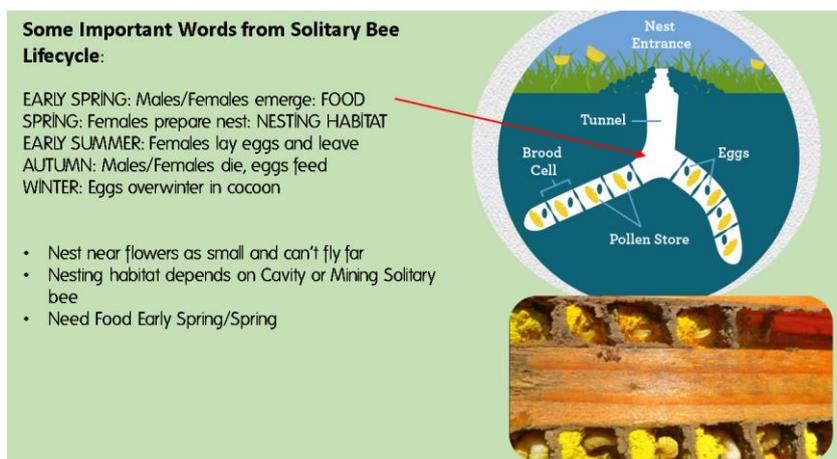


## Appendix VIII: How to make nesting spaces for Solitary Bees

Solitary bees represent the greatest number of bees in Ireland with 77 species of Solitary Bee and only 20 species of Bumble Bee. Many of these bees are in decline due to lack of food plants, suitable areas to have their nest and due to pesticide and herbicide use. Mining Solitary Bees mine into soil in south and east facing slopes and lay their eggs in these 'burrows'. Thus sloped soil banks facing east or south are very important habitats. The reason these solitary bees require a south or east facing slope is because they have very small bodies that need to warm up before emerging from their nest before they can fly. Their food source plants must be within 300m of their nest as they are too small to fly farther for food. Thus a wooden block with drilled holes for Solitary Bees should be within 300m of pollinator flowers.

Cavity living Solitary Bees lay their eggs in cavities formed by beetles, in holes in rock walls, in hollow stems, in crevices and any ready and suitable hole that is south or south east facing. The reason they require this orientation is because they are so small and in order to fly, they need to heat up before the emerge from the nest. Their small size also means they cannot fly far so the nest site needs to be within 300m of their food source.



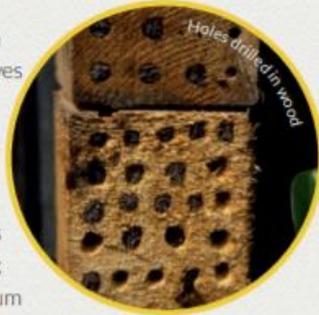
*Information about Solitary Bees (extract from presentation by M. Stack)*

There are certain requirements to making solitary bee nesting 'holes' in wooden blocks, such as length and depth of holes and height off the ground. Please use the following guide to follow best practice: <https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Nesting-2018-WEB.pdf>

### D. Drill holes for cavity nesting solitary bees

Solitary bees that like to nest in wooden structures often aren't strong enough to carve their own nests. You can help them by drilling holes in fence posts or other wooden structures.

1. Ensure wood is free from treatment or preservatives (no varnish, stain, paint); alternatively, attach untreated wood blocks to existing structures.
2. Using a drill, create holes in the wooden structure; they should be at minimum 10cm in depth and 4-8mm in diameter. Create holes of different diameters to attract different types of bees. Make sure not to drill through the structure. Try to drill with the grain to avoid cracks. The entrance holes should ideally face east or southeast, so they get the morning sun.
3. Holes should be as smooth inside as possible to attract nesting solitary bees. Use a countersinking drill bit or sandpaper to ensure the holes are splinter-free.
4. The holes should be as high up as possible, ideally 1.5-2m high.



*Best practice guide to making solitary bee wooden post nests (extract from <https://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-How-to-Guide-1-FINAL.pdf>)*