

*This article is reproduced by kind permission of Keith Duff, retired Chief Scientist with English Nature and now Environment Consultant. It was first published in the Golf Club Secretary newsletter ([keithduff21@hotmail.co.uk](mailto:keithduff21@hotmail.co.uk)).*

## **Bee good...**

Have you noticed that as we get older we tend to take more things for granted? That things that were once commonplace are now harder to find? Sadly, the humble bumblebee is one of these things, and it is becoming a significant issue both economically and environmentally. The good news is that there's something the golf industry can do about it, and it could actually save you money.

### **What's the problem?**

Bees play a critical role in the countryside as one of the widest ranging and most abundant pollinators of plants. Whilst this has contributed greatly to the colour and diversity of the landscape in the past, perhaps the most important benefit to us all has been their key role as a pollinator of agricultural crops, from cereals to fruit and vegetables. Insect pollination is estimated to contribute over £400 million per annum to the UK economy, and €14.2 billion annually to the EU economy. But over the last 80 years bumblebee populations have crashed, with 2 species becoming extinct in the UK, and many other species having declined dramatically. Whilst there are 28 species of bumblebee in the UK, only 8 are found commonly, so we are dependent on just a few species to prop up the natural functioning of many ecosystems and a good deal of the agricultural industry.

The reasons for this decline generate considerable argument amongst scientists and environmentalists, but there are strong indications that chemicals used in agriculture to protect seeds from pests get absorbed into the plant itself, making all parts of it, including pollen and nectar, poisonous to insects. The compounds used to protect seeds of oil-seed rape have been claimed to be especially significant in this respect. Given the extent of this crop in our modern countryside, the potential impact on bees can readily be appreciated.

Bumblebees depend more or less entirely on flowers for their food, using nectar as a source of energy, whilst pollen provides the proteins and nutrients required for growth and development. Therefore the best habitats for bees are those that offer plenty of flowers to feed from during the entire active phase of their lifecycle, from Spring to late Summer.

### **How could golf clubs help?**

I've spent a good deal of time over the past 20 years trying to change the sometimes blinkered perceptions of environmentalists and conservationists about golf courses. In my experience as a golfer and a senior officer in a UK government wildlife protection agency (English Nature), I have seen numerous examples of golf courses which retain high quality habitat within the roughs, and manage this in ways that mirror what is done on nature reserves. After all, it's the roughs that provide the setting and context for the playing areas of a course, and which give it a unique character of its own. Think of the heathland courses of Surrey and Hampshire, or our coastal links; what makes them special is the nature and extent of the roughs that frame the holes. In reality there is a lot of common ground between what golfers want and what environmentalists want.

There are now national schemes, run by environmental organisations and by elements within the golf industry, which are aimed at encouraging the recovery of bee populations through creating new wildflower meadows, or restoring areas of pre-existing grassland which have become ecologically compromised. These offer golf clubs a good opportunity to take action which will benefit both the setting of the golf course and the environment, whilst also potentially making savings in existing management costs. Engagement with such programmes can also provide local benefits in terms of community engagement and improved local reputation. Indeed, there is an increasing number of golf clubs who are involved in practical projects aimed at increasing bumblebee numbers on their land, including North Foreland, Elsham, St Andrews, Temple, Ely City, Bowood, Carnoustie, John O'Gaunt, Dundonald Links, Hankley Common, The Grove, Pyecombe, Luffness, South Essex, Bonnyton and Royal Tarlair.

### **What this means in practice**

Many golf courses contain extensive areas of grassland that are mown frequently, with all the inherent costs this entails for labour, fuel and machine maintenance. By converting some of this area to wildflower-rich meadows you can create habitat that will attract and support large populations of bees and other insects, and reduce your direct costs, since management is much less intensive. Such meadows are the most important habitat for bumblebees as they provide nectar and pollen-rich plant species throughout the summer, and appropriate management over time will increase the diversity and abundance of flowers which will attract foraging bees.

Management of wildflower meadows requires cutting in late summer, making sure that clippings are collected and removed, and some form of scarification or harrowing in autumn or spring to break up the surface and allow space for germinating seedlings. In an ideal world, some grazing by sheep would be better than harrowing, but this is not practicable for most golf courses (with some notable exceptions such as Brora and Aberdovey). The use of chemical fertilisers should be avoided.

Each site will be unique, and it is important that the type of wildflower seed mix used is appropriate to the nature of the soils which occur. A lime-rich soil will support different assemblages of wildflowers to an acid soil, and if you plant the wrong mix it will probably turn out to be a waste of time and money. There are two main sources of practical advice available to golf clubs thinking of taking action to encourage bumblebee recovery.

**The Bumblebee Conservation Trust** ([www.bumblebeeconservation.org](http://www.bumblebeeconservation.org)) provides free advice to anyone thinking of taking positive action for bees, including site specific advice. You will find a series of downloadable information sheets on their website, such as managing your land for bumblebees, managing wildflower meadows for bumblebees, and sourcing wildflower seed for bumblebees. If you are interested in taking action for bees, the BCT website will provide you with simple and clear information about how to do this, and the benefits which will accrue.

**Operation Pollinator** is an initiative established by agri-business Syngenta, aimed at creating new habitat for bees and other pollinating insects, and making golf courses a more attractive place to play. The programme started in the UK in 2001, but has now spread to become a global activity. See [www3.syngenta.com/country/uk/en/biodiversity/Pages/Commerical Operation Pollinator.aspx](http://www3.syngenta.com/country/uk/en/biodiversity/Pages/Commerical%20Operation%20Pollinator.aspx)

The winner of the UK Operation Pollinator Awards for 2015, judged by STRI, was Elsham Golf Club in North Lincolnshire, who took wide expanses of grassland out of regular cutting, and planted a wildflower mix which now supports thriving populations of bumblebees and other insects. It has reduced labour and direct costs, and allowed them to redeploy Greenkeeper effort to other tasks on the golf course. They cut grassland and scrub down to a height of 50mm, cleared all the debris, sprayed with Rescue to kill all the broad-leaved grasses (the fine grasses were unaffected), and scarified the area after the grasses had died, before broadcasting a wildflower mix appropriate to the area. It took about 18 months to establish effectively, but they now have extensive colourful areas with abundant bees, butterflies, moths and other insects. See [www3.syngenta.com/country/uk/en/biodiversity/Pages/Commerical Operation Pollinator.aspx](http://www3.syngenta.com/country/uk/en/biodiversity/Pages/Commerical%20Operation%20Pollinator.aspx)

The creation and retention of good overwintering habitat such as dead wood, including log piles, fallen wood scattered on the ground and standing wood, will further improve the quality of the outcome, and golf clubs now often incorporate such features within initiatives to encourage bees and other insects.

Some golf clubs have gone further, and introduced beehives to their courses. This has tended to occur when one of the greens staff is either a beekeeper or wants to become one, and has delivered the secondary benefit of providing honey which can be sold to

members. The South Essex Golf Centre at Brentwood is a good example of where this is done, under their Course Manager Peter Dawson.

### **Is it worth it?**

Golf is a significant user of land in the UK, and is often in the firing line for alleged poor environmental practice. This is a gross over-simplification, since significant amounts of good quality habitat occur on many golf courses, and the retention of this is usually key to retaining the context of the course. Golf has good stories to tell about the things being done to safeguard habitats, as well as rare and vulnerable species, and needs to get better at publicizing this. Initiatives to create or restore wildflower rich grasslands are growing in importance, and can easily be incorporated within course management programmes in cost-effective ways. They can bring financial benefits to clubs, either through cost savings, or allowing redeployment of greenkeepers time, as well as providing real opportunities for clubs to show that they are good stewards of the land they occupy. When allied with the real difference this can make to increasingly vulnerable populations of bees and other pollinating insects, and the reputational and environmental payback that can be achieved, golf clubs should consider incorporating programmes such as this within their core estate management activities.