Bumblebee Conservation Trust

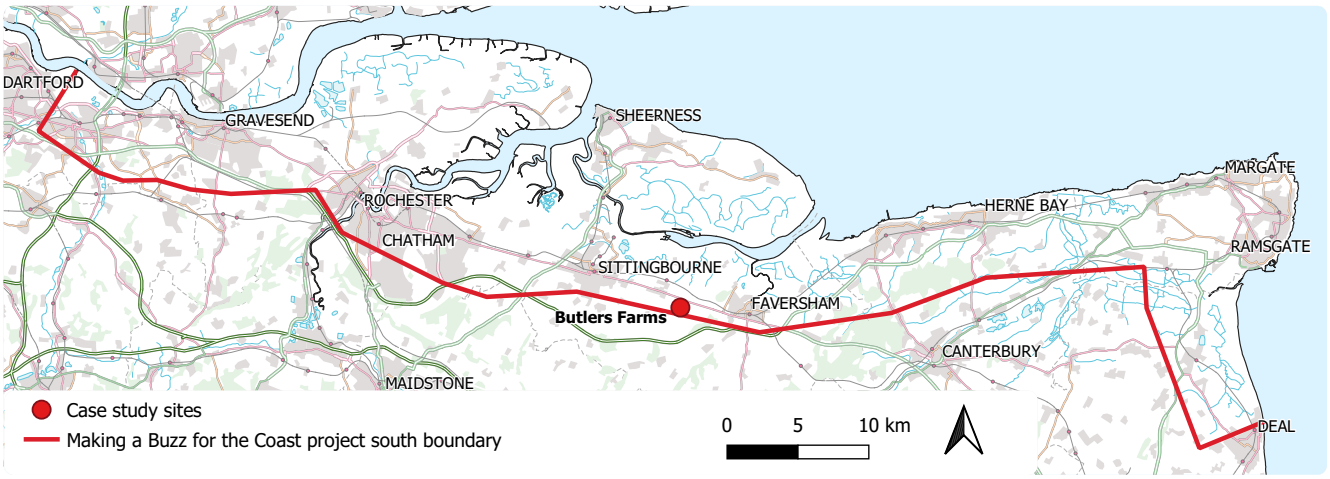
Case Study

Butler Farms

Introducing management options for bumblebees and pollinators to commercial fruit farms

Making a Buzz for the Coast

The north Kent coast is recognised nationally for the diversity of bumblebee species its supports with 22 of the 24 UK species, including five of the seven nationally rare and scarce bumblebees. Much of Kent's cultural and economic heritage is intrinsically linked to bees, with a landscape of orchards, arable flowering crops and grassland. Kent's bumblebee diversity can be linked to its varied habitats and the milder southern climate.



The Making a Buzz for the Coast project was set up to re-address the decline and help to conserve wild bees in north Kent. Making a Buzz for the Coast is working to safeguard Kent's wild bees, focusing on coastal areas from Dartford to Deal. The aims of this ambitious project, are 1) to create and restore flower-rich habitat 2) recruit, train and support volunteers to take action for bumblebees and other wild bees 3) raise awareness about the value of these important insects and their conservation needs.

Making a Buzz for the Coast is a multi-partner project led by Bumblebee Conservation Trust (BBCT) and with key partners including Kent Wildlife Trust, Kent County Council, Natural England, Royal Society for the Protection of Birds, Swale Borough Council, Thames Water and Thanet District Council, as well as numerous landowners and supporters. Its primary funder is the National Lottery Heritage Fund.

Katie Fidczuk-Sterry/Bumblebee Conservation Trust

Long grass left between apple trees.

Site introduction

Butler Farms is a commercial fruit business managed by David Butler; located between Sittingbourne and Faversham on the North Kent coast, it is made up of multiple sites covering 65ha. The farm is comprised of orchards (apple/pear/cherry), areas for soft fruit, grassland, hedgerows, offices and associated buildings. David Butler also works as the fruit manager for Blackbird Farming and has been improving land for pollinators in partnership with Making a Buzz for the Coast on their land also.

First visited by BBCT in May 2019, Making a Buzz staff have had a close relationship with Butler Farms and have continued to support and provide bespoke advice working alongside David Butler ever since.

During the initial site visit in 2019, it was recognised that the farms already had excellent bumblebee forage with species such as Red and White dead-nettle, Teasel, Common vetch, Ground ivy,Thistle species, and Bramble present. The sites have the potential to increase the floristic diversity and provide a greater range of forage

plants from early in the spring all the way through to autumn; creating pockets of quality tussocky grass nesting habitat would also be of major benefit to bumblebees.

The farms are actively moving toward biological pest control and natural ways to support and enrich the biodiversity, soil and land.

Nuffield scholarship

David Butler has been involved in the Nuffield Scholarship scheme since 2019 with his chosen focus on 'Biodiversity for the future of fruit farming'. David has used his enthusiasm to improve the biodiversity of his own fruit farms to make major changes to increase habitat for pollinators. He also plans to carry on with pollinator engagement as he uses his farms for education tours. As well as a chance to talk about fruit varieties and orchard management, he is keen to pass on best practice habitat management for bumblebees and other pollinators and spread the world on the amazing wildlife of Kent.

Butler Farms and rare bees

During a site visit and survey in August 2020, the presence of the Ruderal bumblebee (*Bombus ruderatus*) was confirmed on one of the orchard sites; feeding on a spectacular lavender hedge planted alongside an apple orchard.

The numerous orchard sites are located in a hotspot area for rare bees. It will be interesting to see if any other rare and scarce bumblebees are recorded in subsequent years, now bumblebee specific management and enhancement has been implemented and focus has been put on the monitoring.

Commercial orchard habitat management for bumblebees and other pollinators

Butler Farms are a conservation-focused farming business and are incorporating various management throughout the orchard sites that are of benefit to bumblebees and other pollinators.

Rows of fruit trees in the orchards are planted with alternative rows of Cobnut trees. Cobnut, grown traditional in Kent for Hazlenuts, are planted instead of thorny hedgerow species such as Blackthorn and Hawthorn. When planted near apple, pear and cherry tree, these commonly-occurring thorn hedgerow plants can increase the risk of disease transmission that can specifically affect the commercial fruit crop; Cobnut rows are a great alternative within the orchard and provide great habitat for natural predator species of the pear sucker pest; such as useful predatory bugs, earwigs and beetles who tend to inhabit willow and nut tree species as well as long grass habitat. Early flowering thorny hedgerow species are incredible sources of food for early emerging bumblebees so finding areas on site that they can be planted but not affect the crop would be of great benefit to the wider landscape.

Grass is left long under the pear trees in the orchard throughout the summer season until harvest in the autumn, to increase the benefit of natural pest control. Long grass, similarly to cobnut trees promotes natural pest control species of the pear sucker; this directly helps the pear tree growth as well as providing great summer nesting habitat for bumblebee species. This is a great additional benefit of traditional pear orchard management, as well as moving to natural biocontrol methods instead of pesticide spraying. Under the apple and cherry trees, the grass removed all year round as there isn't a direct link between a specific pest such as pear sucker; although leaving the grass long under these crops will do no harm and enhance biodiversity.

Grass is also left long and uncut between rows of fruit trees throughout the orchards. These are left uncut from April till just before harvest in August; providing added long grass habitat that promotes biodiversity with a focus on fruit tree pest predators. This also allows the natural seed bank to flower and since Butler Farms have been leaving this uncut many beautiful species have appeared; such as carpets of Self-heal and Common century; adding extra forage for pollinators throughout the farm complex.

Ruderal bumblebee male on lavender hedge by apple orchard.

Previous management of other areas

Prior to the first site visit in 2019 the main management for grassland areas across the site outside of the orchard tree rows (such as margin and corner habitat) were regularly cut throughout the season and arisings left in place across the site.

Bumblebee habitat improvement and creation throughout the project

Seeding field margins and corners

Field margins, corners and strips between fruit rows can be seeded to increase floristic diversity. Increasing the food available along margins creates connections between habitat, linking up nesting areas and increasing pollinator coverage across the site with particular focus within the fruit growing areas. In spring 2020, Butler Farms seeded field margins and corner plots across four of the orchard sites which will help to provide forage and connectivity to approximatively 23ha of the farm site.

The areas were scarified with a site-owned power harrow set to a light scarification setting prior to seed sowing; ideally a lighter method would be recommended (such as a tyne harrow) so as not to overly disrupt the soil but working with the pre-existing farm equipment was easier and more accessible for the farm and did not create a drastically different end result.

After scarification, a UK native meadow mixture was added; a showy cornfield annual mix was also combined with the meadow mixture to create a beautiful display in year one after sowing. Butler Farms wanted these areas to be spectacular from the start and they will be part of the education tours David Butler has planned. As Butler Farms were sowing in to existing grassland, a mixture of solely wildflower seeds was chosen. A traditional native meadow mixture takes a few years to become fully established as it contains mainly perennial species so a cornfield annual mix is a good way to create an eye-catching display in the first summer after sowing. There will be natural grassland seeding as a comparison planned for 2021; this will provide a good example of native UK wildflowers and create a more natural and traditional farmed landscape.

Kate Fidczuk-Sterry/Bumblebee Conservation Trust

Flowering buffer strip summer 2020.

Margin and corner grassland management

Grassland margins and corners provide great opportunities not only for extra forage plants through seeding but also for naturally generated grassland flowers as well as much-needed tussocky nesting habitat. Changes to management have been implemented and edge grassland areas are now being kept long throughout the bumblebee flight season (April–October) and cut on a rotational routine (alternate margins mowed on a yearly basis) in the autumn with arisings removed where possible. This management works well for the newly seeded margins as well as the unseeded margins; removing arisings will decrease the ground fertility and increase the floristic diversity without the need for seed addition although the benefit of this change will be a longer-term enhancement.

Kate Fidczuk-Sterry/Bumblebee Conservation Trust

Uncut rows full of Self-heal between old pear trees. orchard

Moveable bumblebee planters

David Butler has created a number of bumblebee specific planters from recycled used fruit bins that can be moved easily around the farm using a forklift. These add extra flowering plants to areas that lack pollinator forage at different times in the year or to provide resources in areas that are soon to change use and where wildflower seeding is not applicable at the moment. The tubs were planted with a mix of flowers with long corollas, aimed at attracting longer tongued pollinators such as bumblebees. Planted flowers include members of the Deadnettle family including Mints and a range of Salvias, as well as Rosemary.

Kate Fidczuk-Sterry/Bumblebee Conservation Trust

Moveable bumblebee planters.

Future enhancement for bumblebees and other pollinators

Grubbing out (removing old orchard trees) areas on site provides a great opportunity to add large scale floristic improvements before new orchard trees are added. Seeding is planned for spring 2021 with grubbed out areas and newly purchased orchard plots being scarified and seeded before new orchard fruit trees are planted. This allows the creation of large areas of wildflower grassland instead of just adding floral margins around traditional orchards and will provide a greater nectar and pollen source.

Wildflower seed mixes planned for 2021 will be long-season native and more traditional meadow species, without the addition of cornfield annuals. These will demonstrate to visitors a natural wildflower meadow and how important they are to our native pollinators.

Rotation cutting regimes (alternate margins mowed on a yearly basis) will be carried out with cuttings removed where possible.

Solitary bees, as well as bumblebees are vital pollinators of commercial fruit trees and providing nesting habitat for solitary bees will encourage more of these important pollinators. Butler Farms plans to add in linear solitary bee banks for ground nesting bees across a few of the orchard sites as well as adding in aerial nesting habitat such as bamboo bee hotels.

Butler Farms have shown amazing dedication to local wildlife, achieving so much in terms of pollinator specific management over the last few years. It will be very exciting to see the impact that their continuing hard work and clear dedication will bring to local pollinators populations and how the habitats develop over time, as well as the benefit to the commercial fruit crop. To follow their progress take a look on their website: **www.ecofruittrees.co.uk**

For further information and general management advice for bumblebees and pollinators, view the Bumblebee Conservation Trust Land Management Factsheet: 'Managing Commercial Fruit Orchards for Bumblebees', on the Bumblebee Conservation Trust website, **www.bumblebeeconservation.org**

Photo-credit: Annabella Tipper

Common carder bee on Cornflower.

Butler Farms (Kent) Ltd

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