

WBP Lowland Grassland and Heathland Ecosystem Group

Waxcap Fungi Workshop Notes

WBP Lowland Grassland and Heathland Ecosystem Group arranged a Waxcap Fungi workshop at Llanerchaeron National Trust site on Thursday 30th October. The workshop was well attended by members of LGHEG, LBAPs and wider partnerships. Attendees included Carmarthenshire LBAP, Powys LBAP, Snowdonia National Park Authority, National Trust, Coity Wallia Commons, Plantlife, RSBP Cymru, National Botanical Gardens Wales and Welsh Government.



Waxcap Fungi

Waxcaps (genus *Hygrocybe*) are the most distinctive and visible components of the grassland fungi. They are often brightly coloured with a waxy or slippery-looking cap which most commonly appears in grassland and lawns in late summer and autumn.

Waxcaps are found in grasslands that are generally nutrient-poor such as long established pastures, lawns, cemeteries and often can be found alongside other fungi. Other fungi associated with grasslands include Geoglossaceae (the earth tongues), Clavarioid species (fairy clubs) and Entolomatcaeeae (Pink Gills). Thought of collectively as the 'CHEG' taxa.

Importance

Waxcap grasslands are of global importance, particularly those in Wales. There are 27 (identified) important fungal areas in Wales, of which 14 are grassland sites. 7 have been notified as SSSIs based on their important grassland fungi features.

There are 5 grassland fungi notified as **S42 species**:

- Big Blue Pinkgill (*Entoloma blozarii*)
- Olive Earth-tongue (*Microglossum olivaceum*)
- Dark-purple Earthtongue (*Geoglossum atropurpureum*)
- Date-coloured waxcap (*Hygrocybe spadicea*)
- Violet Coral (*Clavaria zollingeri*)

Fungal assemblages are very important – a need for this to be recognised under NERC to give better protection.

DNA barcoding

Dr Gareth Griffiths is leading a REF funded project on 'Application of DNA barcoding for the conservation of Waxcap grasslands' <http://ukbars.defra.gov.uk/project/show/37543>.

DNA can be used to monitor grassland fungal populations by extracted from soil to identify fungal species presence. DNA barcoding enables all fungi present to be identified within the soil sample, regardless of fruiting bodies presence. This enables rapid assessment of Waxcap grassland sites. It does however require DNA of the fungi species to have been identified and is based on the locations where soil samples have been taken within the total grassland site.

Management

Grasslands rich in Waxcaps (and other fungi) assemblages tend to be old, long established grasslands which are susceptible to change. Threats include application of fertilisers, ploughing, cessation of management e.g. grazing, scrub encroachment, development, fungi being overlooked.

Management for grassland fungi includes:

- Avoid use of fertilisers, manure and herbicides
- Ensure free-drainage
- Retain permanent grassland
- Avoid activities that cause soil compaction
- Avoid stock feeding in sensitive areas
- Maintain grassland through livestock grazing/grass cropping
- Prevent the encroachment and establishment of trees and scrub
- For lawns, cemeteries & amenity grasslands – keep grass short with regular mowing, remove all cut grass, avoid use of pesticides, etc., do not re-seed or carry out other actions which significantly damage the soil structure or affect drainage

(Extracted from "Waxcaps and grassland fungi – a guide to identification and management" Plantlife, Sep 2014)

Identification

Key features to look out for are:

- **Colour** – of cap, stem & gills. Distinctive bright colours – red, yellow, oranges, pink, green, white, brown/buff coloured caps.
- **Cap size & shape** – is the cap pointed, domed/rounded, convex or flattened? E.g. *Hygrocybe calyptriformis* has a 'ballerina' shaped cap.



- **Gills** – look at the attachment of gills to the cap – barely attached? Broadly attached? Decurrent?
- **Texture of cap and stem** – fresh specimens can be slimy, sticky, moist or dry? Stem can appear smooth, feather-like scales or fibrillose (distinct parallel fibres) E.g. Scarlet Waxcaps have a smooth stem while Crimson Waxcaps have a fibrillose stem.
- **Smell** – a few have a distinct smell such as honey, cedar. E.g. Honey Waxcap smells of honey when rubbed.



The outdoor session took place on the lawn and grounds of Llanerchaeron House where a high assemblage of Waxcaps were found. Waxcaps found included Crimson, Scarlet, Golden, Glutinous, Honey, Meadow, Slimy, Snowy and Parrot Waxcap (See species list).

Recording Waxcaps

Use a plastic, partitioned box to collect fungi in the field. Photographs can be very useful – capture all features including the gills underneath. Put dry specimens in labelled paper bags/envelopes and dry on a radiator. Every few years, put specimens in the freezer to kill mites/weevils, etc.

Record your Waxcap sightings at your local record centre (www.lrcwales.org.uk), iSpot (www.ispotnature.org) or contact your local fungus group.



Local Fungus Groups

- **Pembrokeshire Fungus Recording Network** – www.pembsfungi.org.uk.
- **Gwent Fungus Group** (covering Monmouthshire VC35) - gwentfungusgroup@btinternet.com
- **Carmarthenshire Fungus Group** – www.carmarthenshirefungi.co.uk
- **North West Fungus Group** (Flintshire, Denbighshire, NW England) – <http://fungus.org.uk/nwfg.htm>
- **Glamorgan Fungus Group** – www.facebook.com/groups/GlamorganFungusGroup/
- **Swansea Fungus Group** (Swansea & Glamorgan) - <http://swanseafungi.blogspot.co.uk/2010/09/glamorgan-fungi-groupafan-argoed-foray.html>

Resources

“Waxcaps and grassland fungi – a guide to identification and management” pull-out guide, Plantlife, Sep 2014 (contact Dave Lamacraft – dave.lamacraft@plantlife.org.uk)

“An identification Guide to Waxcaps in West Wales”, Pembrokeshire fungal network (contact www.pembsfungi.org.uk)

“The Genus Hygrocybe”, David Boertmann, 2nd edition (2010) (Available here www.summerfieldbooks.com/the-genus-hygrocybe---revised-2nd-edition~2717)

“Plantlife Important Fungal Areas”, Plantlife (available from Dave while stocks last)

www.aber.ac.uk/waxcap - Waxcap work by Aberystwyth University, including information on identification, habitat, conservation/management, publications.

<http://www.first-nature.com/fungi/~hygrophoraceae.php>

www.britmycolsoc.org.uk – The British Mycological Society

www.abfg.org – Association of British Fungus Groups

Thanks to Dr Gareth Griffiths, Aberystwyth University and Dave Lamacraft, Plantlife.

Species List

Llanerchaeron Lawn

30th October 2014

Noted by Corrinne Manning and Penny David

- Crimson Waxcap (*Hygrocybe punicea*)
- Scarlet Waxcap (*Hygrocybe coccinea*)
- Golden Waxcap (*Hygrocybe chlorophana*)
- Glutinous Waxcap (*Hygrocybe glutinipes*)
- Honey Waxcap (*Hygrocybe reidii*)
- Meadow Waxcap (*Hygrocybe pratensis*)
- Slimy Waxcap (*Hygrocybe irrigate*)
- Snowy Waxcap (*Hygrocybe virginea*)
- Parrot Waxcap (*Hygrocybe psittacina*)

Additional grassland fungi (not waxcaps but important/useful grassland indicators):

- *Entoloma* spp.
- *Dermoloma* spp.
- *Cordyceps militaris*
- *Clavulina corniculata* (Meadow Coral)
- Fairy clubs – prob 2x *Clavaria* spp.
- *Cystoderma amianthinum* (Earthy Powercap)
- *Lepista nuda* (Blewitt)
- Various species of *Mycena*.