

Summary note on Ireland's bees

- In Ireland, there are 98 different species of bee. We have the familiar honeybee which is a managed pollinator, and then 97 wild bee species. These include 20 bumblebee species and 77 solitary bee species.
- In 2006 scientists published a Red List of Ireland's Bees. It showed that one third of our 97 wild bees are threatened with extinction in Ireland. Red Lists use an internationally accepted methodology developed by the IUCN to assess the conservation status of species.
- Research is now very clearly showing that to maintain pollination service you need healthy honeybees in combination with a diversity and abundance of wild bees. The problem can't be solved simply by increasing the number of honeybee hives.
- We have three very rare bumblebees, all threatened with extinction in Ireland. They are the Great yellow bumblebee, the Shril carder bee and the Red shanked carder bee.
- The Large carder bee is a beautiful blonde-haired bumblebee. It is doing well in Ireland but is considered vulnerable at the European level. It is important that we maintain the Irish populations as part of the declining global gene pool.
- The Tawny Mining bee is a very distinctive solitary bee with deep red hairs. It was considered extinct in Ireland for 87 years before being rediscovered in 2012.
- Bumblebees make their nests on the surface of the ground or just underneath, often in long grass, bracken, or at the base of a hedgerow. They generally have between 50-200 workers in a nest. Honeybee hives typically contain 50,000 bees, so bumblebee nests are very small in comparison.
- It has been calculated that in spring a queen bumblebee will need to visit up to 6000 flowers a day to get enough energy to maintain the heat needed to brood her first batch of eggs. It is a difficult time for bees, as the amount of spring flowers has drastically declined in Ireland. Autumn is also a difficult time for bumblebees as the new queens, once mated, need food to fatten up before going into hibernation for the winter.
- Bumblebees have a short life-cycle. Only the mated new queen hibernates over the winter to emerge in spring. The old queen, the female workers and the males all die off as the colder weather approaches.

- Solitary bees take one whole year to pass through a complete life cycle, and may only survive as adults for a few weeks. Males and females emerge from hibernation in spring through to summer, depending on the species and when their preferred flower type is available. After mating, the female prepares a nest, lays eggs in it, and leaves a food supply of pollen. Once this job is done, both the males and females die. The eggs hatch and the larvae eat the food left by the parent. They then overwinter in a cocoon, emerging as adults the following year.
- Solitary bees are often extremely efficient pollinators. Studies in apple orchards have shown that a single mason solitary bee can do the work of hundreds of honeybees.
- Some solitary bee species are tiny and look like flying ants, others have black and yellow striped bodies like wasps. Some are larger and hairier like bumblebees.
- Solitary species can be grouped by how they make their nests. Some species are cavity nesters and will nest in hollowed twigs or holes in wood or masonry. One coastal species, *Osmia aurulenta*, lives on sand dunes and will only nest in empty snail shells. Most solitary bees in Ireland are mining bees, and make their nests in bare ground or in south facing banks of stable soil, clay, sand or peat. Commercially available bee hotels/boxes target the small number (15 species) of cavity nesters in Ireland. Only 10 of these 15 species could realistically be found in a park/garden.
- Only the honeybee produces commercially extractable honey. Only female bees can sting, but many of the smaller solitary species wouldn't be able to pierce human skin.
- Bees see primary colours as blue, green and ultraviolet. They can distinguish yellow, orange, blue-green, violet, purple, as combinations of their three primary colours. They can't see red. To a bee, the ultraviolet radiation pattern on flowers is as important as the colour.
- The Irish Pollinator Initiative was set up by the National Biodiversity Data Centre in 2008 to drive pollinator conservation through better data. We train interested volunteers how to identify bees and more than 250 people now submit data on bees they see.
- We know that many of our bee species have become very rare. What we don't know is whether the abundance of our common species is changing. The All-Ireland Bumblebee Monitoring Scheme is a citizen science scheme that was set up by the National Biodiversity Data Centre in 2011 to begin collecting this data. It is a way of tracking how the abundance of wild pollinators is changing in the landscape. Interested members of the public get involved and are trained in bumblebee identification. They then walk a fixed 1-2km route once a month from March to October and record the numbers of each species of bumblebee that they see.

Further information on Ireland's bees:

<http://www.biodiversityireland.ie/projects/irish-pollinator-initiative/>