



Operation Pollinator



Positive Action
for Pollinators

Communicating with players, members and the community

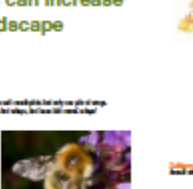
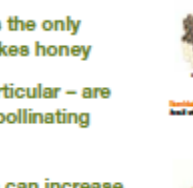
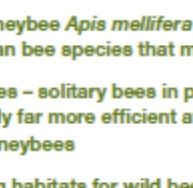
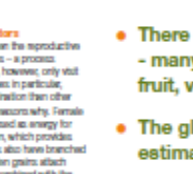
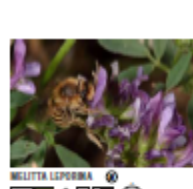
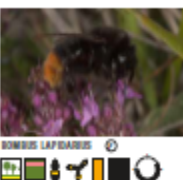
syngenta.

www.operationpollinator.com

Communications Support



- Materials which will help players, members and the community understand the project, it's benefits and the work which the club is undertaking
- Log on to:
<http://www.greencast.co.uk/uk/environment/operation-pollinator-publicity-resources>
- Download licence agreement to allow use of the Operation Pollinator logo (free)
- Sign and return agreement to Syngenta
(Bees of Europe Poster available for use in the club house)



THE OPERATION POLLINATOR GUIDE TO THE BEES OF EUROPE



Developed by Syngenta and the European Union. It is a project of the European Union. It is a project of the European Union. It is a project of the European Union.

Different types of pollen transportation

- Wing
- Leg
- Body
- Head
- Antenna
- Proboscis
- Stomach
- Wing
- Leg
- Body
- Head
- Antenna
- Proboscis
- Stomach
- Wing
- Leg
- Body
- Head
- Antenna
- Proboscis
- Stomach



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 far more efficient at pollination than other insects and there are a number of reasons why. Female bees visit flowers for nectar to be used as energy for both adult and larvae, and for pollen, which provides protein, mostly for larval food. Bees also have branched hairs on the body to which the pollen grains attach through electrostatic forces. This, combined with the extra time spent collecting, and thus handling, pollen makes them very efficient at pollination.

Different bee species visit flowers for different reasons
Adult honeybees visit flowers many times over. Therefore, workers spend much of their time foraging for nectar to meet adult energy requirements, rather than collecting pollen to feed larvae. With 'solitary' bees, it is completely the opposite. A female looks after her brood on her own. This brood can number over 20 larvae during her adult life. This means she spends much more time collecting pollen for her larvae than an individual worker honeybee.

Different bee species transport pollen in different ways
Honeybees and social bumblebees collect pollen on a hairy hairy patch on their hind leg surrounded by strong hairs, called the pollen basket or corbicula. To make the dry pollen stick to the hairy patch, they rub the pollen with nectar, which stops the wet pollen being rubbed from the pollen basket onto the next flower.

Most 'solitary' bees collect dry pollen, and are often very fast at doing so, on specialised areas of hairs on the hind tibia or beneath the abdomen, called the scopae. The dry pollen sticks attached to the bee in transit, but is easily brushed off when it visits other flowers.

Solitary bees are the best pollinators
It is widely assumed that honeybees are the only viable pollinators. They can be transported in large numbers and are therefore currently used for commercial pollination. Scientific research suggests, however, that solitary bees can be more efficient at pollination than honey bees. The European solitary bee *Megachile rotundata*, for example, is known to significantly increase crop yields of alfalfa and is used globally and commercially for pollination.

To find out more about Operation Pollinator and any of the topics discussed here, please go to: www.operationpollinator.com

- There are over 2,000 species of bee in Europe - many of these are important pollinators of fruit, vegetables and arable crops
- The global value of crop pollination is estimated at over €150 billion a year
- The Honeybee *Apis mellifera* is the only European bee species that makes honey
- Wild bees – solitary bees in particular – are generally far more efficient at pollinating than honeybees
- Creating habitats for wild bees can increase crop yield and will improve landscape biodiversity



The different types of European bees
There are currently 70 genera contained within over 2000 species of bees in Europe. Only one species is the Honeybee *Apis mellifera*, 60 species are bumblebees – from the well known genus *Bombus* – and the remainder are either described as 'solitary bees'.

Solitary bees can be broadly divided into two main groups: mining bees and cavity nesters. A few can be social. Some construct their own nests from materials such as mud, resin and pebbles, attaching them to various structures.

1. Honeybees
This is the only bee species in Europe that makes honey and is the only species which is used for commercial honey production and pollination. Most colonies are managed by man, but the honeybee also nests as a wild species over much of Europe.

2. Bumblebees
Bumblebees are social bees and are related to honeybees. Both use a similar method for collecting pollen. Bumblebees make nests on the ground or in cavities above or below the ground, often in walls or tunnels. *Bombus terrestris* is used commercially for pollination.

3. Mining bees
Mining bees excavate nests individually or in loose colonies, in various soil types on the ground, in banks or cliffs. *Andrena* is the largest genus with over 400 species. *Leiostictus* has over 170 species and *Halticus* has more than 70 species, many are important crop pollinators.

4. Cavity-nesting bees
These bees nest in various cavities, including small shells, or excavate nests in dried wood, soft rocks, masonry or soil. The largest family is *Megachilidae*, which includes mason and leafcutter bees. They all use mud, pebbles or leaves (pounded or cut pieces), or resin in nest construction. A few species are used commercially for pollination.

5. Caricoo bees
Over 17% of solitary bees in Europe are caricoo bees. There are also caricoo bumblebees. As their name suggests, these bees over the nests of other bees. They do not collect pollen but can pollinate flowers when foraging for nectar.



Materials available



- Presentation to use with committees, members and the community
- Press release template for local PR
- Literature
- Logo
- Photographs
- Poster



Publicity ideas for golf clubs



- Announce involvement in local newspapers and regional TV (use the Press Release template)
- Report sightings of rare bumblebees or other insects
- Nominate a Club Member as an Operation Pollinator champion to report successes
- Post information and updates on management and observations on notice boards and the club website
- Erect display boards on project plans and what to look out for in key areas
- Invite the golf club youth section or local schools to get involved with management and monitoring
- Get involved with local environmental groups to engage in monitoring
- Encourage the Club Secretary to use Operation Pollinator involvement as a hook to attract new members
- Submit photographs of attractive features and insects activity to local newspapers and TV alongside PR
- Engage with club members by using Operation Pollinator as a springboard for ecological initiatives



Useful Contacts



- www.greencast.co.uk
- www.operationpollinator.com/golf
- www.greencast.co.uk/uk/environment/operation-pollinator-publicity-resources
- www.everris.com
- Bob Taylor, STRI - 01274 565131 – bob.taylor@stri.co.uk
- Simon Watson, Syngenta - 01223 883400 - simon.watson@syngenta.com
- Emorsgate Seeds - 01553 829028 - www.wildseed.co.uk

