

## Bees, wasps and ants of the ash landfill site at Devil's Dingle, Buildwas – an outstanding site of regional significance.

Nigel Jones and Ian Cheeseborough February 2013.

Buildwas ash waste site (mainly in monads SJ6305 & SJ6405) is an extensive 32 ha area where power station ash has been tipped. The site is now restored and contains grasslands, lagoons, woodland, scrub, open mosaic habitats and standing dead wood. Areas of open mosaic habitat, where the ash is exposed and mirrors conditions in fine sand, are particularly valuable for ground nesting bees and wasps, as too are small landslips in clay soils at the edges of the site.

The site has been surveyed almost weekly from late June – mid September 2013, with three other visits in April 2012, plus May 2012 and 2013. The list of aculeate Hymenoptera (bees, wasps and ants) stands at 148. This is an exceptional number of species in a Shropshire context. In a wider context, the number of species, combined with the conservation status of several species, makes this a regionally important site for aculeates. The site species list is likely to rise with further survey effort, as it has not yet been explored thoroughly in March – May, when many additional species are on the wing. Important species of aculeate recorded so far are:

*Auplopus carbonarius* A nationally scarce spider hunting wasp.

*Chrysis mediata* A ruby-tailed wasp that has undergone a significant decline nationally in recent years. A first record for Shropshire.

*Chrysura radians* – A Nationally Scarce ruby-tailed wasp that has become rarer in recent years.

*Eucera longicornis* – A Nationally Scarce long-horned bee that has declined in Britain. It is a UK BAP species.

*Monosapyga clavicornis* A Nationally Scarce cuckoo wasp: A cleptoparasite of aerial nesting bees in the genus *Chelostoma*.

*Nomada flavopicta* A Nationally Scarce cuckoo bee. It is a cleptoparasite of the scarce mining bee *Melitta haemorrhoidalis*, which by implication may also be present on site.

*Nysson dimidiatus* A Nationally Scarce cuckoo wasp; a cleptoparasite of the ground nesting wasp *Lindenius albilabris*.

*Osmia bicolor* A Nationally Scarce mason bee that uses empty snail shells, in which it makes its nests.

*Priocnemis confusor* A Nationally Scarce spider hunting wasp. A first Shropshire record.

*Priocnemis hyalinata* A Nationally Scarce spider hunting wasp.

*Sphecodes crassus* A Nationally Scarce cuckoo bee; a cleptoparasite of *Lasioglossum parvulum*.

*Spilomena beata* A tiny thrip hunting wasp. Nationally, it has declined in recent years, and is now considered scarce.

*Stelis ornatula* A rare cuckoo bee. It is a cleptoparasite of the uncommon bee *Hoplitis claviventris*.

*Stelis phaeoptera* A very rare cuckoo bee. It appears to have its national stronghold in Shropshire and Montgomeryshire. It is a cleptoparasite of the bee *Osmia leaiana*; an aerial nester, utilising standing dead wood.

*Tiphia femorata* A parasitic wasp. It attacks scarabaeid beetle larvae. It is considered to have declined nationally in recent years and is now scarce. First Shropshire record.

The full list of species can be found at Appendix 1.



**A few of the species recorded from Devil's Dingle.**

The parasitic wasp *Tiphia femorata* (female). It attacks scarabaeid beetle larvae.

Photo: Nigel Jones



The very rare cuckoo bee *Stelis phaeoptera*.

Photo: Nigel Jones



Left: A male long-horned bee *Eucera longicornis*. Several males and a female were found nesting in open mosaic habitat on steep banks at Devil's Dingle. This is a UK BAP Priority Species.

Photo: Rosemary Winnall.



Above: *Osmia bicolor*. Photo: Robin Williams.



Above: Exposed ash waste landfill. This provides excellent nesting opportunities for many species of ground nesting bees and wasps.



Landslips in firmer soils provide nesting opportunities for a different mix of species that nest in the ground.



Above: Extensive areas of natural grassland occur across the site. They provide an essential forage resource for bees and wasps. Taken together with the exposed soils, this produces an outstanding habitat for ground nesting (and aerial nesting) bees and wasps. The scale of the resource over an area of 32 ha is very rare in Shropshire.

The undisturbed nature of the site, where public access is very limited, permits a fallow deer herd to roam at will without disturbance, particularly from free running dogs. It appears that deer are maintaining a mix of open grassland and scrub through their grazing activity. It will be important to consider this free service in any plans for future management of Devil's Dingle.

### **Key Management Recommendations**

- Maintain open mosaic habitat by not seeding bare areas and by allowing slippage of soils wherever this can be tolerated.
- Ensure that grasslands with their important floral resource do not scrub over. This may most easily be achieved by keeping the site free of dogs and too much disturbance by visitors, so that fallow deer can continue to keep scrub in check through their grazing activities. Some manual scrub removal may from time to time be desirable.
- Retain dead wood, particularly standing dead wood. Consider creating opportunities for aerial nesting solitary bees and wasps by importing dead timber “posts” (drilled with holes up to 12mm maximum diameter and down to very small diameters) and placing them upright, around the site in sunny situations.

**Appendix 1: Full list of bees, wasps and ants recorded at Devil's Dingle.**

<i>Ancistrocerus gazella</i>	<i>Crabro cribrarius</i>
<i>Ancistrocerus nigricornis</i>	<i>Crabro peltarius</i>
<i>Ancistrocerus parietinus</i>	<i>Crossocerus cetratus</i>
<i>Ancistrocerus trifasciatus</i>	<i>Crossocerus distinguendus</i> <b>Nationally Scarce (widespread)</b>
<i>Andrena angustior</i>	<i>Crossocerus dimidiatus</i>
<i>Andrena bicolor</i>	<i>Crossocerus elongatulus</i>
<i>Andrena bimaculata</i> <b>Nationally Scarce (restricted)</b>	<i>Crossocerus megacephalus</i>
<i>Andrena carantonica</i>	<i>Crossocerus ovalis</i>
<i>Andrena chrysoseles</i>	<i>Crossocerus podagricus</i>
<i>Andrena cineraria</i>	<i>Crossocerus quadrimaculatus</i>
<i>Andrena clarkella</i>	<i>Crossocerus tarsatus</i>
<i>Andrena dorsata</i>	<i>Crossocerus varus</i>
<i>Andrena flavipes</i>	<i>Crossocerus wesmaeli</i>
<i>Andrena haemorrhhoa</i>	<i>Dipogon subintermedius</i>
<i>Andrena labialis</i>	<i>Dolichovespula saxonica</i>
<i>Andrena labiata</i> <b>Nationally Scarce (restricted)</b>	<i>Dolichovespula sylvestris</i>
<i>Andrena minutula</i>	<i>Ectemnius cavifrons</i>
<i>Andrena nigroaenea</i>	<i>Ectemnius continuus</i>
<i>Andrena nitida</i>	<i>Entomognathus brevis</i>
<i>Andrena ovatula</i>	<i>Eucera longicornis</i> <b>Nationally Scarce</b>
<i>Andrena subopaca</i>	<i>Evagetes crassicornis</i>
<i>Andrena wilkella</i>	<i>Formica fusca</i>
<i>Anoplius concinnus</i> (scarce)	<i>Gymnomerus laevipes</i> ( <b>scarce</b> )
<i>Anoplius nigerrimus</i>	<i>Halictus rubicundus</i>
<i>Anthidium manicatum</i>	<i>Halictus tumulorum</i>
<i>Anthophora plumipes</i>	<i>Hoplitis claviventris</i>
<i>Apis mellifera</i>	<i>Hylaeus brevicornis</i>
<i>Arachnospila anceps</i>	<i>Hylaeus communis</i>
<i>Arachnospila spissa</i>	<i>Hylaeus hyalinatus</i>
<i>Auplopus carbonarius</i> <b>Nationally Scarce</b>	<i>Hylaeus signatus</i> <b>Nationally Scarce (widespread)</b>
<i>Bethylus fuscicornis</i>	<i>Lasioglossum albipes</i>
<i>Bombus hortorum</i>	<i>Lasioglossum calceatum</i>
<i>Bombus hypnorum</i>	<i>Lasioglossum cupromicans</i>
<i>Bombus lapidarius</i>	<i>Lasioglossum fratellum</i>
<i>Bombus lucorum</i>	<i>Lasioglossum laevigatum</i>
<i>Bombus pascuorum</i>	<i>Lasioglossum lativentre</i>
<i>Bombus pratorum</i>	<i>Lasioglossum leucopus</i>
<i>Bombus rupestris</i> <b>Nationally Scarce (widespread)</b>	<i>Lasioglossum leucozonium</i>
<i>Bombus terrestris</i>	<i>Lasioglossum minutissimum</i>
<i>Bombus vestalis</i>	<i>Lasioglossum morio</i>
<i>Cerceris rybyensis</i>	<i>Lasioglossum parvulum</i>
<i>Lasioglossum malachurum</i> <b>Nationally Scarce (restricted)</b>	<i>Lasioglossum punctatissimum</i>
<i>Chelostoma florissomne</i>	<i>Lasioglossum villosulum</i>
<i>Chrysis mediata</i> ( <b>Significant decline nationally</b> )	<i>Lasius flavus</i>
<i>Chrysura radians</i> <b>Nationally Scarce (rare)</b>	<i>Lasius niger</i>

<i>Leptothorax acervorum</i>	<i>Stelis phaeoptera</i> <b>RDB2</b>
<i>Lindeniuss albilabris</i>	<i>Stigmus solskyi</i>
<i>Megachile centuncularis</i>	<i>Symmorphus gracilis</i>
<i>Megachile ligniseca</i>	<i>Tiphia femorata</i> ( <b>scarce</b> )
<i>Megachile versicolor</i>	<i>Tiphia minuta</i> <b>Nationally Scarce (widespread)</b>
<i>Mellinus arvensis</i>	<i>Trichrysis cyanea</i>
<i>Monosapyga clavicornis</i> <b>Nationally Scarce</b>	<i>Trypoxylon attenuatum</i>
<i>Myrmica rubra</i>	<i>Trypoxylon clavicorum</i>
<i>Myrmica scabrinodis</i>	<i>Vespa crabro</i>
<i>Myrmosa atra</i>	<i>Vespula germanica</i>
<i>Nomada fabriciana</i>	<i>Vespula vulgaris</i>
<i>Nomada flava</i>	
<i>Nomada flavoguttata</i>	
<i>Nomada flavopicta</i> <b>Nationally Scarce</b>	
<i>Nomada fulvicornis</i> <b>RDB3 (widespread)</b>	
<i>Nomada goodeniana</i>	
<i>Nomada lathburiana</i> <b>Nationally Scarce (widespread)</b>	
<i>Nomada marshamella</i>	
<i>Nomada striata</i>	
<i>Nysson dimidiatus</i> <b>Nationally Scarce</b>	
<i>Nysson trimaculatus</i> <b>Nationally Scarce (widespread)</b>	
<i>Odynerus spinipes</i>	
<i>Osmia bicolor</i> <b>Nationally Scarce</b>	
<i>Osmia bicornis</i>	
<i>Osmia caerulescens</i>	
<i>Osmia leiana</i>	
<i>Oxybelus uniglumis</i>	
<i>Passaloecus corniger</i>	
<i>Passaloecus gracilis</i>	
<i>Passaloecus singularis</i>	
<i>Pemphredon inornata</i>	
<i>Priocnemis confusor</i> <b>Nationally Scarce</b>	
<i>Priocnemis exaltata</i>	
<i>Priocnemis fennica</i>	
<i>Priocnemis hyalinata</i> <b>Nationally Scarce</b>	
<i>Priocnemis parvula</i>	
<i>Priocnemis perturbator</i>	
<i>Psenulus pallipes</i>	
<i>Pseudomalus auratus</i>	
<i>Sphecodes crassus</i> <b>Nationally Scarce</b>	
<i>Sphecodes ephippius</i>	
<i>Sphecodes geoffrellus</i>	
<i>Sphecodes gibbus</i>	
<i>Sphecodes monilicornis</i>	
<i>Sphecodes niger</i> <b>RDB3 (restricted)</b>	
<i>Spilomena beata</i> ( <b>scarce</b> )	
<i>Stelis ornatula</i> <b>RDB3</b>	

Note: Conservation statuses in **bold** are those designated by the JNCC. For aculeates these are now 22 years old. Since that time a number of species have undergone increases in range and or frequency, whilst others have declined. This has led Archer (2007 and 2011) to propose updated statuses and these are shown, where they apply, in brackets. For *Bombus rupestris* we have revised the status from Nationally Scarce to widespread based on personal knowledge.

References:

Archer, M. *Archer's Status Values for the Solitary Wasps and Bees. BWARS Newsletter – Autumn 2007.*

Archer, M. 2011. *Updating of solitary species status arising from recent publications of BWARS Newsletters. BWARS Newsletter – Autumn 2011.*