

Doros profuges (A hoverfly)



The hoverfly, Doros profuges
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This is a large hoverfly, the adult of which is a spectacular wasp-mimic. This species has no common English name and its scientific name has been officially changed in recent years from the one previously used (*Doros conopseus*).

It is widely distributed throughout temperate and southern Europe but is generally scarce becoming even rarer in the northern part of its range. It has a short flight period and perhaps for this reason is seldom seen even at sites where it is thought to be long-established. Many details of its life cycle remain to be confirmed but it appears to be reliant on one particular species of ant during its larval stage.

The larva of this Hoverfly is believed to live within nests of the ant *Lasius fuliginosus*. The precise relationship with the ants remains to be worked out. It is assumed that the larva must either feed upon the root aphids that have been herded by the ants or gain some other benefit from living within their nest.

Adults visit plants for nectar and are often seen on or near brambles.

Main Habitat(s): Calcareous grassland in the vicinity of woodland or scrub edge

National Status

Because it is seldom seen, *Doros profuges* has been regarded historically by entomologists as a great rarity. Most records are from the Weald and the North and South Downs. In the north of Britain it is much rarer and, apart from the Morecambe Bay area, there are only single records from Scotland and Ireland.

Recently, there are reports that the species has seemingly disappeared from some of its old strongholds in several southern English counties.

It is a UK BAP Priority Species and is classified in the British Red Data Book as 'Vulnerable'^(1, 3).

Regional Status

There have been occasional reports of this species from the South Lakes since the 1940s⁽⁶⁾.

Local Status

It was discovered in North Lancashire in 1993 at Thrang End and Yealand Hall Allotment SSSI. The species has been seen annually at this one site since then⁽⁷⁾.

Current factors affecting the species

Lack of knowledge about the ecology and distribution of *Doros profuges* is the major factor that prevents positive management for this species.

The favoured habitat for adult *D. profuges* appears to be the transition zone between woodland or scrub and calcareous grassland. Therefore, it is assumed that anything that diminishes this mosaic of habitats has the potential to be detrimental to the species.

Assuming that *Lasius fuliginosus* is indeed crucial to the lifecycle of *D. profuges*, factors that adversely affect the ant will likewise adversely affect the hoverfly. In Lancashire, the ant is near its northern British limit. It makes its summer nests in hollows in old tree stumps connected to subterranean winter retreats.

Many hoverflies closely resemble species of bees or wasps and there is evidence that some of them gain protection from predators through this resemblance (Batesian mimicry). *Doros profuges* has a most unusual shape for a hoverfly but its waisted abdomen makes it look somewhat like solitary wasps of the genera *Odynerus* and *Ancistrocerus*⁽⁸⁾. Another wasp that it resembles is *Argogorytes mystaceus* and some authorities consider this to be the model that is mimicked⁽¹⁰⁾. It is not known whether *Doros profuges* derives protection from these resemblances, however, it may be that the occurrence of these wasps in its habitat is an important factor in the hoverfly's survival.

Current Action / Mechanisms

The one known site for this species in Lancashire, Yealand Hall Allotment, is a SSSI. English Nature are currently negotiating a management agreement with the owners. There may be a need to provide details of particularly important parts of the site so that this can be taken into account, if necessary, in the management of the site.

There is no systematic monitoring of the site for *D. profuges* although local entomologists have reported new sightings to Fleetwood Museum since the species was discovered there by the Curator (Natural Sciences), Simon Hayhow. This discovery was reported in the Journal of the Lancashire and Cheshire Entomological Society⁽⁹⁾.

Objectives, targets and proposed actions for Doros profuges in Lancashire

Broad Objective:	A. Determine the local distribution of this species and establish monitoring systems			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Undertake survey work to determine the exact status of the species within Morecambe Bay area	1. Identify potential habitat on SSSIs and non statutory wildlife sites and survey these areas in 2001/2 for presence of species. (High)	EN, Museums, DF, L&CES	S	RM
	2. Repeat this survey in 2006 and subsequently every five years. (High)	EN, Museums, DF, L&CES	O	RM
2. Monitor occurrence of species at present site.	1. Monitor known site on annual basis from 2002 onwards (High)	EN, Fleetwood Museum, DF, L&CES	S	RM
	2. Set up local database to record sightings (High).	Fleetwood Museum, DF, L&CES	O	RM
	3. Encourage local entomologists to search for D. profuges in appropriate season. (High)	Fleetwood Museum, DF, L&CES	O	RM
Broad Objective:	B. Research ecology of species in order to inform management of sites.			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Review current knowledge/ research initiatives relating to this species at the national and local levels.	1. Liaise with national lead agency (To be agreed). (High)	EN	M	RM
	2. Review local/national literature (High)	Local Nats	M	RM
	3. Publish results in entomological press (Medium)	Local Nats	M	RM
2. Encourage research on a local site into relationship with ant host, nectar & microhabitat	1. Set up research programmes with local entomologists and university departments (High).	EN, Local Nats, FE/HE	L	RM

preferences of this species.				
Broad Objective:	C. Maintain population at existing site			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Ensure that the hoverfly's requirements are taken into account at Thrang End and Yealand Hall Allotment SSSI.	1. Periodically review management of the SSSI to check that practices conform to present state of knowledge regarding the conservation of Doros profuges. (High)	EN	O	LM
	2. Ensure managers are aware of key areas and microhabitats (High)	EN, Land-managers	S	A, LM
	3. Continue to work with owners and tenants of the site to achieve beneficial management. (High)	EN, Land-managers	S	A, LM
Broad Objective:	D. Promote Doros profuges as a flagship species in the Lancashire BAP			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Produce material aimed at the public that explains the importance of this hoverfly in the Morecambe Bay area.	1. Include information about the hoverfly in newsletters, site leaflets and interpretative material (Medium).	EN, MBP, AONB CMS	O	PR

Other Action Plans:

- Broadleaved and mixed woodland HAP
- Calcareous grassland HAP
- Limestone pavement HAP
- Wall mason bee SAP

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