Stiperstones NNR

A survey of the Aculeate Hymenoptera 2009

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SUMMARY

The survey was carried out between the months of May and August. A total of 6 visits were undertaken when weather conditions were suitably warm and sunny. It is at this time that aculeate hymenoptera are most active. This survey was undertaken after the two poor summers of 2007 and 2008 resulting in rather low numbers of insects. Despite this a total of **80 species** were recorded.

65 species - Aculeate Hymenoptera – bees, wasps and ants.
15 species - Lepidoptera – butterflies and moths.

2 species of aculeate recorded during the survey were of interest in a national context. *Andrena similis* (Nationally Scarce) and *Bombus monticola.*

2 species of butterfly recorded, Wall and Small Heath, are considered by Butterfly Conservation to be of High Priority and both are UK BAP Priority Species (for research only). In the West Midlands area the Wall is of special concern.

A number of common aculeate species recorded in similar habitats in Shropshire during previous surveys were not found but should be present. Further survey work will undoubtedly add to the results given in this report.

AIM

The aim of the survey was to provide baseline knowledge of the aculeate Hymenoptera fauna present on the site.

METHODOLOGY

The survey was carried out using sweep netting, casual recording and water trapping in areas considered of value to aculeates.

Time was spent searching around south facing banks and bare ground, piled dead-wood and among the many dead standing trees and cut stumps found around the site.

Floristically rich areas were searched regularly during the day so as to record any visiting aculeates and the leaves of trees and shrubs were swept to catch hunting solitary wasps.

Ten water traps were placed around the site and regularly visited to collect individual insects. Traps were moved to different locations as and when necessary.

To try and give a rating as to the importance of the site for aculeates, a system was used based on a national overview devised by Michael Archer. The system does not include social bees, social wasps and ants. BWARS Autumn Newsletter 2007.

The list of species recorded, including status, is given in the attached spreadsheet. The definitions for the six statuses are:

1. **Universal**. (value 1) – More than 70 10km squares, 1970 onwards, restricted and widespread areas and within the rest of England, Wales and Scotland.

2. **Widespread**. (value 2) – More than 70 10km squares, 1970 onwards, restricted area and within Midland lowlands and central coasts of England, lowland Wales, south-west Scotland, but excludes Northumbria, about three-quarters of England.

3. **Restricted**. (value 4) – More than 70 10km squares, 1970 onwards, within southern England, south-west and southern coast, about half of England, includes East Anglia.

4. **Scarce**. (value 8) – 31 to 70 10km squares, 1970 onwards

5. **Rare**. (value 16) – 16 to 30 10km squares, 1970 onwards

6. **Very Rare**. (value 32) – 1 to 15 10km squares, 1970 onwards

RESULTS

A total of 65 species of aculeate were recorded during the survey. Of these, *Andrena similis* and *Bombus monticola* are of national importance.

Andrena similis is a nationally scarce, ground nesting solitary bee associated with legumes. On the Stiperstones gorse is the main forage plant.

Bombus monticola is a declining upland species that was listed in the English Nature Species Recovery Programme. The species is closely associated with bilberry especially during nest foundation (April-May) but will also forage at clovers, trefoils and bramble. Recent research has shown that grassland sites are important as well as moorland/upland heath

The total number of species present for the amount of time put in to the survey corresponds well with other Shropshire sites and is similar to that found on the Long Mynd.

Using the Archer rating, Stiperstones has a value of **67**. This is similar to Long Mynd, but is relatively low when compared to lowland heath sites. The top Shropshire sites using the Archer rating are lowland heath /sand quarry sites with a value of approximately 170.

The variety of habitat present on the Stiperstones NNR, provides ideal nesting sites and foraging grounds for a variety of species, both specialist and non specialist alike.

Six of those recorded could be described as having a strong association with the heathland community and elsewhere in Shropshire are only recorded as breeding from this habitat.

Andrena lapponica
Andrena fuscipes
Colletes succinctus
Epeolus cruciger
Bombus monticola
Bombus jonellus

Of the 65 species recorded:

33 species are reliant on bare or sparsely vegetated ground in sunny situations. These areas provide suitable nesting sites and are also invaluable for basking and hunting for a variety of invertebrates. Nesting sites can be found in a variety of situations on the site, from the well trampled footpaths to the eroded banks and the vertical sides of cuttings and ruts.

11 species are associated with dead wood or broken/cut plant stems (especially bramble and elder). Fallen trees, standing dead wood, cut stumps and piled timber left in open sunny situations are the most suitable. Patches of bramble and elder in open, sunny situations amongst the scrubbed up areas are important sites to maintain.

1 species, the mud dauber wasp, *Ancistrocerus oviventris*, usually builds its nest on rocks and walls.

The remaining **20** species (social) are to be found nesting under stones, under bark and in longer grass/vegetation or old small mammal holes etc.

Nesting sites

The nesting sites available on the site are to be found in abundance, with the most important being bare/sparsely vegetated ground and the dead wood in stumps and trees.

Ground nesting species usually choose free draining soil in warm, sheltered situations with a southerly aspect. Certain species prefer to nest in flat ground in open situations while others utilise vertical banks and cuttings.

Dead wood used for nesting can be in the form of a complete dead tree or just the dead branch on a living specimen. Trees in sunny, sheltered situations are more commonly used. The large number of cut stumps, especially in the Gatten Plantation, provides a further important nesting resource.

Foraging and hunting grounds

The larvae of bees are fed on a mixture of nectar and pollen where as wasps require invertebrate prey.

For the bees with a strong association with the heathland the two most important plants are Bilberry and Heather. The other species present forage at a wide variety of flowers and are therefore not restricted to the heath for their survival. A suitable mix of forage plants are required through the season, a period lasting from mid March to the end of September.

The variety of invertebrate prey on the site provides good hunting opportunities for a number of wasps, both solitary and social. Hunting takes place over the open heath and around the sheltered woods and rides. Prey is captured on the ground, from flowers and the leaves of trees.

MANAGEMENT

1. It can be seen from the above information that a **mosaic of habitats** is necessary to provide suitable nesting sites and foraging/hunting grounds for the species present.

2. **Bare ground** should be looked on as a valuable nesting resource for aculeates.

3. It is important to note that a range of flowering plants are necessary to provide **nectar and pollen throughout the season** (which usually lasts from March to September) in order to maintain those species present. As upland heathland sites are generally botanically poor, **adjacent meadows** are extremely important in supporting the species present.

4. The management undertaken at present to maintain a healthy mosaic of Heather and Bilberry should continue.

5. Scattered scrub and woodland add an important nectar/pollen source to the site and also provide shelter and hunting grounds for solitary and social wasps. These habitats should be maintained as long as they do not threaten the integrity of the open heathland.

6. **Dead wood** in all states of decay should be maintained throughout the site.

7. The areas of bramble, which are often considered of little value, provide a very valuable nectar and pollen source for a variety of species and should be maintained. Cut stems of bramble exposed during routine management provide important nesting sites for solitary wasps and bees.

8. The continuation of grazing will help maintain structural and species diversity on the site as well as creating bare ground suitable for nesting.

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