature Reserves was used in the planning stage to target survey work. Habitat quality was estimated from survey work on the ground, and plant records data to get a more accurate measure of habitat suitability and to inform how to join up habitats to allow bumblebee populations to recover.

What information, data and mapping was readily available and what was missing? Bumblebee species data was available from BBCT, DBRC and BWARS. The data spread was patchy and
incomplete due to a low recording effort. Habitat information was available through DBRC and NE. Data supplied through DBRC was available at a charge.

What were your key lessons learnt when you overlaid your environmental assets with opportunities you have identified? Ground-truthing was often necessary. Overlaying environmental data helped to decide how to broadly target our efforts, but opportunities for habitat changes often happened more organically, through local contacts and networking. Not all identified opportunities could be implemented immediately or at all – this was only apparent after meeting with landowners to ascertain other pressures or needs which may be barriers in the short- or long-term.

3) Delivery
How have you addressed actions needed to improve protected sites that are reliant on integrated landscape scale working and what have you learnt? Working closely with site managers to take into account the various pressures and restrictions to create a bespoke management plan; and communicating with different organisations and individuals involved. Communication and repeat follow-up support is crucial to effective collaboration. This takes time and staff resource.

How have you addressed what is needed to restore and recreate priority habitats and what have you learnt? A long-term project is necessary: the first year has involved identifying opportunities and laying the foundations for change, and building up relationships in the local area. Building up a presence and reputation in the area needs a local scale focus. It takes time to work with landowners and implement habitat change, especially if these management changes are quite different to what has gone on before, or is different from neighbours.

How have you approached what is needed to improve habitat and species connectivity and what have you learnt? A long-term approach is necessary (as reasoned above). Using existing habitat data and data collected in the field to measure habitat quality to overlay with species data on mapping software to determine barriers to population movement, and identify key areas for more habitat creation and restoration. Using a flagship species to create resilient pollinator networks inspires people to get involved, and helps create a story to capture interest. This has opened many opportunities, such as permission to survey, implementing habitat changes, and inspiring people to volunteer and record bumblebees. Targeted small-scale work inspires local action and ownership, leaving a lasting legacy. This is evidenced by members of the local community using their own initiative to promote pollinator habitat management e.g. with their Parish council. Providing bespoke ongoing advice to complement the business plan, and find what is achievable for each individual is key. Being able to provide ongoing support and solve management issues as they come up. Providing seeds and plants through the project to enable habitat creation, where appropriate. This small provision of resources has been instrumental in building trust, demonstrating the project’s commitment to the cause, and in offering an easy and accessible way for people to become actively involved in the project. This has opened up further opportunities for more habitat creation, networking, and in engaging volunteers, landowners and farmers.

How have you addressed species recovery and what have you learnt? Through creating suitable habitat by changes in management or introduction of favoured forage plants. Working at a local scale to effect change is essential.

How have you engaged with landowners and local communities to deliver outcomes for habitats and species? Providing bespoke advice to 30 landowners across the project area (target number was 25), and providing habitat management information to a further 97 through Farm Days and workshops. Working with facilitation fund groups to work with neighbouring
landowners to help facilitate habitat connectivity. Raising awareness locally of pollinator declines to the public through talks and events to over 1000 people helped to find opportunities with landowners and farmers, community groups and individuals wanting to get involved. A large team is necessary to implement change at a landscape scale. Building relationships with landowners from repeat visits, and regular events to build up a presence in the target area. It takes time to understand the project area - learning where the key sites are, finding contacts and resources, and reaching an agreement on management

How have you persuaded landowners and farmers to create and connect larger blocks of habitat across a farmed landscape? Using S41 bumblebees as a hook, and highlighting their dramatic decline in the local area. Surveying, and targeting landowners adjacent to where S41 species are found. Working with farmers in existing schemes to manage habitats for pollinators more effectively. Providing resources for landowners not in a scheme. Working with facilitation fund groups and neighbouring landowners to promote connectivity.

What are the key barriers you have noted to successful delivery of bigger, better and more joined-up in the right place? A long-term approach is needed. It takes time to find contacts and put new management plans in place. Securing funding for a multi-year project is challenging. Investment in survey work is crucial to informing a strategic approach. More funding is needed to deliver more habitat. There is a lack of stewardship options for grassland farms providing enough incentive and recognition of the importance of diverse grasslands in the South West. More is needed to encourage rotational grazing, in particular resources for set-up costs (drinkers, fencing etc). More flexibility is needed in existing options, particularly around timing of hay meadow cut to provision for late flowering habitat which is a major barrier for late-flying insects such as the target S41 bumblebees.

4) Success
What do you consider overall success might look like for your project and how might this be measured in a simple, meaningful and cost effective way? Presence of S41 bumblebees in new sites, and increased abundance of these and all other bumblebee species, in particular at sites which have seen changes in management to create and restore suitable habitat. Measured through survey work and monitoring.

How will you ensure that your outcomes will be delivered in the long-term and success won’t be undone? (This might tease out some answers on legislative underpinning/arrangements with landowners). Regular/ongoing contact and support for landowners to find a management plan that they are happy with and is achievable for them. Provide the necessary information and resources, and upskill them, to allow landowners to manage/maintain the habitat independently. Provide ongoing funding through appropriate stewardship options e.g. new options of rotational late cut meadows; bigger payments for grassland options where floral diversity is high or where key forage plants for S41 species are in abundance; additional funds to cover set-up costs of rotational grazing. Training local people to survey and monitor, and encourage local ownership.

5) Support
What are the top 5 mechanisms needed to support success and why?

1. One-to-one advisory support to build relationships and provide bespoke ongoing support as needed and to change attitudes
2. Funds to provide resources to landowners ineligible for AESs, or to improve land outside of AESs. This helps create a habitat network across the landscape
3. A long-term project – it takes time to build trust and find contacts, and implement change
4. Flexibility and a range of options to present to landowners and farmers
5. Support to landowners, farmers and volunteers through engagement events, talks and workshops to keep the momentum going and inspire local action independent of the project
## Appendix

West Country Buzz work plan showing achievements to date (April 2018 to September 2018)

<table>
<thead>
<tr>
<th>Objective</th>
<th>Outcome</th>
<th>Output</th>
<th>Actions required by partner or NE to deliver output &amp; staff responsible for delivery and reporting</th>
<th>Date of output completion</th>
</tr>
</thead>
</table>
| 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. Identify opportunities for habitat and species connectivity | 3 beginners and 1 intermediate bumblebee identification workshops  
2 field practice sessions  
1 bioblitz  
Targeted bumblebee surveys  
3 case study sites for ongoing monitoring  
6 new BeeWalk transects | Complete June 2018 (51 attendees) \  Complete July 2018 (9 attendees) \  Complete June 2018 (320 attendees) \  Complete Sept 2018 \  Ongoing March 2019 \  Ongoing March 2019 |
| 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. Engage with landowners and local communities to deliver outcomes for habitats and species | Greater uptake of positive measures and a joined-up, integrated approach  
Focused training events and practical 1-to-1 land management advice | Ongoing support and advice for 25 landowners and farmers in Year 1 including site visits  
2 Farm Days in collaboration with Facilitation Fund Groups  
Write articles for farmers and landowners in newsletters and post project updates on BBCT website/social media  
1 talk  
Communicate with and work in partnership with local NGOs and other parties in the project area | Ongoing 30 landowners received ongoing support and advice up to September 2018  
Complete August 2018 (30 attendees)  
Complete Articles for Exmoor National Park, Campaign for the Protection of Rural England, and South West Farmer. Website and Twitter regularly updated  
Complete Exceeded target  
Ongoing 24 collaborations include NE, National Trust, Braunton Facilitation Fund Group |
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<tr>
<th>Objective</th>
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<tr>
<td>3. Habitat management, increasing the area of suitable habitat and connectivity around existing populations of target species, using an integrated, landscape scale approach</td>
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<table>
<thead>
<tr>
<th>Outcome</th>
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<tbody>
<tr>
<td>High quality and targeted habitat management for pollinators and broader ecosystem restoration</td>
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<tr>
<th>Output</th>
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<tbody>
<tr>
<td>Landscape scale habitat creation and connectivity, and species recovery</td>
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<thead>
<tr>
<th>Actions required by partner or NE to deliver output &amp; staff responsible for delivery and reporting</th>
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<tbody>
<tr>
<td>Identify landowners in the project area</td>
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<tr>
<td>Map pollinator habitat and review ways to join up habitat and where to target efforts</td>
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<tr>
<td>Create habitat for bumblebees and wild pollinators through ongoing advice, promoting Countryside Stewardship, voluntary measures, and providing seed</td>
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<tr>
<th>Date of output completion</th>
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<tr>
<td>Ongoing March 2019</td>
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<table>
<thead>
<tr>
<th>Review project</th>
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<tr>
<th>Outcome</th>
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<tbody>
<tr>
<td>Review evidence for a targeted landscape scale delivery</td>
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<tr>
<th>Output</th>
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<tbody>
<tr>
<td>Project review</td>
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<thead>
<tr>
<th>Actions required by partner or NE to deliver output &amp; staff responsible for delivery and reporting</th>
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<tbody>
<tr>
<td>Ongoing planning to target landowner engagement and habitat work for joined-up, landscape scale connectivity, including review of approaches for Nature Recovery Network</td>
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<tr>
<td>Record number of landowners given 1-to-1 advice, 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)</td>
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<tr>
<td>Review project’s success through evaluation of survey and monitoring data, including presence of S41 species in new sites</td>
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<th>Date of output completion</th>
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<tr>
<td>Ongoing March 2019</td>
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<th>Report on progress made</th>
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<th>Outcome</th>
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<tr>
<td>Effective flow of communication</td>
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<th>Output</th>
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<td>Progress reports</td>
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<tr>
<th>Actions required by partner or NE to deliver output &amp; staff responsible for delivery and reporting</th>
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<tr>
<td>Short interim progress report</td>
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<td>End of project report</td>
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<th>Date of output completion</th>
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<tr>
<td>Complete Sept 2018</td>
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<td>Complete March 2019</td>
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