



CLEVE HILL SOLAR PARK

THE APPLICANT'S RESPONSES TO EXQ2 - APPENDICES

Appendix 6 – Buglife and Suffolk Wildlife Trust information on soil mounds

August 2019
Revision A

Document Reference: 12.1.7
Submitted: Deadline 4

www.clevehillsolar.com



CLEVE HILL
SOLAR PARK



Grassland management for invertebrates

Carefully managed grassland is capable of supporting a wide range of insects, which in turn support small mammals such as shrews and bats, and birds such as yellowhammers and song thrushes.

The grassland sites that tend to be more important for wildlife offer a variety of micro-habitats and enjoy a continuous system of management with no sudden changes.

Important features

The more an area of grassland has the following features, the more valuable it will be for invertebrates:

- Topographical variation – slopes, banks, ditches, hummocks, ant hills and even piles of rubble, with different aspects ensure structural diversity. These features will create wetter areas, over-wintering sites, warm and droughty areas – and different invertebrates will exploit the different micro-habitats within a varied site.
- Soil variation – the well-drained sandy and chalky soils tend to warm up more quickly and benefit a greater range of insects. These warm and crumbly soils are easy to burrow into, compared to the relatively cold and damp, heavier chalky boulder clay which is more likely to support insects that require damp ground for much of the year.
- Structural variation of the sward (and even better, an intimate mix in a relatively small area) – with a succession of different types from sun-baked bare ground to patchy scrub, including short open turf, tall grass and tussocks. Tussocks are especially important in creating a micro-habitat with a different micro-climate – providing nesting and over-wintering sites for some bumble bees, ground beetles and others, and food plants for caterpillars of moths and butterflies.
- Plant diversity and in all stages of development – i.e. plants flowering, setting seed and with last year's dead seed heads and stems remaining provide a continuous season of feeding, breeding and overwintering sites. Many invertebrates will only lay their eggs on one particular food plant. The larvae of the white butterflies feed on a range of cruciferous plants, whilst the blues and copper require more specific, and often rarer, larval food plants. The larvae of the various browns and skippers feed on relatively common grasses in hedge bottoms, and then depend on flower and shrub nectar as adults. Plant seed heads and hollow stems of plants such as yarrow, knapweed, burdock and thistles provide vital dry winter shelter and food for many insects

Suffolk Wildlife Trust Grassland management for invertebrates [online] *SuffolkWildlifeTrust.org*
[Viewed August 2019] Available: <https://www.suffolkwildlifetrust.org/conservationadvice/meadows-and-grassland/grassland-management-invertebrates>



Good planning practice for invertebrates: mitigation

Varied topography such as a variety of slopes, banks, ditches, hummocks and even piles of rubble, helps to create different niches with their own individual climate and aspect. Depending on their individual needs different invertebrates will be able to exploit the sunny south facing slope, wetter areas, over-wintering sites or warm and dry areas created by the changes in topography and aspect.

Bare ground is often overlooked as a feature but used by a range of insects for nesting, hunting and basking. This can be maintained by periodically disturbing the surface or placing low nutrient surface materials on south facing slopes and banks.

The type of soil or surface material is important, look for low nutrient surface materials and avoid top soil! Aim for dry, low nutrient substrate such as pulverised fuel ash, chalk or sand. This will warm up more quickly and be easy to burrow into. An innovative surfacing material is permeable pavement. Also look at re-using materials already on site such as sub soil, broken bricks, blast furnace slag, pulverised fuel ash or crushed concrete, as this will keep costs down.

Low growing wild flowers on disturbed ground are vital pollen and nectar sources for adult insects. The sparse vegetation will also not overshadow the ground, allowing it to warm up in the sun and be used by invertebrates for basking.

Grassy areas should include long grass, grassy tussocks and short grassy areas so there is vegetation of differing heights. This will provide food plants for caterpillars of moths and butterflies and places for some species to overwinter or nest.

Flower-rich areas can include flowering shrubs, wild flowers, grasses etc. and should create a source of food throughout the year for adults and larvae. Try to ensure that any specific food plant requirements for rare species are met. Ideally allow space for parts of the site to always have dead seed heads and stems for species to overwinter, along with areas of flowering plants for food or places to lay eggs. Small patches of ruderal species such as hogweed, thistles and ragwort are an easy win and are great food sources.

Buglife Good planning practice for invertebrates: mitigation [online] *Buglife.org.uk* [Viewed August 2019] Available: <https://www.buglife.org.uk/sites/default/files/Mitigation%20-%20Jun%2015.pdf>

<https://www.arc-trust.org/Handlers/Download.ashx?IDMF=ca8c7414-fb47-4a9a-8883-8ae97268d261>