

CONSERVATION REQUIREMENTS FOR WILD BEES

- **Quantity of flowers** Abundance of the actual flowers is an important feature for habitat quality. Bees may need a lot of flowers. Some species may need 1000 flowers to raise one larvae. Kernowecology work has estimated 17,000 flowers are needed for a viable population of Long-horned Bee. This is where summer management has great potential to remove pollen and nectar resources utilised by bees by either cutting or grazing the flowers themselves.
- **Quality of flowering plants**- Rare bee species can be more specific in pollen collection. Some bees are specialised to a family. The Daisy (Composite), Legume and Umbellifer family each have specialist bee species. A smaller number of bees are specialised on single species such as the Large Scabious Bee and Tormentil Bee. Some plants have high protein content in their pollen particularly Legume family. These are important for larval or brood development for many of the bumblebees and some rare specialised solitary bees.
- **Continuity of forage**- Bumblebees need abundant forage over 2-3 months for a nest to succeed, with Bumble bee queens needing forage resources in spring and workers in summer. Solitary mining bees may need this continuity over 5 weeks, but even this may mean several plant species are needed.
- **Flower structure**- influences species diversity. Deep flowers such as mint family exclude certain species. Flat open flowers such as daisy family suit certain other species.
- **Forage distance**-“doorstep” foragers and small species forage close to the nest so abundant quality forage needs to be close or within 100-500m of suitable nest sites. Other species such as larger bees need landscape scale resources to sustain viable populations, such rarer bumblebees need kilometres of quality habitat, which is why the North coast of Cornwall is so important.
- **Nesting requirements**-Some solitary or mining bees species are aerial nesters in dead wood others ground nesting in friable soils such as cliff slopes, banks, micro cliffs, compacted paths. Some specific species need clay, others sandy soils. Solitary or mining bees need sheltered or often southerly aspect to nest sites. Bumblebees can use old mouse nests or constructions in tussocky grass/moss. Bumblebees may also have separate requirements for hibernation sites.
- **Clepto-parasites/parasitic species**-There are specific bee species which are social parasites on other bees. Like a Cuckoo their offspring uses the nest and pollen stores created by the host. The Nomad bees (*Nomada*) are host specific and occur where a suitable density of hosts is present. For these clepto parasites it is the host species habitat preferences that is usually the important factor. These can be very rare when the host species is a rare bee. Such as the Tormentil Nomad Bee.