



**OperationPollinator<sup>®</sup>**  
Multifunctional Landscapes

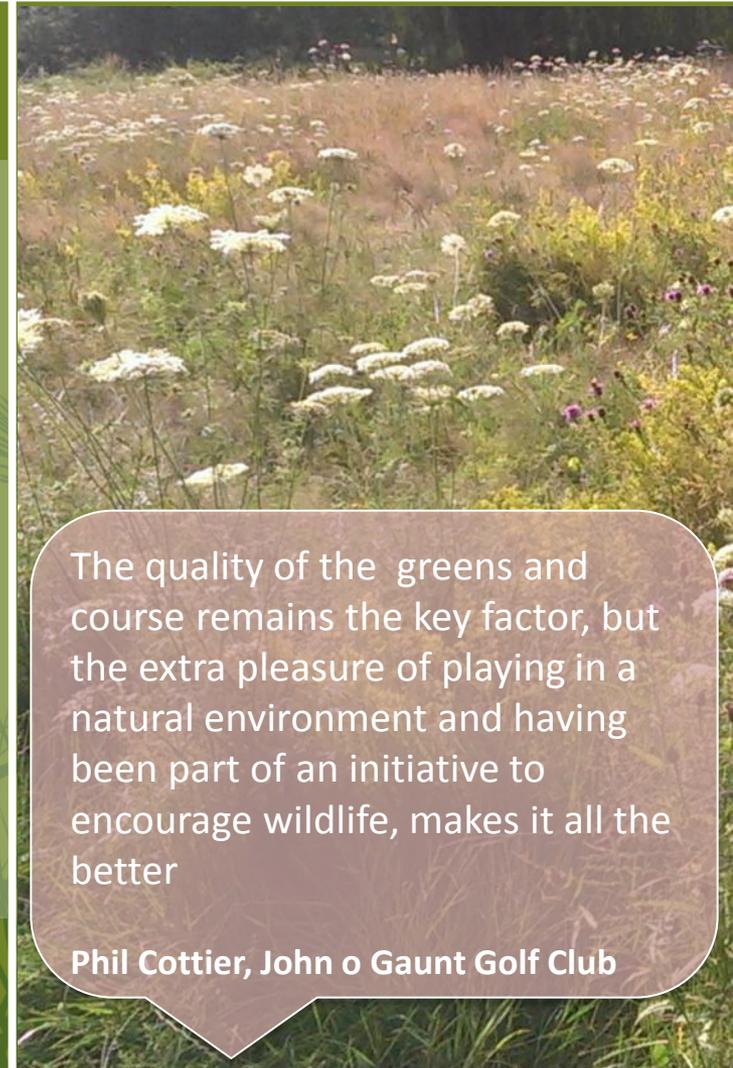
**syngenta.**

Positive Action  
for Pollinators

Unlocking Golf's True Potential

# New initiative for Golf

Introduce native wildflowers to attract bees and other pollinating insects to out of play areas of the golf course



The quality of the greens and course remains the key factor, but the extra pleasure of playing in a natural environment and having been part of an initiative to encourage wildlife, makes it all the better

**Phil Cottier, John o Gaunt Golf Club**

# Objectives



Play a key role in reviving the fortunes of native bees and other pollinating insects



Generate positive coverage for golf clubs and the golf industry





# Supported by key partners

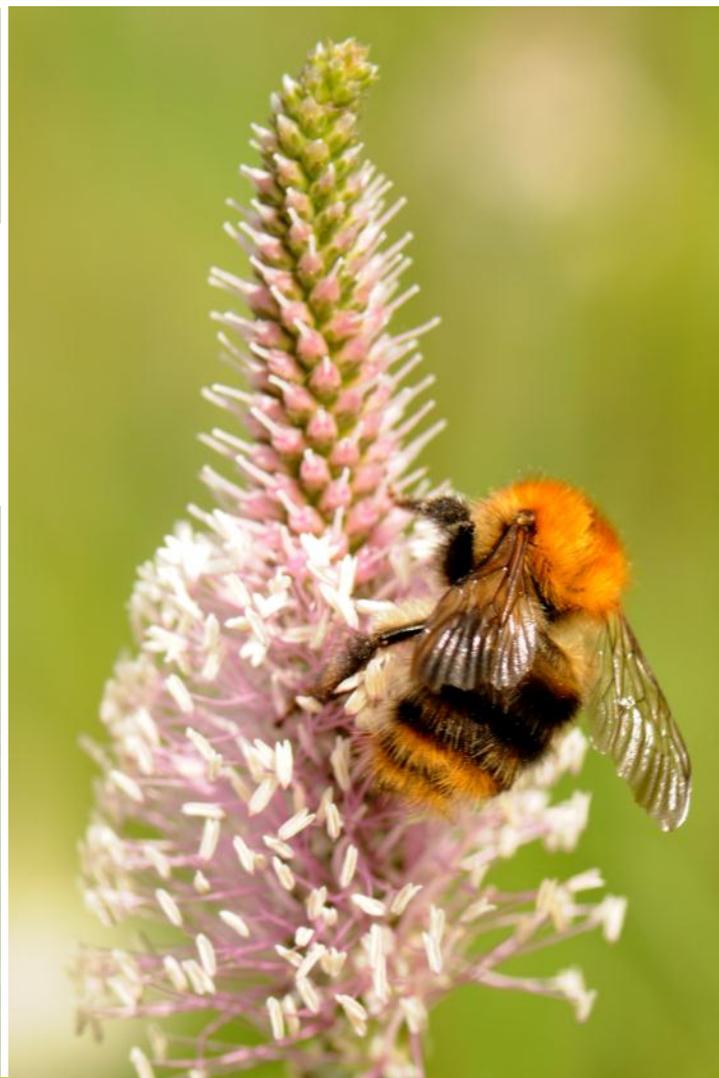


*Wildlife Farming Company*  
- Proven Wildlife Delivery -



Centre for  
Ecology & Hydrology  
NATURAL ENVIRONMENT RESEARCH COUNCIL

- **Aim:** Increase biodiversity and retain farm profitability and examine impact of habitat creation and management techniques on a wide range of plants and animals
- Over 500 000 observations made



# A successful project

## Scientific Project 2001-2005



- Increased Bumblebee numbers up to 600% over crop
- Regeneration of the rare *Bombus ruderatus*
- Butterflies rose 12 fold
- Other pollinating insects rose 10 fold

## Roll-out in UK 2005-2008



- 570 Farmers joined
- Over 1000 ha's of margins
- Partnerships incl. Sainsbury's
- Linkage to UK Environmental Stewardship Schemes

## Roll-out across Europe 2009 - 2014



- Already 16 countries joined
- Objective 10,000 ha of margins
- Partnerships w. Governments, Universities, Food Chain etc.

# Benefits for everyone



# Bees are important



70% decline in bumblebees over 40 years

Bees help pollinate 35 % of our crops

## Top 100 BES influential papers



A golf course which is not a-buzz with colour and movement is a sad and lonely place.

Paul Worster, Minchinhampton Golf Club

Bees play a vital role in our agricultural system, making the care and protection of bees critical to the future of our planet's food security

# Benefits for everyone



# Raising your profile



Raising the profile of your team



A sense of pride and motivation



Promote good management practice



Greater engagement with club members



Building environmental management skills

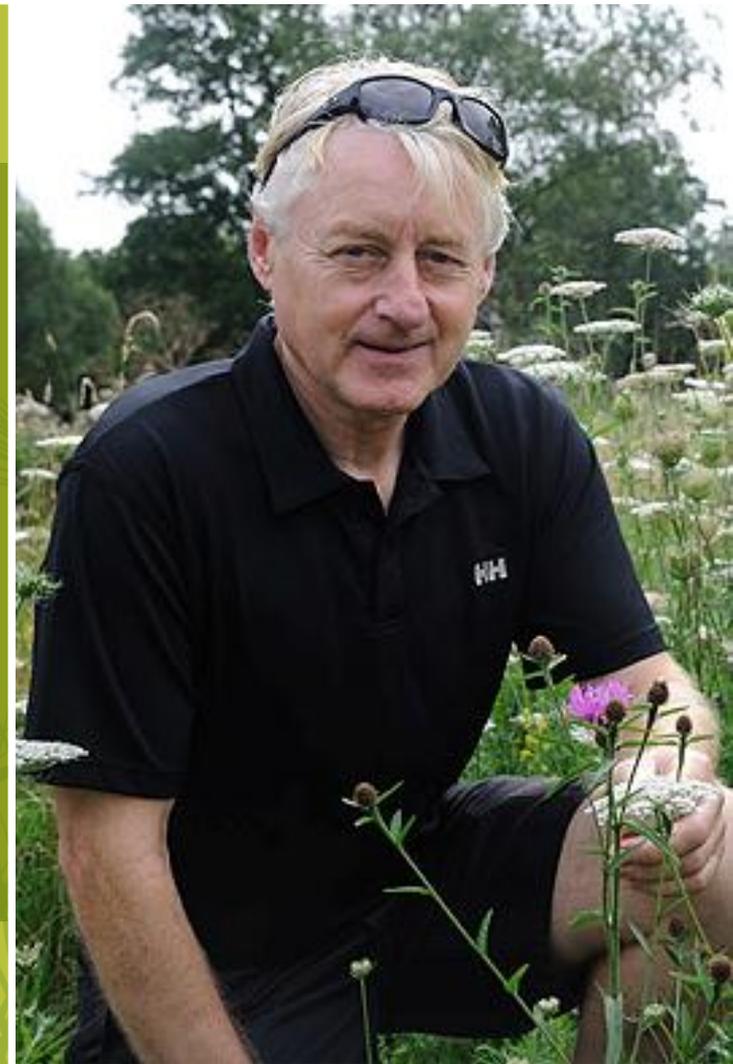


Recognition through environmental awards



**74%** of players agree or strongly agree with the statement – I enjoy seeing wildlife, birds, bees and butterflies when I play.

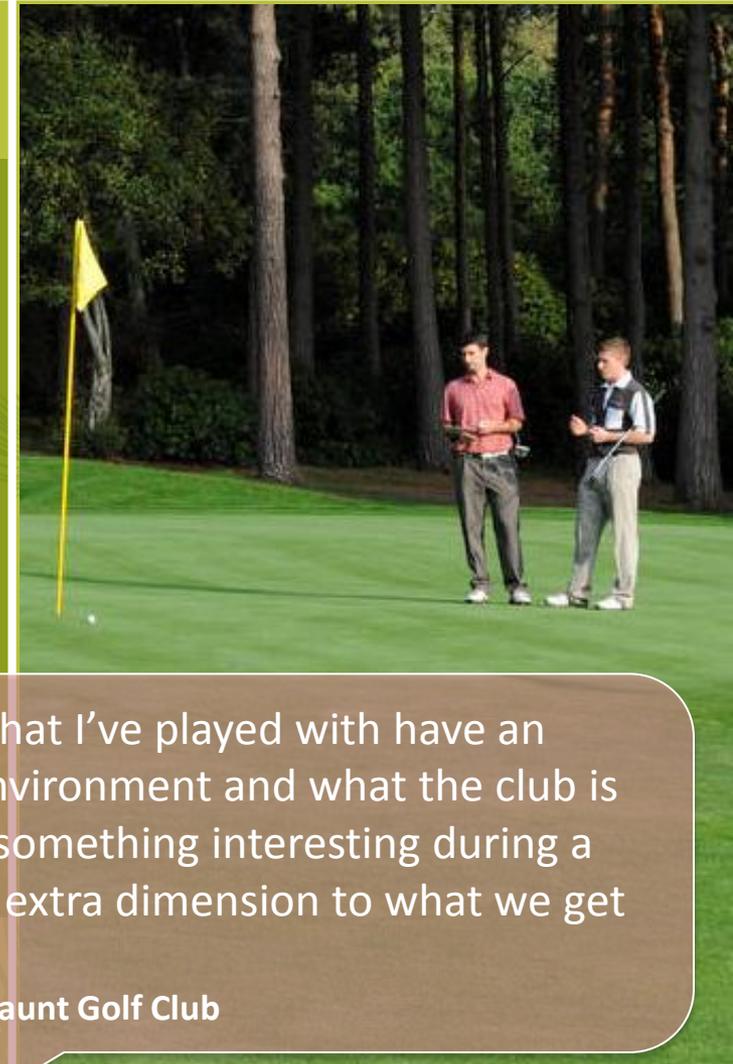
# Benefits for everyone



# Enhancing the playing experience

**81%** of players surveyed said that it is important to have a natural looking course |

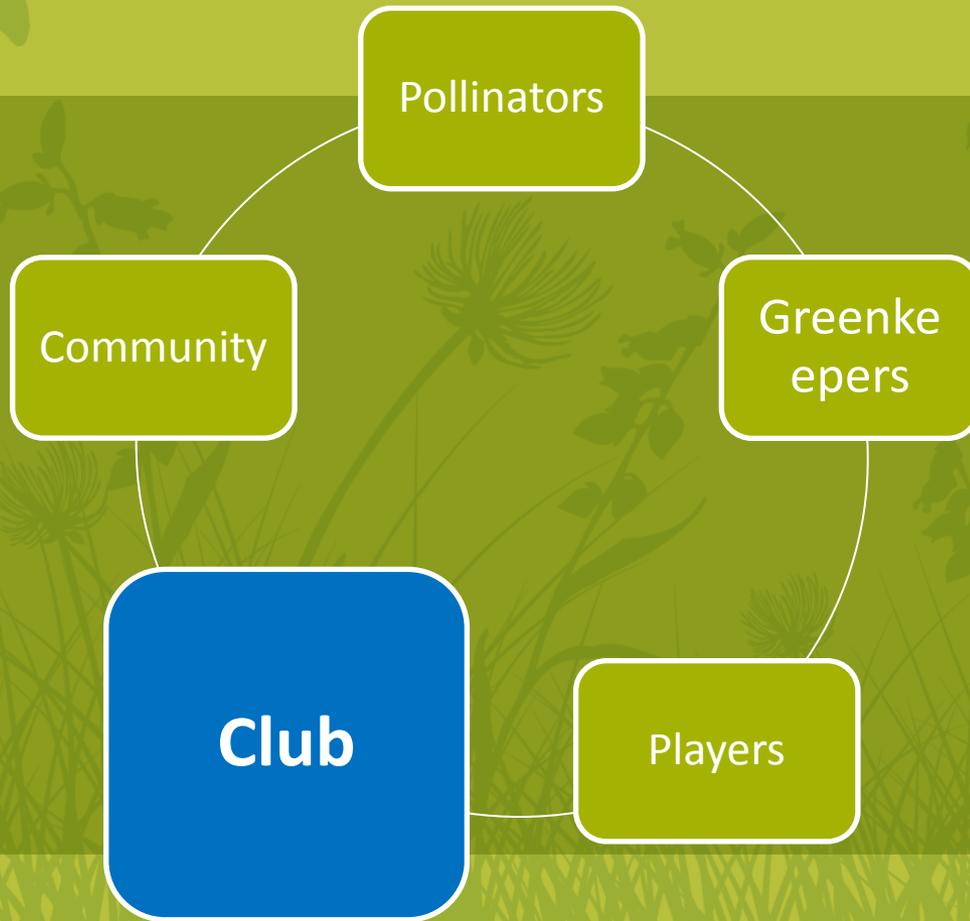
**60%** are not satisfied with environmental initiatives on the course



Most members that I've played with have an interest in the environment and what the club is doing. If we see something interesting during a round it adds an extra dimension to what we get out of the game

**Phil Cottier, John o Gaunt Golf Club**

# Benefits for everyone



# Unlocking the clubs true potential

- Raise the profile
- Creating pride and interest
- Attract new members
- Retain current members
- Attract more visitors
- Environmental accreditation
- Marketing opportunity

Every business needs as many Key Selling Points as possible, and Operation Pollinator is a great opportunity to show the best side of golf in action!!

**Paul Worcester, Minchinhampton Golf Club**

# Raising the profile of the club



Local newspapers and regional TV



Display board updates



Report sightings of rare bumblebees



Website updates



Nominate an Operation Pollinator champion



Submit photographs to local newspapers

“In this 'green' age our involvement with ecological projects is a great **selling point** for the club. If we can provide a habitat for endangered species and enhance the natural beauty of our course by planting wild flowers, which then attract members and visitors to our club, Operation Pollinator offers a win-win.”

Julie Morris

Secretary, Fulford Heath Golf Club, Birmingham

# Objectives



# Connect with the community



Invite local schools to get involved with management and monitoring



Engage with local environmental groups



Open days / course walks



Breakfast meetings or evening educational seminars

Building bridges and trust with local communities is an important business-ethic in the modern day. Operation Pollinator is a great introduction to all that is good about golf.

**Paul Worcester, Minchinhampton Golf Club**



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Bringing your golf course to life

Unlocking Golf's True Potential  
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# Proven project in golf



3 year trials programme aimed to develop agronomy techniques for golf



In swards with Perennial Ryegrass and/or Yorkshire fog present in the intended area

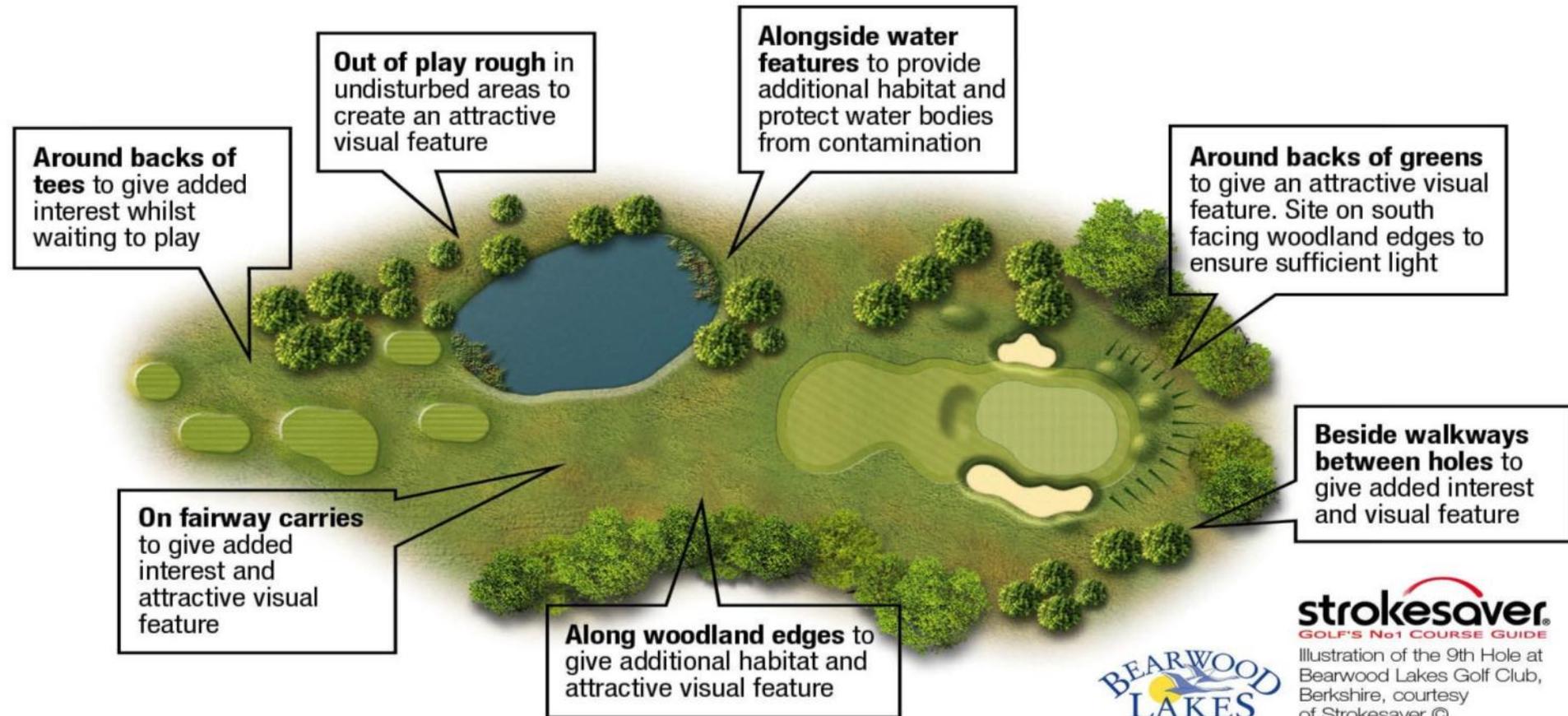


 **PrimoMaxx**<sup>®</sup>  
Plant growth regulator

 **RESCUE**<sup>®</sup>  
Herbicide



# Suitable high impact areas



# Wildflower establishment...

## Guidelines for Operation Pollinator wildflower establishment

<b>Timing</b>	<b>Late-summer/early-autumn</b>	Operation Pollinator establishment can commence when weather conditions are supporting active growth, to achieve good results with Rescue applications and for successful establishment of wildflower plants. Autumn programmes should commence whilst there is still sufficient time for seedlings to establish before the winter.			
<b>Action</b>	<p><b>Cut and remove</b> existing vegetation to a height of 50 mm.</p> <p>Identify grass species in sward before cutting to assess need for and potential impact of Rescue application.</p>	<p><b>Apply Rescue</b> at a rate of 1.0 l/ha. Apply during periods of active growth.</p> <p>Typically late July/August.</p>	<p><b>Apply Primo Maxx</b> five days prior to over seeding.</p> <p>Apply at a rate of 3.0 l/ha.</p>	<p><b>Scarify</b> to remove 50-60% of surface vegetation.</p> <p>Typically early September.</p>	<p><b>Over seed</b> with appropriate Operation Pollinator wildflower mix. Leave seed on surface; do not bury. Sow whilst soil moisture and soil temperature are sufficient to ensure autumn germination and establishment – aim to complete by mid-September.</p>
<b>Reason</b>	To assess impact of Rescue application on sward composition.	Rescue removes Ryegrass to open up sward and significantly reduce competition, improving wildflower establishment. Trials have shown some other aggressive coarse grasses, such as Yorkshire Fog can also be reduced.	Suppresses grass growth to reduce competition and allow new wildflower seedlings to establish once sown.	Creates bare earth surface for wildflower seeds.	Wildflower seeds germinate from the surface.



*Opportunities may exist for spring establishment of wildflowers, however in practice results can be more variable as a result of summer drought and competition from coarse grasses. Further Operation Pollinator research plans to investigate management options to increase chances of success from spring sowing.*

# Add colour and interest



Birdsfoot Trefoil



Black Knapweed



Devil's Bit Scabious



Field Scabious



Kidney Vetch



Lady's Bedstraw



Selfheal



Wild Carrot



Wild Red Clover



Yarrow

- Native seed from Emorsgate Seeds



# Costs is only one member

As we establish more wildflower areas around the course, the aim is that it will add to the experience of playing in a natural environment

Steve Thompson, John o Gaunt Golf Club

£ 650 - 790

- To establish 0.5 ha
- Includes seed cost of £345



# Annual Maintenance...

## Guidelines for Operation Pollinator annual management

Timing	Spring		Autumn
Action	Cut and remove existing vegetation.	Apply Primo Maxx if required at a rate of 3.0 l/ha.	Apply Rescue if required at a rate of 1.33 l/ha. Cut and remove existing vegetation.
Reason	<p>Spring removal of rough vegetation may be required on high fertility sites, depending on growth over the winter to reduce competition.</p> <p>Complete by early March to avoid disturbance of ground nesting birds.</p> <p>As Operation Pollinator areas establish and fertility declines, the spring cut and remove will not be required.</p>	<p>Spring application of Primo Maxx in the first season after wildflower establishment can further reduce competition from grasses, to allow wildflowers to establish.</p> <p>In most instances, further use of Primo Maxx in subsequent years will not be required.</p>	<p>Spring application of Rescue when required can remove aggressive coarse grasses to open up sward for wildflowers.</p> <p>In most instances Rescue treatment will only be required if coarse grasses threaten to pose a competitive threat to Operation Pollinator areas. Assess species composition annually to evaluate need for treatment.</p> <p>Wildflowers will generally perform better in areas of low fertility. Autumn removal of vegetation is essential to reduce fertility of Operation Pollinator areas. Autumn cut and removal minimises disruption to wildlife.</p> <p>Wait for wildflowers to set seed to help with natural regeneration of wildflower species.</p>



*Over seeding with an appropriate Operation Pollinator wildflower mix may on occasion be required to supplement or restore desired species. Follow the Operation Pollinator establishment guidelines for autumn establishment.*



# How we support your club



<http://www.greencast.co.uk/uk/environment/operation-pollinator-publicity-resources>



Downloadable communication materials (Press Release template)



Literature



Simple sign up to use the logo (add logo)



Bee ID cards and poster



It's given us a differentiator over other clubs in the area, which helps to forge closer links with members and attract visitors.

Dan McGrath, North Foreland Golf Club



# How we support Greenkeepers



Regular e-tech bulletins



Dedicated website including technical support



Literature



Telephone support



Web training



Share experiences and feedback results



# Engaging literature

## THE OPERATION POLLINATOR GUIDE TO THE BEES OF GREAT BRITAIN AND IRELAND

**Common types of pollen transportation:**

**Wild bees are an essential part of the natural ecosystem for the pollination of food crops and wild plants, and to maintain biodiversity**

**There are over 250 species of bees in Great Britain and Ireland, only one of these is the Honeybee *Apis mellifera***

**Many bee species have seriously declined in Great Britain and Ireland and some species are on the verge of extinction**

**Golf courses provide outstanding potential to create essential nesting habitat and food resources for a wide range of native bees and other pollinating insects**

**The different types of bees**

There are over 250 species of bees in Great Britain and Ireland. Only one species is the Honeybee *Apis mellifera*. 38 species are bumblebees – half the total in Great Britain – and the remainder are other bees such as solitary bees.

**1. Honeybees**  
This is the only bee species in Europe that collect honey, and is the only species which is used for commercial honey production and pollination. Most colonies are managed by humans, but honeybees may also nest in a wild species over much of Europe.

**2. Mining bees**  
Mining bees excavate nests, individually or in large colonies, in soil and soil gaps in the ground, in trees or cliffs. Numbers in the region range with over 50 species. Longhorn bees (over 20 species) mine in elongated wood-pulp cavities.

**3. Mason bees**  
Mason bees build mud cells in various cavities, including wood, in structures such as trees, sheds, walls, chimneys or soil. The largest family in Europe, they are also native to North America, where they are used as pollinators for horticulture.

**4. Leafcutter bees**  
These bees build mud cells, including mud made from excavated wood, in soil, in trees, in wood, in structures such as trees, sheds, walls, chimneys or soil. The largest family in Europe, they are also native to North America, where they are used as pollinators for horticulture.

**5. Digger bees**  
Over 200 of solitary bees in Great Britain and Ireland are digger bees. They are also native to North America, where they are used as pollinators for horticulture.

**6. Solitary bees**  
Solitary bees can be broadly divided into two main groups: mason bees and leafcutter bees. A few digger bees, some solitary bees and some mason bees have excavated nests in soil, rock and wood, although they do not excavate.

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**Bees and their role as pollinators**

Many insects transfer pollen between the reproductive parts of flowers of the same species – a process known as pollination. Most insects, however, only visit flowers for nectar. Bees, solitary bees in particular, are usually the most efficient at pollination. As they visit flowers and transfer a load of nectar, they carry pollen from flower to flower. This pollen is then transferred to the next flower, where it can be used as a source of energy for both adult and larvae, or for pollen, which provides pollen. Bees are the most important pollinators for many crops, including many fruits and vegetables. This includes the most important crops, such as wheat, corn, soybeans, and many other crops. Bees are also important for the pollination of many wild plants, including many of the most important crops, such as wheat, corn, soybeans, and many other crops.

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There are over 24 species of bumblebee in Great Britain and Ireland

- Bees are important pollinators
- Many bees are threatened by habitat loss
- Operation Pollinator provides advice to create habitats for pollinating insects

[www.operationpollinator.com/golf](http://www.operationpollinator.com/golf)

**syngenta**

### Social Bumblebee Identification

**Garden Bumblebee**  
*Bombus hortorum*

**Buff-tailed Bumblebee**  
*Bombus terrestris*

**Common Garden Bumblebee**  
*Bombus pascuorum*

**Red-tailed Bumblebee**  
*Bombus lapidarius*

**The Bumblebee**  
*Bombus hyporum*

**Early Bumblebee**  
*Bombus pratorum*

1. Black 2. Reddish 3. Most stop in long or wide 4. Most stop larger than wide 5. Most stop very much larger than wide

### Top 10 Tips to successfully create an Operation Pollinator area

Operation Pollinator is creating new habitats for increasing populations of bumblebees and other pollinating insects. It is aiming to be the go-to and essential industry's positive action to put back essential food and wildlife resources – and the opportunity to help save bees.

Not only does Operation Pollinator create the chance to enhance biodiversity and add interest to golfers playing in a natural environment, it can also be a profitable education for new players in the course and a chance to engage with the local community in the drive for diversity, sustainability, resilience and future success for the club.

Bob Taylor, Head of Ecology at STW, provides his Top 10 tips to successfully create an Operation Pollinator area, and how to get the best out of a Bee table.

**Seed selection**

• Select a mix of flower species that will give a prolonged source of pollen and nectar through the seasons. This is important for pollinators and other insects to complete their life cycle, as well as

### Turf Talk

APPLICATION SPECIALISTS

DISEASE CONTROL FOCUS

BEST PRACTICE TIP FOR REDUCE

FEATURE

# Success stories

## Dan McGrath, North Foreland Golf Club

It is important to keep **members up to date** with what's going on, especially any **successes** that have been **achieved**

Keep communications **simple**. Before, during and after **pictures** with captions rather than written reports. **Email** is definitely effective.

**Press releases** to local newspapers tell of our **successes** that will raise the **profile** of the course.



# High profile success



Princess Anne visit to Minchinhampton Golf Club

# Useful Contacts

- [www.operationpollinator.com/golf](http://www.operationpollinator.com/golf)
- [www.greencast.co.uk/uk/environment/operation-pollinator-publicity-resources](http://www.greencast.co.uk/uk/environment/operation-pollinator-publicity-resources)
- Bob Taylor - STRI
- Simon Watson / Caroline Carroll - Syngenta
- Emorsgate Seeds [www.wildseed.co.uk](http://www.wildseed.co.uk) 01553 829028
- [www.everris.com](http://www.everris.com)

# Next steps

- Sign up for your Operation Pollinator pack and logo
- Identify potential sights
- Identify your Operation Pollinator Champions
- Late Spring 2014 – Practical training workshop
- Late Summer 2014 - Site preparation/seeding

# Unlocking golf's true potential



70% decline in bumblebees over 40 years

Benefits pollinators, greenkeepers, members,  
club, community and Golf

**You can make a difference!**