

The Lost and Found Fungi project update, July-November 2016

Brian Douglas and Paul Cannon

Hi all,

After a fairly slow start to the year (not that we weren't busy!) records, specimens, and fieldwork began to flood in, to the extent that it's been difficult to find time to write these updates. In an effort to keep reports timely, short, but also full of information, we'll be restructuring the LAFF reporting system to show records, surveys and developments on the website over the coming months. All LAFF information will then be able to be seen as soon as data are compiled. For example, new records can now be seen from our homepage, or a direct link [here](#). As previously, records can also be found via our online map and vice county pages.

We've been working on making project data more accessible to you (the stakeholders), via the project website <http://fungi.myspecies.info/content/lost-found-fungi-project>. As described in previous reports, we've put together an interactive mapping system for the project using free-to-use tools from Google, which can be used:

- to give an overview of the distribution patterns of the whole set of target species (see [here](#))
- to provide summary information for each vice-county (see [here](#))
- to show species likely to be fruiting each month (see [here](#))
- species found in particular habitats (see e.g. [here](#))

All of these are updated in real time as we receive new reports, so if you send us details of your finds you should see new dots on the map very rapidly. You should be able to download data from the online spreadsheet OK, but if you need help or data reformatted, please send a message to Lukas at l.large@kew.org.

We have also been very active in providing project news using Facebook and Twitter, and our audiences have been building steadily. If you use these social media (or would like to try them out) you can find out more about our Facebook profile at <https://en-gb.facebook.com/lostandfoundfungiUK/> and our Twitter account can be found here - <https://twitter.com/lostfoundfungi>. In addition to news of finds from our Top 100 target species, you will find requests and reminders to search for species, and news of other interesting fungi and lichens that we've been sent. These media attract a quite different audience to our more traditional supporters, and have helped considerably in giving the project a higher profile outside of the core foraging community. As always, we're immensely grateful to all of you for sending news and helping to build up a more detailed profile of our species.

We recently submitted a second year report of our project to the Esmée Fairbairn Foundation, and we're pleased to say our funding partners remain very supportive of all that's been going on. During the first year, our focus was primarily on building up profiles of the target species to give you the ammunition to start

searching. In the second year, much more emphasis has been placed on assistance to the local groups that are involved in the project, teaching people first-hand and mentoring them to improve their ID skills. More on this below. In year three, we plan to carry on this work, so email Brian if you'd like us to help with surveys, run workshops etc. We'll do our best to help out.

We are also introducing a limited “community sequencing support” component to the project, for those that would like to benefit. Brian will be setting up a sequencing pipeline at Kew this month to help confirm identification of rarely recorded, cryptic or poorly understood fungi. While the primary focus will remain on the LAFF target species and equally rare and interesting “bycatch”, we would also like to enable groups to get involved in what is often seen as the more academic side of mycology – DNA-based identification and taxonomy. Both are very important in producing biologically meaningful conservation assessments, and it would be great to help bridge the gap between field recording and more formal scientific work. We'd be really glad to help groups develop their own local projects, which could include species of local significance, fungi newly recognized to the region, possibly undescribed taxa, and so on. Given the amount of interesting bycatch, mystery fungi, and taxonomic questions we've already received in the project, we feel there's definitely a demand for this in Britain, and we'd love to help everyone get involved in whatever capacity they feel comfortable.

One option will be to send us samples to sequence – do please discuss with us beforehand to confirm that the work falls within the project remit, and to receive advice on how best to preserve and send the collections. We will also be happy to send you FTA cards for capturing DNA from fresh specimens – these are cards impregnated with chemicals that prevent DNA degradation. As you will see from this Youtube video – <https://www.youtube.com/watch?v=Gir56iYspTE> – they don't require special talents beyond the skill to avoid hitting your thumb with a hammer...

We also plan to carry out further trials of the Bento Lab (see <https://www.bento.bio/>). David Harries and the Pembrokeshire Fungus Recording Network have already tried out a prototype last year, with very impressive results (they're pictured on the Bento Lab [website](#), and you can read about their molecular adventures in this PFRN [newsletter](#)). We'd like to see if we can reproduce this success in a few other groups. We think that the Bento Labs could be a great resource for the more adventurous fungus groups, allowing amateurs to become directly involved with DNA-assisted fungal identification, taxonomy, and conservation. Please email Brian at b.douglas@kew.org if you or your group would like to know more about these plans.

Since release of the last project update, we have been kept busy with email correspondence, confirming your new finds, taxonomic support, and helping with survey work. We've received over 200 records in this time, comprising 33 species from our Top 100 Target list (from 40 vice counties of Britain), most of which were previously known from only a few sites. This has increased our project running totals to over 520 new records, comprising 52 of our 100 species, in many cases from new sites. These records comprise around 1/6 of all recorded finds of these species in Britain (of which we are aware), although this figure is biased by some of the more common taxa of conservation concern, and will be much higher for the majority of our target species. Over the whole project we have also received over 110 voucher specimens of our target

species, all of which are invaluable reference collections of some of our most rarely recorded British mycota. Added to this is a respectable amount of bycatch (other rarely recorded or very poorly known species) either submitted by volunteers or collected during fieldwork. Enormous thanks and appreciation is due to everyone who has been involved in any aspect of the project so far – all of this progress is due to you!

Highlights we've been directly involved with include:

- Surveys in Norfolk (hosted by the Norfolk Fungus Group), and Glamorgan (with members of the Glamorgan Fungus Group, Natural Resources Wales and other volunteers) in which we learnt much more about the distribution of [*Puccinia cladii*](#) (great fen sedge rust). This work was then followed by surveys and finds by volunteers in Anglesey, Caernarvonshire and East Kent. Together, everyone involved has increased current known localities from one (at the start of the project) to eleven, across six Watsonian vice counties in England and Wales.
- Visits to Threepwood Moss, Murder Moss and Gordon Moss, all in the Scottish Borders, to survey newly found populations of [*Hypocreopsis lichenoides*](#) (willow gloves) (thanks to support from Ron McBeath, the [Fungus Group of South East Scotland](#), and the Scottish Borders Bryophyte Group). We now know of two extant British populations of willow gloves, both with what seem to be healthy, dynamic populations. A visit to Murder Moss also increased our knowledge of the distribution of [*Armillaria ectypa*](#) (marsh honey fungus) at this site, and the discovery of the first Scottish population of [*Bovista paludosa*](#) (fen puffball).
- Surveying Cumbria for [*Geastrum marginatum*](#) (tiny earthstar) and *G. schmidelii* (dwarf earthstar) in Cumbria's dune systems, as well as other LAFF species in other habitats, with members of the North West Fungus Group, local volunteers and Natural England/Wildlife Trust staff. This has allowed us to significantly increase our knowledge of some of our target species, as well as producing some very interesting bycatch which will be detailed in future reports.
- Surveying one of the two British sites for [*Encoelia carpini*](#) with members of the Sussex Fungus Group and the Gatwick Biodiversity Partnership.
- Surveying [*Bovista pusilla*](#) and *Tulostoma* species in the sand dunes of South Wales with the Glamorgan Fungus Group.
- Visits to Stackpole and other sites in Pembrokeshire with the Pembrokeshire Fungus Recording Network, including sightings of [*Geoglossum \(Microglossum\) atropurpureum*](#), [*Entoloma bloxamii*](#) s.l., [*Lichenochora epifulgens*](#), [*Perenniporia ochroleuca*](#), and [*Bovista pusilla*](#).

In the past, many records of rare species have been single chance findings, and for some of our target species that still appears to be how they are initially found. However, some volunteers and contributors have been following up previous finds with more extensive targeted survey work in the surrounding areas, or where there is suitable hosts and habitat. These sorts of surveys can completely change our understanding of a species' abundance and distribution in Britain, especially when a species is only currently known from single records at only a few sites. Highlights over the past few months included detailed surveys for:

- [Anthracoidea limosa](#) (by [Stewart Taylor](#); and [Paul Smith and the BSBI Outer Hebrides recording group](#); and [Anthracoidea pulicaris](#) (by [Stewart Taylor](#)). Please click on the hyperlinked names to see several blog posts on these finds.
- [Hypoxylon fuscoides](#) (Mark Steer and Emma Williams – see p.12 of the [Gwent-Glamorgan Recorders' Autumn newsletter](#) produced by SEWBRcC).
- [Lasiobotrys lonicerae](#) (Murdo Macdonald and members of the Highland Biodiversity Recording Group – mentioned in their 5 Aug update [here](#)).
- [Puccinastrum goodyerae](#) (now known to be widespread and abundant in Findhorn, thanks to Heather Paul).
- [Urocystis primulicola](#) (a survey of Ingleborough NNR by Colin Newlands and volunteers).
- [Uromyces gentianae](#) (two new sites found and surveyed thanks to Alison Lindsay).

A further project output is the separation of the very rarely recorded [Hohenbuehelia culmicola](#) (marram oyster) into two distinct and morphologically very different species: *H. culmicola*, and the new species to science [H. bonii](#). You can read about this work and the new species in [Field Mycology, 3\(17\), 78-86](#).

Enormous thanks again to everyone who has sent in records, or who has gone out looking for our target species - every single record, or unsuccessful survey, is important, and adds to our knowledge of these fungi. Each LAFF species also has its own little story which deserves telling, so more detailed reports will be coming soon... But until then, you can see some images of the more notable surveys and finds in the montage overleaf.

Best regards,

The Lost and Found Fungi project team:

Brian Douglas, Lukas Large, Martyn Ainsworth and Paul Cannon

For more information, please contact Dr. Brian Douglas
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 Email: b.douglas@kew.org
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A: LAFF survey at Sandscale Haws NNR, Cumbria. **B:** LAFF survey at Kenfig NNR, Glamorgan. **C:** Survey for *Encoelia carpini* with members of the Sussex Fungus Group and the Gatwick Biodiversity Partnership. **D:** Survey for *Puccinia cladii* with the Norfolk Fungus Group. **E:** Survey for *Puccinia cladii* in Glamorgan. **F:** Mike Bright explaining how to distinguish *Bovista pusilla* from rabbit droppings, inset image © Mike Bright. **G:** *Gastrum marginatum* from Sandscale Haws, Cumbria. **H:** *Entoloma madidum* from Stackpole, Pembrokeshire, found by David Harries. **I:** *Battarrea phalloides* from Suffolk, kindly shown to us by Neil Mahler of the Suffolk Fungus Group. **J:** *Hypocreopsis lichenoides*, surveyed with the Fungus Group of South East Scotland and the Scottish Borders Bryophyte Group. **K & L:** *Bovista paludosa* and *Armillaria ectypa*, surveyed with Ron McBeath at Murder Moss, Roxburghshire, Scottish Borders. Images CC BY-NC-SA by B. Douglas and L. Large except where stated.