

# The short-haired bumblebee reintroduction

## Project progress report



**April 2012- March 2013**

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**Hymettus**



## Summary

The short-haired bumblebee, *Bombus subterraneus*, is one of 27 bumblebee species native to the UK. It is the only English bumblebee species to have recently gone extinct, and its decline was almost certainly the result of the loss of the species-rich grassland habitats on which it depends.

The short-haired bumblebee partnership was formed in 2009 between Natural England, the Bumblebee Conservation Trust, RSPB and Hymettus. The project aims are firstly to reintroduce the short-haired bumblebee back to the UK, and secondly to restore selected landscapes in the south of England (Dungeness/Romney Marsh area) using agri-environment schemes to recreate habitat for bumblebees by working with farmers, land-owners and conservation groups. The project also sets out to raise the profile of bumblebee conservation through public outreach.

Natural England agreed in 2011 to the release of short-haired bumblebees from southern Sweden to Dungeness and Romney Marsh area in Kent. In May 2012 short-haired bumblebee queens were collected in Sweden and release back to the UK.

This report summaries the work undertaken by the project for the period April 2012 to March 2013.

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## 2012 Swedish collection

The project officer and seven volunteers took part in the 2012 Swedish queen collection. The project officer drove to Harwich to catch the ferry to Denmark on the 29<sup>th</sup> April along with volunteers Robert Jones, Geoff Allen, Simon Springate and Nick Withers. Project volunteer Ian Gammans had earlier flown to Sweden on the 27<sup>th</sup> to view emergence and collect pollen if any *Bombus subterraneus* queens were seen.

On Saturday 28<sup>th</sup> reports were being made to the project officer of anger in Sweden related to the collection of queens. An article was published in the Swedish press criticising the expedition. It was reported that the Swedish population of *B. subterraneus* would be damaged by collecting queens (contrary to reports unknown to them of its good recovery presented by Swedish bumblebee specialists). Due to the negative press coverage it was recommended that the project team not start collecting bees until the a meeting was held with the County Administrative Board later in the week. This resolved the issue surrounding the collection of the bees and a joint press release was issued. The project is very grateful to Dr Bjorn Cederberg for his help in advising and discussing the issue with the relevant authorities.

Once the issue was resolved the team began to collect the queens. The project was joined by volunteers Miriam Knolls of Natural England and Martin Jenner. Four persons were assigned to each transect but some rotation did occur. Collection began on the 5<sup>th</sup> May and continued for five days. Queens were collected by walking along areas of suitable forage, which at the time of emergence is white dead nettle, *Lamium album*. A net is used to capture the queen, she is then checked for presence of pollen and continental markings. If a queen has begun to collect pollen she will be loyal to her nesting site and will not nest again so are not collected. No melanistic queens were collected as this form were not known to occur in the UK.

Once collected the queen was transferred into a queen honeybee marking tube, numbered and placed into the campervan fridge. The fridge was kept at 4-5 degrees to induce torpor, and is in darkness to reduce stress. The queens were fed nightly with an artificial nectar solution soaked onto a cotton bud and passed into the tube via a feeding hole. The queens are then left to feed for approximately 20-60 minutes (depending on their stress levels). After five days of field work a total of 89 queens were collected. The queens were then taken to a registered national veterinary to check all the queens in the presence of a honeybee inspector Johan Wallin for varroa mite, hive beetle and trophalaxies mite. A veterinary certificate was then signed by the vet and Mr Wallin and was sent to FERA and the UK national veterinary closest to port of entry.

The Swedish team then drove back to Denmark to board the ferry to return to Harwich and then drove the queens to Royal Holloway University of London to begin their quarantine.



**Photograph 1:** Feeding queens of *B. subterraneus*



**Photograph 2:** Volunteer Rob Jones collecting a queen

The Swedish team then drove back to Denmark to board the ferry to return to Harwich and then drove the queens to Royal Holloway University of London to begin their quarantine.

### **Pollen collection**

Prior to the Swedish visit the project officer and project volunteer Alan Kenworthy collected pollen from bumblebee species at RSPB Dungeness and within the surrounding 10 miles. The pollen was collected from bumblebees visiting white dead nettle, *Lamium album*, and comfrey, *Symphytum officinale*.



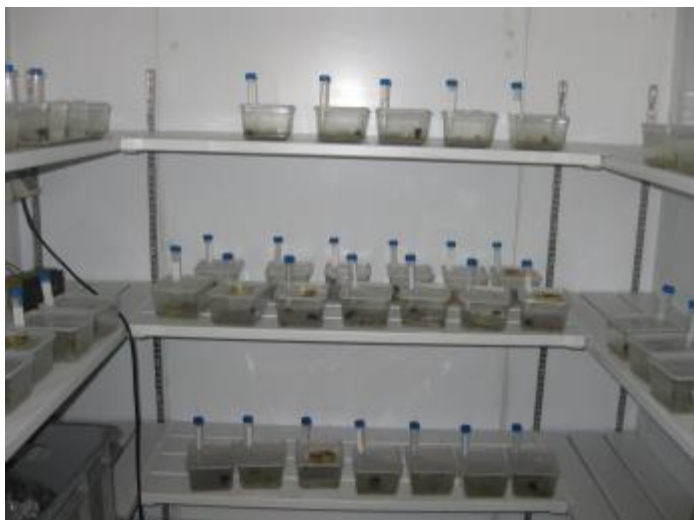
**Photograph 3:** White dead nettle pollen collection site, Romney Marsh visitor centre

On return from Sweden further pollen was collected from bumblebees visiting red clover, *Trefoilum pratense*, tufted vetch, *Vicia cracca*, meadow vetchling, *Lathyrus pratensis* and other species on which *B. subterraneus* is known to feed. Ideally 90 grams of pollen would have been collected but due to poor weather conditions only 15 grams is available for next year's queens. However, pollen collection will begin again in April in the UK and continue until last flowering in September.

In addition, two volunteers stayed behind for five days to collect pollen from the queens in Sweden. However, it was decided later that not enough pollen could be collected from this source to justify the time and cost. The collected queens will not be fed as much pollen in the 2013 quarantine, so future collection of pollen in Sweden will not be necessary.

### **Quarantine and release**

The queens were taken directly to Royal Holloway University of London (RHUL) once the ferry docked in Harwich. The queens spent two weeks in quarantine and were faecal screened to assess presence of parasites. Quarantine was supervised and undertaken by Dr Mark Brown. Restrictions for quarantine were set by the Disease Risk Management Plan. The purpose of quarantine is to avoid the release of non-native (Swedish) strains of bumblebee parasites into native (UK) bumblebee populations.



**Photograph 4:** *B. subterraneus* queens in quarantine

The queens were stored in individual plastic containers and fed daily with an artificial nectar solution and pollen collected by the project (from bumblebees foraging in Dungeness) or commercial honeybee pollen. The queens were given a clinical examination when they first arrived on the 11<sup>th</sup> May. They were then faecal screened on the 14<sup>th</sup> and 25<sup>th</sup> and had a final screening on the 27<sup>th</sup>. Faecal samples were viewed under a x 40 microscope lens to examine the presence for the following parasites: *Apicystis bombi*, *Crithidia bombi*, *Nosema bombi*, *Sphaerularia bombi*. Keeping them in quarantine also enabled screening for the parasitoid wasp *Syntretus spp.*

**Table 1. Outcome of *B. subterraneus* queens parasite screening**

<b>Number of queens delivered to RHUL</b>	<b>89</b>
<i>Crithidia bombi</i>	10
<i>Nosema bombi</i>	1
<i>Syntretus spp.</i>	14
Death from unknown causes	12
Accidental death	1
<b>Available for release as of 25<sup>th</sup> May 2012</b>	<b>51</b>

Table taken from Dr Mark Brown's report of Quarantine Screening of *Bombus subterraneus* 2012.

The queens were collected from quarantine on the 27<sup>th</sup> May and stored in the campervan fridge overnight until the release on the 28<sup>th</sup> May. The queens were driven down to RSPB Dungeness reserve and some were released in the morning with live television and radio interviews. Others were given to four team leaders who with a group of invited guests released the queens at different locations across the reserve. Invited guests included



farmers, project volunteers, project supporters and charities. Fifty one queens were released.



**Photograph 5:** Project officer and volunteers at Dungeness reserve



**Photograph 6:** Short-haired bumblebee queen to be released



**Photograph 7:** Released *B. subterraneus* queen



## Farmers and land owners

### Bumblebee farm day event

A bumblebee farm day event was held at Brian Neal's Shirley Moor farm on the 5<sup>th</sup> July. The event was well attended by 16 farmers, Natural England, RSPB, BBCT, FWAG advisors and Kent Wildlife Trust. Farmers were invited from around the Woodchurch and North Romney Marsh area. All attendees are asked for their name and contact details so that the project officer can arrange visits through the summer.



**Photograph 8:** Bumblebee farm day event, Shirley Moor Farm

Next year's bumblebee farm day event has been arranged with Andrew Cragg of Brooker Farm located in Saint Mary's in the Marsh, East Romney Marsh. Andrew owns a mixed farm and is currently in the ELS scheme. The event is planned for June 2013.

### Farm visits

Visits were made to all farmers attending the bumblebee farm day event. Farms which were new to the project had their bumblebee friendly habitat recorded. This is achieved by taking along a farm site map and marking all areas of bumblebee flower rich habitat. The areas are calculated in size and given a rating of flower richness. All flower species are recorded and together with any bumblebees seen.

Visits were also made to farmers who were previously visited in the years from 2009-2011 to give any advice if needed, to resurvey habitat, bumblebees and discuss progress.

The project officer is currently in talks with partners BBCT to put all habitat maps onto a GIS system. Bumblebee distribution maps will also be plotted.

The project officer has been invited to give a presentation on March 26<sup>th</sup> to W. A Farm supplies at their AGM in Lenham, this will be attended by farmers local to the release zone.

## Monitoring transects

Fifteen transects were walked by the project officer with the help of 20 volunteers during the months of April-September. The transects are within the release area of Dungeness and Romney Marsh and are walked fortnightly or monthly.



**Photograph 9:** Volunteer Adam King on a Dungeness transect

Specific trips were made by the project officer to RSPB Dungeness reserve to find *Bombus subterraneus*. The queens were only recorded for a period of 4 days after the release whilst the weather was calm and sunny; after this time no *B. subterraneus* sightings have been confirmed.

A bumblebee blitz survey day was also undertaken by the project officer at RSPB Dungeness together with 5 volunteers. Three pairs were each allocated a site map with a location to search and record all bumblebee species. No *B. subterraneus* were recorded but *B. humilis* and *B. muscorum* were present.

Despite the poor weather conditions experienced in 2012 records of priority BAP species *B. ruderatus*, *B. humilis*, *B. muscorum*, *B. ruderarius* and *B. sylvarum* were all recorded across Romney Marsh and Dungeness.

All transect data is passed to volunteer and county aculeate recorder Geoff Allen. This information is then passed to all project partners, Kent Biological Records Centre, BWARS, and individuals whose land transects are walked on. The results of the 2012 transects can be seen in Appendix 1 (separate attachment).

The project officer, Geoff Allen and Dr Paul Williams from The Natural History Museum will be completing a list of rare bumblebee movements within this area over the last 30-40 years. This will be composed of data from Dr Williams PhD and local survey data.

## **Meetings with partners and collaborators**

Regular meetings have occurred throughout the year with all project partners.

### **Bumblebee Conservation Trust (BBCT)**

The project officer has met frequently with Sam Page from BBCT to discuss work crossover and collaboration in the future. Most recently we have arranged with Kent Wildlife Trust to begin a bumblebee garden award, which BBCT will fund. We are also arranging a number of joint events. Meetings also took place with Gill Perkins of BBCT project involvement and a talk was given to BBCT staff at Stirling University.

### **RSPB**

Regular visits were made to RSPB Dungeness reserve to discuss management and maintenance of the Dungeness fields and advice was given when asked on the management plan for Lydden reserve, East Kent by Martin Randall site manager. Events were jointly arranged with the visitor centre manager Chris Hawkings for the spring and summer and the one week bumblebee date with nature. An events list is now arranged for Spring and Summer 2013. Together with RSPB community fundraiser Nichola Willet the project is organising a sponsored walk at Dungeness on the 30<sup>th</sup> June 2013. All money raised will be split between the project and RSPB. A bumblebee identification day was also given to RSPB staff and volunteers to aid with the bumblebee date with nature week.

### **Natural England**

Visits and meetings with Natural England advisors occurred frequently throughout the spring and summer months. Joint visits to farmers and land owners occurred to discuss agri-environment schemes and pollen and nectar mixes. Meetings were held with Gavin Measures of Natural England, Dr Mark Brown and ZSL representative Tony Sainsbury on updating the Disease Risk Management Plan for the 2013' release.

### **Hymettus**

Regular conversations are held between the project officer and Paul Lee of Hymettus. Monthly reports are written to Hymettus of work undertaken by the project officer. All donations given to the project are passed to Hymettus who deal with the project finances.

### **Other stakeholders**

Meetings and collaborations have also taken place with NPower (Little Cheyne Court wind farm), National Trust (Bodiam Castle), Network Rail (High Speed 1 embankments) and Agrifactors Dawn Brickwood (purchasing of seeds and being offered discounts) (refer to fundraising, donations and working with other organisations section for more information). The project has also run bumblebee identification day courses for Kent Wildlife Trust and

Wildwood. The project regularly attends Kent Wildlife Trust events and maintains a good working relationship.



**Photograph 10:** Kent Wildlife Trust bumblebee ID day

The project officer has also spoken to Professor Ratnieks from Sussex University about potential bumblebee identification courses and studentships. Jeremy Field is also based at Sussex so there could be potential in the future for University collaborations with students. Prof Dave Goulson an advisor to the project is also due to take a professorship at Sussex University.

Kent County Council wildlife department came to RSPB Dungeness for their team building day. The project officer and site manager Martin Randall gave talks, had a picnic and a bumblebee identification walk. This created links with the council and it is hoped for more collaboration in the future.

Martin Jenner co-author of 'Bumblebees of Britain and Ireland' joined the team in Sweden to help collect bees. He has given advice to the project officer on marketing and is currently constructing the projects website (refer to website and logo design section for more information).

The project officer also attends Romney Marsh Living Landscape meetings, is on their mailing list and advertises events through them. The project officer is also on the committee of Kent Field Club and attends meetings where possible.

## **Fundraising, donations and working with other organisations**

Different organisations and charities have either been directly approached by the project officer or since the release have approached the project.

### **Network Rail**

The project officer was approached by Network Rail and has worked closely with them to give advice on the High Speed 1 rail link. As part of the mitigation the embankments were resown with wild flower seed. This has been successful but some grasses are now starting to dominate the sward and yellow rattle seed has been purchased by Network Rail as suggested by the project officer. The sowing is delayed until next year due to excessive wet weather conditions. Network Rail have also donated £1,000 to the project website construction. The project officer is also planning three joint events next year with Network Rail including a training day for staff, a school visit and a green hay cut day.

### **National Trust**

The National Trust also approached the project officer to give advice on some of their properties, such as Bodiam Castle, and to give advice to some of their tenant farmers and on their other private land. The project officer focused on Bodiam Castle and seed has been purchased by the National Trust and half the cost has been donated by the project for resowing in 2013 which is due to take place in April/May 2013.

### **Waitrose**

The project entered and was accepted by Waitrose into their community matters monthly scheme. Shoppers place a token into one of three charities they wish to support. One thousand pounds is then divided between the three charities depending on the amount of tokens received. This was run in the Hythe store in August and £340 was raised for the purchase of wild flower seeds. The project has purchased £270 of local province yellow rattle seed which will be spread in 2013 at Little Cheyne Court wind farm, Old Romney small holding and Bodiam Castle.

### **ASDA Community Matters Scheme**

The project officer has also applied to ASDA community matters scheme for the purchase of wild flower seeds.

### **The Royal Entomological Society**

An outreach grant was also secured from The Royal Entomological Society for purchase of field equipment for public bumblebee walk and talk days and identification days. An amount of £482.70 was received for this end.

## Donations

A 4kg bag of wild flower seed has been donated by farmer Colin Spragg which he harvests himself from his farm (originally purchased from Emorsgate). He uses part of this harvest to spread across his farm (advice given by his Natural England advisory Dan Tuson). Part of the seed donated will be spread at Bodiam Castle and Little Cheyne Court wind farm.

Peggy and Frank Wood from Ashford Beekeepers also donated a large amount of comfrey roots, which they grow commercially. These were planted at an Old Romney small holding and Little Cheyne Court Wind Farm by the project officer and volunteer Nick Withers. Some were also given to the National Trust at Bodiam Castle.

The project officer approached Little Cheyne Court to resow wild flower seed under some of the wind turbines. A visit took place and NPower agreed to spray around and under some of the turbines where grasses were encroaching on the cultivated mix. This was delayed by the continuous rain but spraying is due end of March and resowing complete by end of April 2013. The project will also use the donated seed, purchased yellow rattle seed. Comfrey and white dead nettle plants were planted out last Autumn with more to be planted in later in 2013.



**Photograph 11:** Volunteer Nick Withers planting comfrey at Little Cheyne Court wind farm

The project was also donated £450 from sales of the book *Wildflowers of Dungeness* written by Barbara Gray and Heather Silk. The authors also kindly asked the project to write a summary for the back page.

## Fund raising

A quiz was held by the project on the 25<sup>th</sup> November to raise funds. Seventy persons attended and the project raised £532.18 to go towards the construction of the project website. A sponsored walk will take place at RSPB Dungeness reserve on the 30<sup>th</sup> June 2013 to raise money for RSPB and the project.





**Photograph 12:** 2012 bumblebee quiz afternoon

## **Project website and logo development**

The project officer has worked closely with Martin Jenner's company 'Formula' to design and create a project website. This has been an on-going process from November with various meetings to inaugurate the website. The aims of the website are to convey all the scientific and conservation work the project undertakes and to put this in a format which is readily accessible. Funding has been secured from Network Rail and IBRA for £1,000 each towards the website construction. Project donations raised from events have also been used. The website is planned to be completed by the middle April 2013. This will be launched in time for the 2013 Swedish expedition.

A project logo has now been designed by graphic designer Simon Daverin of Tayburn. This will now be used on letters, talks, banners and potentially in the future with merchandise.

## **Outreach**

Many outreach events took place during April-March, for a full list please refer to Appendix 2. A summary of events are listed below:

- Bumblebee identification courses (10)
- Participation at the South of England and Kent County Show amongst others (9)
- Bumblebee walks and talks (8)
- Talk to specific groups e.g. Women's Institute, honey beekeepers (17)
- Bumblebee date with nature ran by RSPB Dungeness with project volunteers (two weeks)
- Nature Live talk at Natural History Museum
- School visit to Woodford, London



**Photograph 13:** Spring Convention stall with volunteers Ian and Linda Gammans and Nick Withers

## Media

Following the first release this year the project received high media coverage. For a full coverage list refer to Appendix 3. As a summary the project was covered by the BBC, both local and national, and ITV. There were radio broadcasts on BBC 2 and BBC hourly news and local and international radio stations. Articles were included in national and international newspapers such as The Guardian, Huffington Post and Evening Standard.

The press release was written by RSPB and Natural England press departments with advice from the project officer and steering group.

## Plans for following 6 months

### 2013 Swedish expedition

The Swedish expedition is continuously being planned and developed for the 2013 trip. Ten volunteers will be attending along with the project officer. The release will be planned for May/June time depending on Sweden emergence.

The project officer is currently arranging collection details with Skane Environment Department in Sweden. Permission for the collection of queens from individual Nature Reserves will need to be granted, which the project officer is currently obtaining.

The project officer will also be meeting with press representatives from Natural England and RSPB on press releases for 2013.

On March 27<sup>th</sup> the project officer with six of the ten Swedish expedition volunteers will be travelling to the Natural History Museum to view *B. subterraneus* specimens and other relevant bumblebee species.

### **Monitoring transects**

Transects will begin in April and continue until September. In addition specific surveys will be undertaken by the project officer and volunteers for emerging *B. subterraneus* queens, such as focusing on white dead nettle patches across the release area (known to be an important first forage for *B. subterraneus*). Two bumblebee blitz days will also be undertaken across Dungeness with volunteers and the project officer in July and August to look specifically for *B. subterraneus* workers and later sexuals.

### **Outreach**

Outreach events will be undertaken across various sites in Kent and East Sussex to continue to raise awareness of the project.

### **Other organisations**

The project officer will be arranging meetings with other organisations such as the Environment Agency, Highways Agency and Internal Drainage Board to discuss areas of cross over and future collaborations in terms of cuttings regimes and supply of wild flower seed.

## **Appendix 2 - Outreach events**

(number of attendees in brackets)

Hambrook Marshes talk 29<sup>th</sup> May (24 attendees)  
South of England show 7-9<sup>th</sup> June  
Whitstable Women's Institute 11<sup>th</sup> June (28)  
Dungeness flower show (seed packs sold continually through Summer)  
Private ID event RSPB Dungeness 16<sup>th</sup> June (11)  
High Weald bumblebee ID event 20<sup>th</sup> June (25)  
Great Dixter Gardens insect week talk 30<sup>th</sup> June (35)  
Folkestone Green fair 2<sup>nd</sup> July  
Tunbridge Wells walk and talk 7<sup>th</sup> July (20)  
Maidstone Mote Park 7<sup>th</sup> July (21)  
Godmersham Women's Institute 9<sup>th</sup> July (16)  
Kent County Show 13-15<sup>th</sup> July  
Kent Wildlife ID event 21<sup>st</sup> July (20)  
Kent Wildlife Trust ID event 27<sup>th</sup> July (20)  
RSPB Dungeness bumblebee date with nature 28<sup>th</sup>-11<sup>th</sup> August  
RSPB Dungeness walk and talk 28<sup>th</sup> July (20)  
Kent Wildlife Trust Sevenoaks Festival 18-19<sup>th</sup> August  
Sandwich Bay 26<sup>th</sup> August  
Wildwood bumblebee ID event 26<sup>th</sup> August (25)  
Sittingbourne Womens Institute 6<sup>th</sup> September (25)  
Dartford honeybeekeepers talk 8<sup>th</sup> September (20)  
Ashford beekeepers talk 5<sup>th</sup> October (22)  
Bissingden Ladies Club 11<sup>th</sup> October (15)  
The National Honey Show 25-27<sup>th</sup> October  
Friends of the Earth 20<sup>th</sup> November (46)  
Wokingham beekeepers 12<sup>th</sup> December  
Thames Water bumblebee identification talk 14<sup>th</sup> December (13)  
Hastings and Rother honeybee keepers 12<sup>th</sup> January 2013 (35)  
Nature Live Natural History Museum 15<sup>th</sup> January (31)  
West Surrey Natural History Society 24<sup>th</sup> January (35)  
Dover and District beekeepers 23<sup>rd</sup> February (25)

Gravesend beekeepers 24<sup>th</sup> February (21)  
Lynsted Community Orchards 28<sup>th</sup> February (40)  
Eastbourne honeybee keepers 19<sup>th</sup> February  
Bumblebee ID course Dungeness 24<sup>th</sup> March  
W. A. Farm suppliers Lenham AGM 26<sup>th</sup> March

## **Appendix 3 - Media**

### **Television**

BBC 2 Sarah Raven's Bees, butterflies and blooms  
BBC 1 CountryFile  
BBC 1 Breakfast  
BBC 1 news 1pm and 6pm  
BBC South-East 1pm, 6pm and 10pm  
ITV Meridian News 1pm, 6pm, 10pm  
Swedish news broadcasts

### **Radio**

BBC Radio 4 Today Programme  
BBC Five Live  
BBC stations news broadcast hourly  
BBC Radio 2 Drivetime  
BBC Radio Kent  
BBC Radio 4 Saving Species  
Gulf Radio  
BBC World North America  
BBC World Service  
Various Swedish stations

### **Newspapers**

Guardian (2 full articles)  
Independent  
Huffington Post  
Metro  
Evening Standard

The short-haired bumblebee reintroduction project report April 2012-March 2013

Various Local Kent and Sussex newspapers

Various online green webpages

Telegraph online

### **Articles**

British Beekeepers Association (BBKA) news article

Waitrose weekly

RSPB's Bird Magazine

### **Twitter, Facebook and Blog**

Updates are posted at least weekly during the summer and fortnightly during the winter months.

For the project blog please visit <http://subt.bumblebeeconservation.org/>

Follow us on Twitter: shbumblebeeproject@nikkigammans

Follow us on Facebook: The short-haired bumblebee reintroduction project

### **Books**

Wildflowers of Dungeness- project summary on back page.

Plants for Bees- small mention of project under red clover description.