**Beesy does it**

Bob Taylor, Head of Ecology and Environment at STRI, updates us on Operation Pollinator and visits two courses where BIGGA members are making a real difference.

Operation Pollinator is designed to reverse the plight of bumblebees and pollinating insects in the UK and Ireland by creating valuable new habitats in out of play areas of golf courses.

In its aim is to establish pollen and nectar rich habitats on up to 500 golf courses to provide the essential food sources and nesting sites for pollinating insects - including bumblebees and other important wild bees.

Operation Pollinator provides a framework of knowledge, expertise and experience to assist with the successful management of wildflower habitats in out of play rough, alongside the conventional management of the golf course.

The inaugural Operation Pollinator Award, run by The Sports Turf Research Institute (STRI) and Syngenta, was held during BTME. After long deliberations North Foreland Golf Club in Kent were awarded the top prize.

The Award aims to highlight the plight of our native pollinators which are undergoing massive declines due to loss of the countryside and changing weather patterns. Moreover, just like the Environment Awards, it is hoped the award will be used as an industry platform allowing us to demonstrate that far from being a selfish use of the landscape, golf is a positive contributor to biodiversity and the conservation of both species and habitats, some of which owe their very existence to the presence of the golf course.

Operation Pollinator will give recognition to golf clubs that are committed to the conservation management, and which have successfully created pollen rich habitats on golf courses leading to an increase in pollinating insects.

So what is North Foreland doing that is so special?

The sites chosen at the club, a 36-hole facility on the Kent coast, had been unmanaged for over 30 years allowing deep ground ivy to take over and compromise the former chalk grassland. Site selection was due to it being largely out of play with limited foot traffic.

The results of the grassland management improvement work have seen a major transformation with the rough now alive with flying insects, moths, butterflies and grasshoppers. Bee activity within bee hotels has resulted in a gradual species increase and much enhanced environmental and ecological value. From the work taking place at North Foreland, it is clear that this is a long term project with lots of future potential.

Course Manager Dan McGrath MG fully understands and appreciates what works best in the course environment. The seed selected by him indicates that he has an implicit understanding of what grows well on the course and how it blends in with the rest of the course to provide an enjoyable, colourful and inspiring environment for members and visitors alike.

There are an increasing number of golf clubs working to develop pollinator habitats, building upon their experience and gaining direct and indirect benefit from the conservation management opportunities. Some clubs are also realising business opportunities from the initiative.

The finalists for the award included:
- Carnoustie Golf Links Management Trust
- St Andrews Links
- John O’Gaunt Golf Club
- Dundonald Links
- Hankey Common Golf Club

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The range of work is diverse. At one club, this work may involve simply recognising the plight of our pollinators and getting members to tie in with the need to leave areas of grassland, whilst at another bee houses are being erected and considerable effort is being given to creating flower rich grasslands.

So how does a club get started? Simple - call STRI and discuss the range of opportunities that are available. Identify areas of grassland that can be set aside and managed to optimise pollinator interest.

A management programme will be required highlighting management techniques including the sowing of appropriate wild flowers if needed. It will be essential that the flowers present provide a nectar or pollen source throughout three of the seasons.

Ensure good overwintering habitat which is essential if species are to fully utilise the habitats present. Dead wood including log piles, fallen wood scattered on the ground and arid wood are essential - not only for overwintering - but those specialist invertebrates that live in dead wood which are important in pollinating our flowers and grasses.

John O’Gaunt are well underway with the pollinator conservation work and are so advanced they are using the seed heads collected from the first established areas to develop new areas of grassland around the course. Do not rely on even neat and attractive areas - tall herbs including umbelifers and species of lalate in out of play areas should be encouraged. This may appear untidy to some but nature is not always tidy; these areas are often vital and will support species that are dependent upon them.

Communication is likely to become a main part of the programme and can take many forms. North Foreland are using beer mats in the bar printed with the Operation Pollinator logo, this is a great way of getting members and visitors aware and involved. Some clubs such as the London Club and Minchinhampton have installed signage alongside grassland areas which in turn have been specially developed next to public rights of way. This is a great way to get ramblers aware of the positive conservation work being implemented on the courses.

I would like to thank all of the golf clubs for entering, I am confident that working together we can all make a positive contribution to the conservation of our countryside and all that is in it.

There are probably many clubs just starting out perhaps feeling that they haven’t done enough but as I have found on visiting these clubs that they are doing far more than they think. They would not only prove worthy contenders of this new, prestigious award, but by joining in they become part of a growing network of similar like-minded clubs.

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**Operation Pollinator Awards**

The Operation Pollinator Awards is open to all UK and Ireland clubs implementing the Operation Pollinator programme. Operation Pollinator guidelines and advice has been developed specifically for golf courses in conjunction with STRI and is available through Syngenta. Please do your part by registering your interest with Syngenta caroline.carroll@syngenta.com or with me at STRI bob.taylor@stri.co.uk. We will notify you when the application form for 2014 is available. Award entries are judged by STRI.

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**About the author**

As STRI’s Head of Ecology and Assessment, Bob Taylor is one of the most experienced ecologists working in the UK. Bob has developed a suite of management techniques that maximises biodiversity and has worked at the cutting edge of golf course management since 2002.

Bob’s work takes him all over the UK and Europe. He has been known to travel far and wide, but no further than the back of his garden in order to take the lead as positive custodian of the landscape.
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Pitched battle?

The issue of pitchmarks is always contentious. Here Ben Dollery (left), a BIGGA member and Senior Greenkeeper at West Chiltington Golf Club, discusses the topic and promotes 'National Repair Your Pitchmark Day.

The following explanation is from the article:

"It's time to help greenkeepers win the battle against pitchmarks. Here are the often reported statistics about them:

"A pitchmark repaired within 10 minutes of being created will fully recover within three days. A poorly repaired pitchmark or one left for a day before being repaired will take over a week to heal."

"On average the number of ball marks made on greens by a golfer per round is eight. Assuming only 130 rounds are played daily on your course, your greens receive 1040 impressions daily, 31,000 per month or more than 374,400 per year."

In recent years the issue of pitchmarks – always prominent in the turf management industry - has become an even hotter topic. Social media now has a big part to play as many greenkeepers use it to show off their courses or gain advice from fellow turf experts as well as keeping members and golfers informed. Recently a growing number of greenkeepers and golf clubs have been tweeting pictures of unrepaired pitchmarks on their greens and venting the frustration that goes with them.

Some golfers must wonder why pitchmarks are so frustrating. Greenkeepers strive to provide fast and true greens and unrepaired pitchmarks make the greens bumpy and patchy as well as taking up valuable time repairing.

My interest in the topic was heightened after seeing a Twitter conversation last year between Dave Collins (@greenkeeperdave) and Julie Vesely (@golfclubnbeds). They were discussing pitchmarks when they came up with promoting the idea of 'National Repair Your Pitchmark Day' and set a date for 14 August 2013. The day was a great success, many golf clubs got involved as well as a few celebrities - South African cricketer and keen golfer AB de Villiers and Bradford City FC. Hundreds of other social media users retweeted the event.

So what did the day involve?

Apart from the massive campaign on Twitter, and at their golf courses, some greenkeepers gave out pitchmark repairers at their clubs and explained the importance of these to golfers going out that day. Another day is planned for 14 August this year to hopefully raise even more awareness.

Here at West Chiltington, which is a parkland course in West Sussex, we will be putting up posters around the club and will be maximising exposure on Twitter, Facebook and our website.

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**How to repair a pitchmark**

1. Take your ball mark repair tool and insert the prongs into the turf at the edge of the depression. Do **NOT** insert the prongs into the depression itself, but at the rim of the depression.

2. Then push the edge of the ball mark toward the centre, using your ball mark repair tool in a gentle twisting motion.

3. This is where golfers who try to repair ball marks usually mess up. Many golfers believe the way to fix a ball mark is to insert the tool at an angle, so the prongs are beneath the center of the crater, and then to use the tool as a lever to push the bottom of the ball mark back up even with the surface.

4. **Do not do this!** Pushing the bottom of the depression upward only tears the roots, and kills the grass.

Keep 14 August in mind and follow @greenkeeperdave @golfclubnbeds @clearswing on Twitter for details.
to get people talking about it.

National Repair Your Pitchmark Day is all about raising awareness. It is about reinstating etiquette back into golf in an educational and fun way, rather than being patronising. Last year’s event helped by getting people talking about the issue, and if only a handful of golfers improve their etiquette it’s a start. They should hopefully pass this on to their playing partners and any new golfers to give them some ownership of the courses they play.

We need to get golfers thinking about the care of the course as part of their game. For some it is in-built but for others it simply isn’t, though most would tell you they tend and repair greens incessantly if you asked them!

This was certainly confirmed when we asked the members at West Chiltington, to fill out a short, anonymous questionnaire featuring just three questions based on pitchmarks. 188 members replied…

1 Do you repair your Pitchmarks? Unsurprisingly, 99% said yes!

2 Would you repair a pitchmark made by someone else? Again, unsurprisingly, 94% said yes

3 How often do you repair Pitchmarks? 56% said they repaired pitchmarks 80-100% of the time, with 36% claiming they repaired them every time. Just 10% said they repaired them 0-10% of the time.

The aim is to get golfers in the frame of mind where repairing pitchmarks is as important to them as holing out or filling in their scorecard after every hole. It is an old line trotted out by greenkeepers, but one of the things we try to impress upon our members and visitors is that we are not the only stewards of the course and that we all play a part in its presentation and standards.

Often this is a difficult message to convey especially to our more cynical customers.

If we can all teach one new golfer how to repair a pitchmark then that’s hundreds of golfers who will help us out in the future.

A good way to get golfers on board is to provide free repairers or stock some of the huge variety carrying a logo, ones that members can display with pride.

A close relationship between golfers and greenkeepers is vital for understanding the problem and working together to improve the course.

Getting captains on board will help to get the message across if they mention it in their regular speeches, and after recent meetings we have arranged pitchmark repair social events.

At West Chiltington we are constantly encouraged to speak with members to improve relationships and understanding both ways. We regularly meet with the different sections and speak at their AGMs as well as answering questions they have about our latest project whilst out on the course. Not everyone reads the latest newsletter on the website so face to face communication with golfers is still very important, in fact in my opinion it can’t be beaten.

We have our own Twitter account @westchiltington to keep members informed of daily work we carry out and to publish pictures of the course as well as information on pitchmarks, bunker raking and all types of course management. We hope that by involving the members and through giving them a sense of ownership, pitchmark repairs and other small acts will become a regular part of their game.
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- shot in winter (both at West Chiltington Golf Club)
- ABOVE: Pitch mark with repairer tool and LEFT: double pitchmark
This month Dr Terry Mabbett looks at the possibilities genetically modified turfgrass could offer the turf manager – and the potential downsides.

Conventional plant breeding continues to advance grass varieties with genetic traits for enhanced plant performance in managed turf grass but genetic modification (GM) could steal a march.

Access to and use of genetic material in conventional grass plant breed is limited to DNA (genes) within the genus (e.g. Agrostis) and perhaps within the wider grass family (Graminae) depending on the level of genetic compatibility and hybridization with other genera. With GM ‘the world becomes an oyster’ in the quest for DNA for insertion into the grass genome using a technique called ‘gene transfer’. GM puts genetics into a whole new arena by opening up new avenues for scientists to explore and exploit using an apparently infinite spectrum of DNA.

Genes can now be accessed from literally anywhere and everywhere, from rats to roses, and inserted into grass genomes for phenotypic expression of new desired traits. Difference between the standard and modified genotypes is minuscule and is separated by a single gene. But the new phenotype will be completely different with an ability to overcome the pinpointed problem (for example a specific pest or disease or environmental conditions), whichever was the specific target factor for genetic modification.

Potential upsides and downsides of GM turf grass

Universal potential benefits of genetic modification appear as wide as the gene bank in the broader plant and animal world. Grass plant resistance to specific insect pests and plant pathogens such as chafer grubs and Microdochium nivale (Fusarium patch disease) immediately springs to mind. Design and development of grass genetically modified for non-allergenic pollen is well advanced. Australian researchers have genetically modified perennial ryegrass (Lolium perenne) and Italian ryegrass (Lolium multiflorum) which do not trigger an allergenic response (hay fever) in humans. Though clearly not applicable to grasses used on tees and greens, where regular low-cut mowing removes the ability of grass plants to flower, this GM avenue could prove interesting for grasses used to seed rough areas.

With increasing interest in bee-friendly areas where the rough grass species are as important as the wild flowers seed selection in securing ‘bee friendliness’ of the sward composition and therefore high pollination levels, genetic modification of rough grass species could be of interest. It all sounds easy and the mechanics of genetic modification certainly are for appropriately qualified scientists with state of the art instrumentation at their fingertips. The real and sometimes seemingly insurmountable problems arise from public perceptions of GM fuelled by hyped up media coverage and scare stories about ‘Frankenstein foods’. This has helped to build a strong anti-GM lobby with a large measure of public support.

Perhaps surprisingly first attempts at GM now around three decades old were targeted at food crops including wheat and maize as food crops and soya bean for animal feed. This appears to have been the initial undoing of GM in Europe. GM came in for an extraordinarily bad press especially in the
Is genetic modification an avenue to turf grass improvement?

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UK. Virtually no attempt had been made to carry the public along and get them on board. I can remember attending conferences on biotechnology in the early 1980s including GM where the only journalists were scientists from research publications and other ‘learned’ journals. The net result was blanket public distrust for GM in all its forms including grasses used in sports and amenity turf.

But many fears expressed about genetic modification of food crop plants, including members of the grass family – wheat, rice and maize – simply do not apply to sports turf because no human being is going to eat the genetically modified biograss. The only animals likely to do so are insect pests like chafer grubs, small wild mammals like rabbits and wild geese grazing greens and tees in spring for that early ‘bite’. They are broadleaved weeds or turf grasses.

The great GM grass escape

The first work on genetic modification of a turf grass started around the year 2000 and produced a GM Agrostis stolonifera (creeping bentgrass) resistant to glyphosate, a systemically acting total herbicide which normal kills all green plants whether they are broadleaved weeds or turf grasses. It did not receive general public attention until 2006 when the press, including New Scientist magazine, reported how scientists had found this GM trait in the wild.

The grass had been designed and developed for easy-to-manage pure stands on golf courses but had escaped its managed turf niche and moved into the wild up to 3.8 km from where it was being trialled every year. It proved highly attractive to chafer grubs causing a population explosion and widely taken up by golf courses across the country.

In January 2014 the Columbus (Ohio) Gazette said “If no one beats Scott’s to the market it will be the first producer of what it calls ‘enhanced turf grass’. Quoting Scott’s they said the grass (GM Poa pratensis) is designed to grow slower, require less mowing, be easy to keep weed free and to require a lot less water. GM turf grasses look set to make their mark in North America but obtaining approval in Europe and especially the UK may prove a much harder proposition. Not particularly due to scientific concerns in the EU, but general concerns articulated by the press and taken on board by broad swathes of the public.

Risk scenarios put forward against GM plant species are almost as varied as the gene transfer options offered to molecular biologists. Just imagine this invented scenario - ‘A bent grass (Agrostis) genetically modified for resistance to Fuisorum Patch was approved and widely taken up by golf courses across the UK. The genie containing resistance was sourced from rhabarb and scientists said the ‘rhabarb gene’ caused the cells of the GM grass to manufacture a chemical that isolated leaf infections by Microdochium nivale. But the GM grass proved highly attractive to chafer grubs causing a population explosion and untold damage to golf courses throughout the country.

Foxes had a field day feeding on the chafer grubs but the chemical, transferred unaltered from chafer grubs to foxes, made these urban wild animals highly aggressive with reports of attacks on people all over the country and other towns and cities throughout the country.’

It clearly sounds contrived and is highly unlikely to happen but is just the sort of scenario bound to be used as an argument against, should development and approval of GM turf grass ever seem likely to happen in the UK.