

## A History of Waxcap recording in Carmarthenshire

Many of you will have walked over sheep-grazed pastures and well established lawns and perhaps noticed some brightly coloured mushrooms growing amongst the different species. These colourful fungi belong to the genus *Hygrocybe* and are characterised by widely spaced thick and waxy gills on the underside of the cap. Many species are brightly coloured with some bright red (*H. coccinea*, *H. punicea*, *H. splendidissima*); yellow (*H. chlorophana*, *H. ceracea*, *H. citrovirens*); brown (*H. colemanniana*, *H. spadicea*); white (*H. virginea*) grey (*H. flavipes*) and even pink (*H. calyptriformis*) – see illustrations at the end of the article.

There are fifty-one species of *Hygrocybe* found in the UK - a total greater than in any other genus of grassland fungi. Because of this, grasslands that support these fungi are also known as “waxcap grasslands”.

In Northern Europe waxcap species are mainly found in unimproved/semi-improved natural grasslands on well-drained soil and in open habitats, such as fixed and semi-fixed dunes or alpine meadows. Ironically, woodland soils are not all that different from grassland soils so grasslands could be thought of as “treeless woodlands”. Indeed, outside Europe waxcaps are thought of as woodland fungi (Griffith et al. 2004) and many *Hygrocybe* species common to Britain are found in woodlands in the USA.

The European waxcap community is (with very few exceptions) associated with grassland systems. Their presence is dependant on very low nutrient levels allied with grazing by sheep, cattle or other livestock. This low nutrient level is critical because even the application of low amounts of organic or inorganic fertiliser will completely alter the fungal flora. Waxcaps are present within a wide variety of grassland types. These range from calcareous (National Vegetation Classification CG1 and CG2), mesotrophic (MG5 and MG6) through to acidic grasslands (U4 and U5).

Some *Hygrocybe* species are confined to wet heaths/bogs but the unifying factor with all the most species rich waxcap grasslands is they are all associated with well-drained soils. This is why sand dunes, maritime cliff vegetation and sloping neutral grassland sites all support important waxcap sites and why marshy grassland is practically devoid of any waxcap species.

For many years it was thought that more “ancient” grasslands with a rich diversity of flowering plants would also support high waxcap diversity. However, survey work carried out by the late Maurice Rotheroe (who championed the cause of waxcap fungi in the UK and Europe) in the 1990’s showed that there was no correlation between waxcap diversity and sites with high plant diversity. In fact, higher waxcap diversity most often occurred in semi-improved and botanically mundane grasslands (those not considered for SSSI selection), a phenomenon subsequently shown by recent researchers as well.

The importance of these waxcap grasslands has only been recognised since the late 1980’s. Dr Eef Arnolds in the Netherlands pioneered much of this work in Europe and he estimated that there were only about 200 hectares of this type of habitat remaining in that country. In these early years, the degree of importance of sites was based on the number of different waxcap species found at that site over time or during a single visit. Further research however recognised that “other” grassland fungi were important in the ecology of such systems. These included species from other genera of fungi and included four main taxonomic groups: *Clavariaceae* (fairy clubs), *Entolomataceae* (pink gills) and *Geoglossaceae* (earth tongues). The acronym coined by Maurice Rotheroe for this group of fungi plus *Hygrocybe* is the “CHEG” fungi (which is derived from the first letter of each group). This system has again been revised recently to include another group of grassland fungi (*Dermoloma* and others denoted by “D”).

Thus modern studies evaluate the importance of a site using the CHEGD score rather than a score for waxcaps alone. To complicate matters further, species within the CHEGD group are now ranked into different categories in an attempt to refine the system to take into account the less common species (Griffith et al. 2006).

To date, the study of these tremendously important fungal communities within the UK has been slow. Surveys have been carried out in Scotland, Ireland and parts of England (see Griffith et al. 2004) and it is only now that conservation organisations are showing an interest in waxcaps. Maurice Rotheroe, following on from his classic studies into the importance of fungi in sand dunes systems (where waxcaps formed important associates of dune grasslands) instigated specific waxcap surveys within Wales. He was one of the first to realise the importance of “religious sites” (cemeteries, graveyards

etc.), historic estate grasslands and their lawns for waxcap fungi. Indeed, the lawn at Llanerchaeron (owned by the National Trust in Ceredigion) is only 0.2 hectare in size but supports over 25 waxcap species. Maurice advocated that the Llanerchaeron site was of National Importance for its grassland fungi and should be protected by legislation but unfortunately, at the time, the government agency responsible for conservation in Wales (CCW) refused to notify the site as a SSSI.

Identification of waxcap fungi is difficult but the emergence of the waxcap community as a new study group resulted in the publication of a book by David Boertmann in 1996 titled *The Genus Hygrocybe*. The book contains keys, photographs and descriptions of all the waxcap species and enabled mycologists to target this group much more easily than before because all the relevant information was in one-place and species descriptions were accurate and up to date.

One of the first people to record waxcaps in Carmarthenshire was Dr Philip Jones. He led many fungus forays within the county that included grassland sites rich in waxcaps such as Carreg Cennen and the Pal y Cwrt area of Mynydd Du (Black Mountain). The records from these sites were part of an overall species list for that day which included many different habitats but it was Maurice Rotheroe and his wife Penny who carried out the first targeted survey for waxcaps in the county in the 1990's.

The Countryside Council for Wales (CCW) commissioned this survey. Local staff (RNS, IKM) was interested to find out if waxcap diversity was correlated with specific types of grassland communities as identified by their NVC communities. SSSI's were chosen for this exercise because detailed vegetation maps identifying NVC communities were available for these sites. A wide range of vegetation types was surveyed. The findings were surprising. There was no correlation between NVC community types and the diversity of waxcap fungi present.

One of sites Maurice and his wife Penny surveyed in 1990 was Waun-Las meadow at the National Botanic Garden for Wales at Middleton. Although this grassland is not of SSSI quality for its higher plant communities at least twenty-two species of *Hygrocybe* have been recorded from this site (Evans & Holden 2003).

The next major survey of waxcaps within the county was carried out in the autumn of 2000 and was due more to accident than design. This was the period during the Foot and Mouth crisis when access to the countryside was severely restricted. As mentioned earlier, waxcaps have been recorded from religious sites. Cemeteries and graveyards have traditionally been known to be "islands of nature conservation interest" with regards other species e.g. lichens; and the lack of intensive management also allows a diversity of flowering plants to develop. Many of these sites have not received regular applications of fertiliser and most are usually just mown at regular intervals for aesthetic reasons. Thus the time of the Foot and Mouth crisis enabled us to visit these sites without compromising bio-security and evaluate them for their grassland fungi.

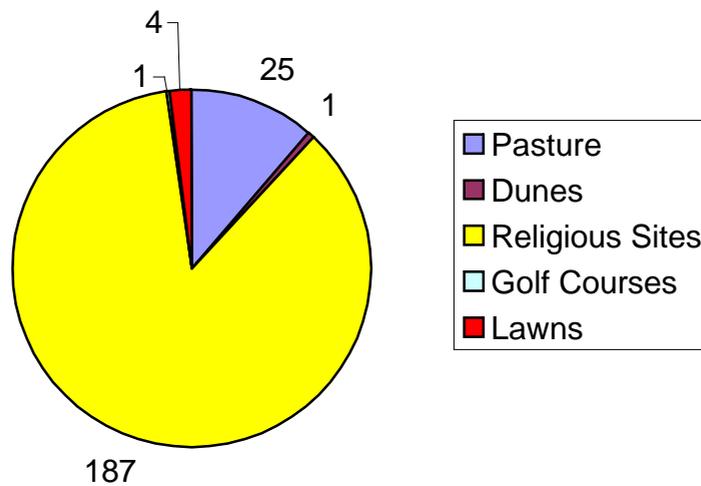
Only waxcap (*Hygrocybe*) species were recorded for this survey. It was decided not to record the other members of the CHEGD community (fairy clubs, pink gills and earth tongues etc.) because these are difficult groups requiring specialist techniques and help for accurate identification. However, many researchers have shown that the recording of waxcaps alone does give an indication of the quality of grassland for conservation purposes and that this method is a good technique to use for a preliminary survey.

A total of two hundred and eight sites were chosen which included public amenity sites as well as religious holdings (Figure 1).

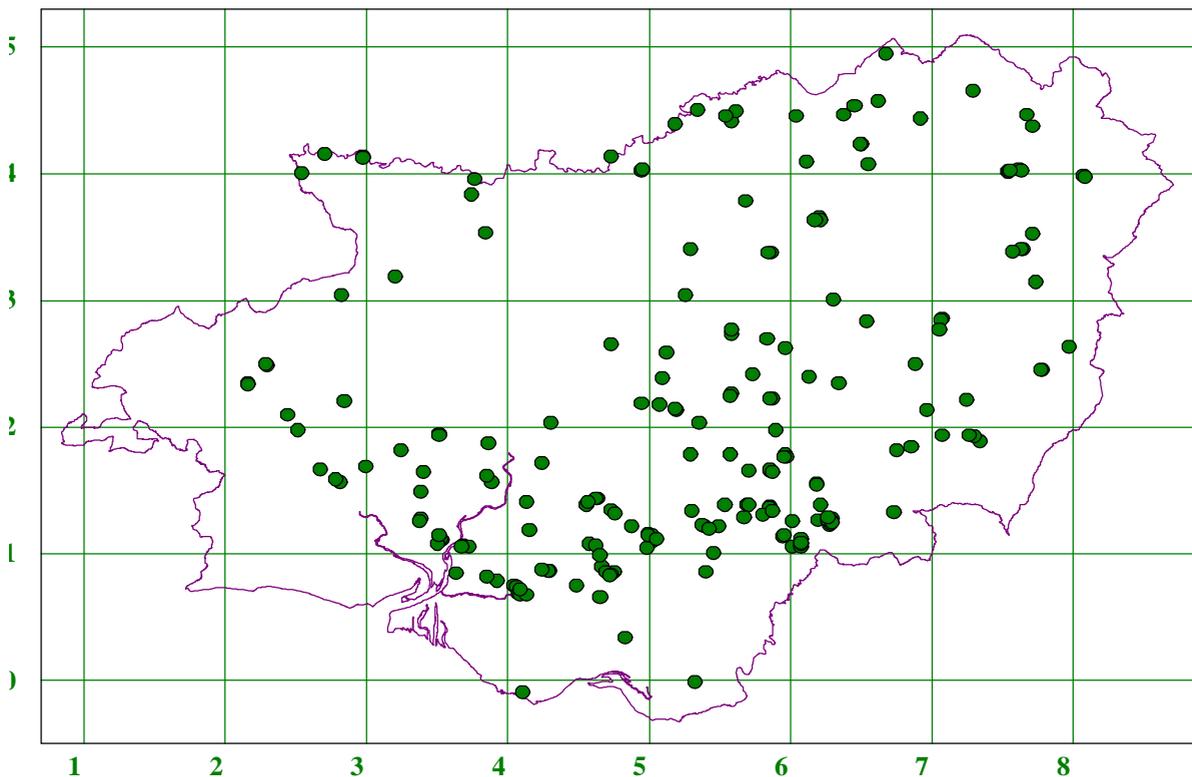
The greatest proportion of sites was cemeteries and churchyards (Figure 1). It is estimated that there are over 400 of these sites in total throughout the county. The 187 sites surveyed (roughly 50% of the total) were spread throughout the county but the majority were concentrated in or near urban settlements. Nearly all the pastures surveyed were within the Brecon Beacons National Park (BBNP) in the Mynydd Du area. Only one golf course (Llandovery College) and one sand dune habitat (Pembrey Burrows) was visited as part of the survey. Carreg Cennen Common was included as one of the pastures. All the lawns visited were "residential"; historic lawns were inaccessible during the time period of the survey. A record was also taken of sites where there was a complete absence of waxcap fungi as these would be useful base line records should these sites be revisited in the future. The distribution of sites visited within the county is shown in Figure 2.

A brief description of the habitat and the management of each site were also noted. The survey was carried out between 2<sup>nd</sup> October and 13th November 2000.

**Figure 1 Habitats visited for the Waxcap Survey**



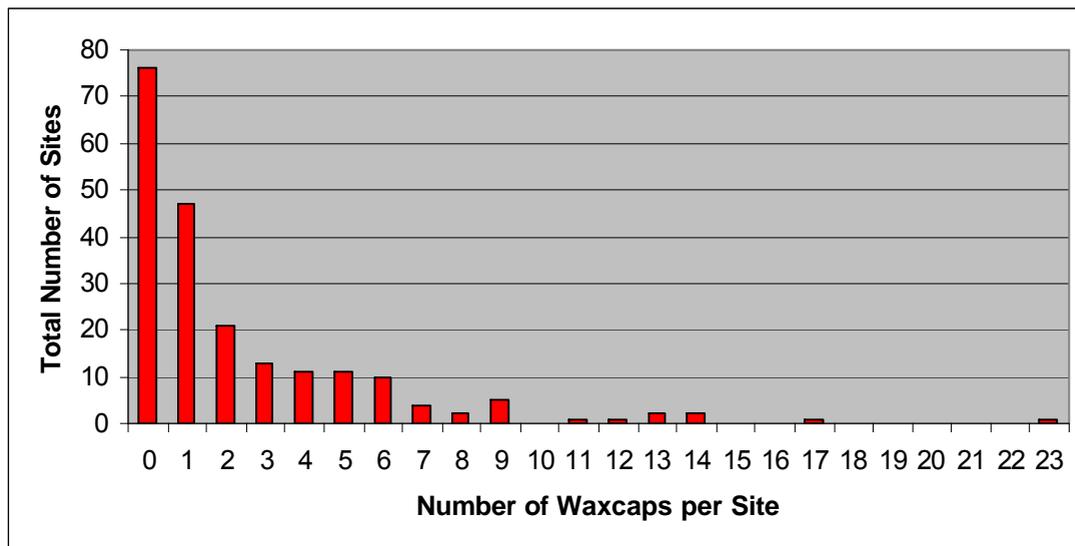
**Figure 2 Sites visited in Carmarthenshire**



The findings of the survey were quite interesting. Of the two hundred and eight sites visited seventy-four did not support any waxcap fungi (Figure 3). All of these sites were religious sites (mainly land around churches or chapels) and in many, the land around the building had been replaced with tar macadam or gravel to allow vehicular parking and/or easier maintenance.

Some of these (chapels in highly populated urban areas e.g. Ammanford) were confined

Figure 3 The number of Sites with differing numbers of waxcap species present.



for space and there was little room between the graves for vegetation to develop. Two chapel cemeteries (Rhehoboth near Five Roads and Capel Newydd Llanelli) were totally devoid of any wildlife because their graveyards had been sprayed with weed killer. The most neglected cemetery was that of Old Road, Llanelli where access was impossible due to the entire site being overgrown by bramble.

However, the cemetery at Five Roads and quite a few chapel holdings in the Capel Hendre /Tycroes /Cwmgwili area proved to be quite a surprise. The grassed areas were unimproved, floristically very diverse, and kept short by regular mowing. However, there was a complete absence of waxcaps. The vegetation at these sites was classic unimproved marshy grassland, the quality of which was of SSSI standard with meadow thistle (*Cirsium dissectum*) in abundance. These sites were presumably too wet to support waxcap fungi. Indeed, at some of the Capel Hendre sites on “sloping” ground where unimproved grassland on the drier slopes merged into wet marshy grassland on the lower there was a distinct line of fruit body demarcation where this change occurred.

At some sites (again mostly confined to the urban areas) the vegetation around the chapel had been cut very very short resulting in a sward dominated by daisy (*Bellis perennis*). Either very few or a very low diversity of waxcaps were recorded at these sites.

As seen from figure 3 a very large number of sites supported six waxcap species or less. Those sites, which supported a greater number, were predominantly the larger pastures in the BBNP, although there were important exceptions. A high number of species were recorded in Pisgah Chapel, Bancffosfelin (13), Eglwys yr Efengyliaidd Penygroes (9 species), Rhos Chapel north of Cwmduad (9 species) and St Anne’s Church at Cwmffrwd (12 species).

However, the upland sites were the most diverse for waxcaps. Several “units” were visited within the Mynydd Du SSSI including Pal y Cwrt (most notable for its calcicolous flowering plant assemblages). The areas visited were the base rich neutral grasslands overlying carboniferous limestone. The whole area is (under normal circumstances) intensively grazed by sheep, which results in a very short turf. These conditions plus the fact that the soils are very well drained are ideal conditions for waxcaps. Seventeen species were recorded at Tro'r Gwch but the highest number was recorded at Pal y Cwrt where twenty-three species were found.

The diversity of waxcap species is also of note. Of the fifty-one species of waxcap present in the UK, thirty-four have been recorded in Carmarthenshire (Table 1)

Table 1 The number of Sites where *Hygrocybe* species were recorded

Species	No. of Sites	Species	No. of Sites
<i>Hygrocybe aurantiosplendens</i>	2	<i>H. laeta</i>	13
<i>H. calciphila</i>	1	<i>H. mucronella</i>	6
<i>H. calyptriformis</i>	35	<i>H. ovina</i>	1
<i>H. ceracea</i>	26	<i>H. persistens</i> var. <i>persistens</i>	4
<i>H. chlorophana</i>	60	<i>H. pratensis</i>	52
<i>H. citrinovirens</i>	1	<i>H. pratensis</i> var. <i>pallida</i>	19
<i>H. coccinea</i>	38	<i>H. psittacina</i>	36
<i>H. colemanniana</i>	20	<i>H. psittacina</i> var. <i>perplexa</i>	3
<i>H. conica</i> var. <i>conica</i>	48	<i>H. punicea</i>	18
<i>H. conica</i> var. <i>conicoides</i>	1	<i>H. quieta</i>	20
<i>H. flavipes</i>	6	<i>H. reidii</i>	23
<i>H. fornicata</i>	6	<i>H. russocoriacea</i>	9
<i>H. glutinipes</i>	1	<i>H. spadicea</i>	1
<i>H. ingrata</i>	1	<i>H. splendidissima</i>	3
<i>H. insipida</i>	10	<i>H. vitellina</i>	1
<i>H. intermedia</i>	3	<i>H. virginea</i> var. <i>ochraceopallida</i>	38
<i>H. irrigata</i>	6	<i>H. virginea</i> var. <i>virginea</i>	1

The most frequently recorded species found during the survey were *H. chlorophana* (60 sites), *H. conica* (48), *H. pratensis* (52), *H. coccinea* (38) and *H. psittacina* (36) (Table 1). Single occurrences were recorded for *H. calciphila*, *citrinovirens*, *glutinipes*, *ingrata*, *ovina*, *spadicea* and *vitellina*. *H. calyptriformis* was recorded at 35 sites.

The results of this survey did highlight the importance of some sites in the county for their individual waxcap species. At most of the religious sites waxcaps were absent or low number of species recorded. Even sites with low waxcap diversity were interesting. The cemetery of Tabernacle Church, Pontyates was notable for the abundance of hundreds of bright red fruiting bodies of *H. coccinea*. Also, at Llanybri the most abundant waxcap was *H. calyptriformis*, even though there were not many other species present. In general, the churches and chapels in the more rural areas tended to be more interesting for their waxcaps and it was these sites that had a more interesting higher plant interest as well. Churchyards at Llandyfaelog, Nantgaredig, Brechfa and Talley whilst not being the best sites for waxcaps would be worth visiting for their diversity in other species.

However, the highest numbers (=>9) of waxcaps recorded at religious sites were from Piscah, Eglwys yr Efengyliaidd, Rhos and St Anne's. Considering the small size of these holdings these sites can be considered to be of considerable conservation value within the county.

So, how does the quality of sites in Carmarthenshire compare with other sites in Wales and the UK?

Firstly, it must be understood that great care must be taken when comparing data from other sources. The appearance of waxcap fruiting bodies can vary between years and even within the season. Also, the more visits made to a site the more species are likely to be recorded.

Waxcap recording from other parts of Wales has been rather limited. At the same time as the Carmarthenshire survey was carried out colleagues' surveyed similar habitats in the Brecon Beacons National Park, Monmouthshire, Powys and Ceredigion. Although the surveys in these areas were

biased towards the recording of waxcaps in pastures about 90 churchyards were also visited. The results of these churchyard surveys very closely reflected the findings in Carmarthenshire. About 30% of the churchyards visited did not support any waxcaps (compared to 36% in Carms.) and around 30% of the sites only supported one or two species (the same as in Carms.). Very few churchyards had more than six species (7 sites compared to 22 in Carms.).

During the last few years, David Harries and his colleagues in the Pembrokeshire Fungus Recording Group have been recording waxcaps in Pembrokeshire. Although in the early stages of the project their results are very interesting. Already they have recorded five cemeteries with seventeen or more waxcaps present, which is very encouraging.

Very few religious sites have been surveyed in the recent past. The main focus of attention has been the recording of sheep grazed pastures. The Countryside Council for Wales (CCW) commissioned two reports, one in 2003 by Shelley Evans and Liz Holden (desktop study) and another in 2006 by Dr Gareth Griffith of UCW Aberystwyth. He and his workers recorded waxcaps in different types of grasslands across Wales, the latter study adopting rigorous sampling methods and statistical analysis of the results. All the sites they chose were large grassland areas whereas the 2000 survey in Carmarthenshire only included two (in the Mynydd Du).

Nevertheless, addition useful information can be gleaned from these recent surveys. Dr Griffith showed that the most commonly recorded waxcap species found during his quantitative survey were *H. pratensis*, *chlorophana*, *psittacina*, *conica* and *coccinea*; the species found to be recorded most frequently from the much smaller churchyard sites in Carmarthenshire. Some species are less common than others. *Hygrocybe spadicea* is very rare throughout Wales but was found once at Pal y Cwrt. Another waxcap - *Hygrocybe aurantia* was first found in Britain in 1969 in Kent and subsequently from Dunwich Forest in 1987 but Philip Jones recorded this species from Pembrey Forest in 1980.

However, the main finding of all these waxcap surveys is that sites can now be assessed in terms of their Conservation Status. Many different types of scoring systems have been submitted in the past on how best to evaluate the importance of a site (see Griffith et al. 2006) but it is generally accepted that sites can be assessed using solely waxcap species. If the total number of waxcaps recorded from a site (following more than one visit) is greater than seventeen species then the site is of National Importance. If greater than twenty-two then it is of International Importance. Sites with between four and eight species are of Local Importance.

Dr Griffith has collated grassland fungi data from all over the UK and has ranked the top thirty sites using a range of scoring systems presently used across the UK and Europe. The top two sites are Mynydd Epynt, Powys (which supports 33 waxcap species) and Trawscoed, Bala (which supports 31 species). Fourteen sites out of the top thirty are in Wales. The large upland sites in Carmarthenshire (Pal y Cwrt and Tro'r Gwch) are placed equal eleventh in the UK ranking. European sites are not of the quality of the top UK sites. The UK sites are considered to be the best examples of waxcap grasslands on any continent found to date and should be given the conservation status that they deserve. Pressure on Government Organisations to protect these sites is entirely due to the activity of Maurice Rotheroe. His campaigning resulted in these agencies accepting the importance of such sites in a UK context and developing guidelines allowing the statutory notification of these sites.

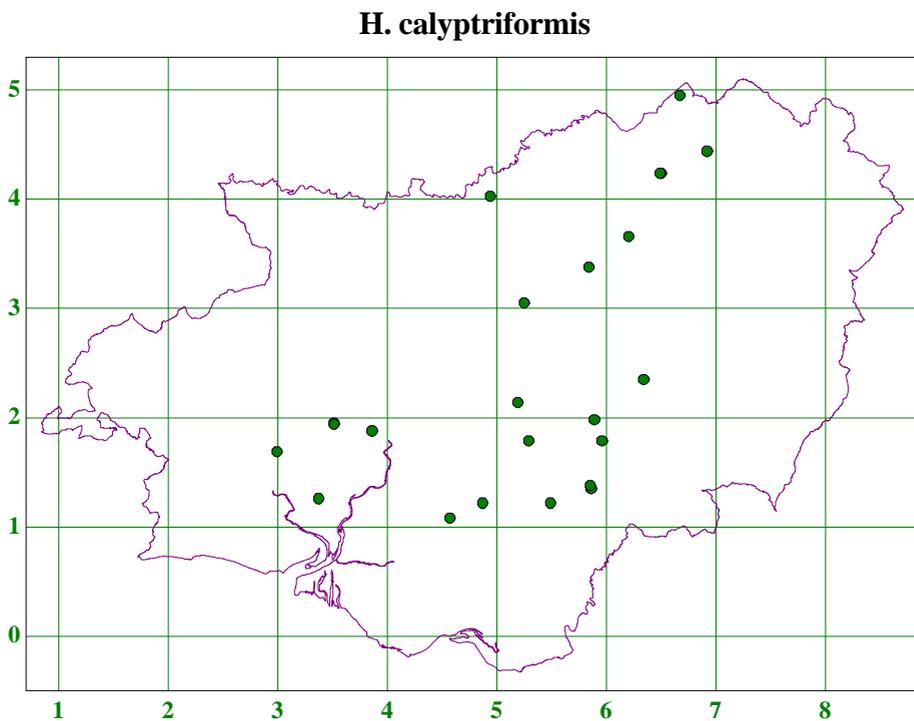
However, still only a handful of sites within the UK have been notified as SSSI's. These include Llanishen Reservoir site in east Wales and Bryneithinog in north Wales. Waun-las meadows at the NBGW is part of a NNR but the CCW decided not to notify the site as a SSSI even though it clearly qualifies on mycological criteria alone with 22 species of *Hygrocybe*. Thirty-eight sites within Carmarthenshire support between four and eight waxcaps and are therefore considered to be of Local Conservation Importance.

Whilst most of the sites in the county were only visited once, more frequent monitoring might highlight the greater importance of a site. For example, in 2000, only six waxcap species were recorded from Abergorlech churchyard but following subsequent visits by Sam Bosanquet the count now stands at twenty, making it the most important churchyard site in the county.

Unfortunately, fungal communities are not classified in the same way as higher plant or lichen communities and therefore conservation (protection) is based on individual species and not species associations. Both *H. calyptriformis* and *H. spadicea* were listed as UK BAP species in 1999. When the list was drawn up the former was only recorded from a very small number of sites in the UK. Its inclusion as a BAP species at the time promoted further surveys targeting this species and as a result the total number of records for the UK now stands at over 1200 (Fungal Records Database for Britain

and Ireland- FRDBI). Records for Wales have significantly increased from below ten to over 350 (Griffith et al. 2006) and there are twenty-five sites supporting this species in Carmarthenshire (Figure 4).

Figure 4 Distribution of *H. calyptriformis* in Carmarthenshire



Because it has been shown that *H. calyptriformis* is now more common than originally thought it will be removed from the list as used as a “flagship” species.

*H. spadicea*, however, does warrant its inclusion as a BAP species. To date, around 50 records are listed in the FRDBI and this species has not been recorded that often in Wales (>20). It has been found once at Pal y Cwrt (calcareous grassland) but interestingly has been found up on the Epynt ranges (acidic grassland) by Ray Woods on many occasions and also occurs at Somerton Farm Pembrokeshire (mesotrophic grassland) owned by David and Holly Harries (Holly used to be the Conservation Officer for the Dyfed Wildlife Trust). There is quite an extensive area of unimproved neutral grassland on this holding and apart from a diverse waxcap community (twenty four species) David has been recording other important groups of grassland fungi, some of which are new Welsh records.

The importance of these non-waxcap fungi (such as *Entoloma* species) is only now being recognised. Some of these are difficult to identify both in the field and/or using microscopic methods but with the emergence of DNA fingerprinting there is now a better understanding of taxonomic relationships between species and genera that will ultimately make identification easier.

And finally, - what is being done to conserve these grasslands?

Clearly Government Organisations are not carrying out their statutory obligations by not notifying these sites and there is very little feedback on the success of Agri-Environment schemes on the conservation of fungi. Indeed, in an attempt to guide these organisations to target important mycological sites Plantlife (a charitable organisation) published a document titled “Important Fungus Areas” which listed all the important sites for fungi in the UK. Fifty-eight sites were identified in Wales and twenty percent of these sites were within Carmarthenshire. Important waxcap sites were included in this total but very little notice has been taken of this document.

The emergence of the UK BAP process has indeed been of benefit in that priority species have been targeted for further survey work and we now have a much better idea of their distribution across the UK. As to whether the implementation of Local Biodiversity Plans has benefited conservation of fungi is debatable and largely depends on the quality of staff appointed by Unitary Authorities in being able to motivate people and organisations to implement conservation measures.

Much therefore depends on the voluntary sector. An excellent example of this is seen with the Pembrokeshire Fungus Recording Group organised by David Harries. David manages a herd of Dexter cattle on his smallholding that has a large acreage of unimproved neutral grassland. Over the years David and his group have not only been recording grassland fungi on his holding and throughout the county but have promoted the role of fungi through local community networks. Links with local businesses, Pembrokeshire Coast National Park Authority and Pembrokeshire County Council have resulted in direct action on the ground to promote and conserve grassland fungi. Jane Hodges (PCNP) and Trevor Theobald (PCC) are key to the success of this project.

Because the group has been so successful their work has attracted the attention of Dr Eef Arnold of the Netherlands who is the leading European authority on grassland fungi. Dr Arnolds has held weekend courses on grassland fungi and assists members of the group with the recording and identification of difficult taxa.

Clearly, not only is there still a lot to learn about the distribution patterns of grassland fungi but also their role in our grassland ecosystems. Dr Gareth Griffith and his team of research students are presently involved in investigating this fungal/soil/plant host interaction at UCW Aberystwyth. It is hoped that the cooperation between amateur mycologists and academic researchers will lead to a better understanding of the role of these fungi and their conservation needs.

The author acknowledges all those who participated in the recording of grassland fungi in the county over the last two decades - Philip Jones in the early years and Sarah Andrews, Mathew Steadman-Jones, Sam Bosanquet, Graham Motley, Ray Woods, Ian Morgan who helped with the 2000 survey.

Over recent years Shelley Evans, Dr Gareth Griffith and Debbie Evans have concentrated on detailed recording of our best sites. Thanks also go to David Harries who not only supplied most of the photographs but was a valuable source of technical information. He, together with Philip Jones made valuable comments on this article before submission. Thanks also to Graham Motley who supplied the Pal y Cwrt photograph and for carrying out so much survey work on the Mynydd Du and collating all the waxcap data.

However, none of this work would have been possible if it wasn't for the skills and talent of the late Maurice Rotheroe whose pioneering work on grassland fungi in Carmarthenshire was used as a model not only throughout the UK but Europe as well. This article is dedicated to Maurice who was so tragically taken from us so soon.

R. Nigel Stringer

### References

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- Griffith, G.W., Bratton, J.H. & G Easton. (2004). Charismatic megafungi; the conservation of waxcap grasslands. British Wildlife October 31-43
- Griffith, G.W., Aron, C, Evans, D.A., Evans, S., Graham, A., Holden, L. & D. Mitchel. (2006). Mycological survey of selected semi-natural grasslands in Wales. CCW Report FC 73-01-403

### Recommended Reading

Boertmann, D. (1996). The genus *Hygrocybe*. pp184 (has been revised in )

### Recommended websites

[www.aber.ac.uk/waxcap](http://www.aber.ac.uk/waxcap) - Dr Gareth Griffith's excellent website on waxcaps

[www.pembsfungi.org.uk](http://www.pembsfungi.org.uk) - David Harries's website on Pembrokeshire fungi. Bimonthly electronic newsletter available on request. This again is an excellent website.

[www.ccw.gov.uk](http://www.ccw.gov.uk) - useful contact details for local office. Staff will provide advice on identification of fungi and also advise on suitable grassland management for conservation of fungi.

[www.carmarthenshirebiodiversity.co.uk](http://www.carmarthenshirebiodiversity.co.uk) - useful website for advice on LBAP processes and protection of species and habitats against development pressures.

### Recommended Sites to visit.

Abergorlech Church	SN584337
Banc Wernwgan, Mynydd Du	SN685184
Brest Cwm Llwyd, Mynydd Du	SN707193
Capel y Graig, Trelech	SN282304
Carreg Cennen Castle	SN668192
Carreg Sawdde Common	SN7027
Eglwys yr Efengyliaidd, Penygroes	SN586134
Foel Fawr, Mynydd Du	SN734188
Pal y Cwrt, Mynydd Du	SN6718
Pisgah Chapel, Bancffosfelen	SN487121
Ramoth Chapel Cemetery, Cwm Felin Mynach	SN228249
Rhos Chapel	SN384353
St Anne's Church, Cwmffrwd	SN424171
Tro'r Gwcw, Mynydd Du	SN7219
Waun-Las NNR, Botanic Garden Middleton	SN529178

### Photo gallery

Maurice Rotheroe (1934-2005) [pictured far right], who did so much to further conservation of fungi, (especially waxcap and grassland fungi) throughout the UK. (Photo provided by his wife Penny David).



Examples of Waxcap Fungi found in Carmarthenshire



*Hygrocybe splendidissima*



*Hygrocybe coccinea*



*Hygrocybe ceracea*



*Hygrocybe chlorophana*



*Hygrocybe pratensis*



*Hygrocybe virginea*



*Hygrocybe calyptiformis*



*Hygrocybe spadicea* (UK BAP)



Waxcap Enthusiasts !



A good waxcap site, short turf, diverse ground flora

Pal y Cwrt (part of the Mynydd Du SSSI) in the distance – a Nationally Important site for Waxcaps



