A47 Wansford to Sutton Dualling

Scheme Number: TR010039

Volume 6
6.3 Environmental Statement Appendices
Appendix 8.2 – Fungi Survey Report

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

July 2021

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

A47 Wansford to Sutton Development Consent Order 202[x]

ENVIRONMENTAL STATEMENT APPENDICES
Appendix 8.2 - Fungi Survey Report

Regulation Number:	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010039
Application Document Reference	TR010039/APP/6.3
BIM Document Reference	HE551494-GTY-EBD-000-RP-LB-30020
Author:	A47 Wansford to Sutton Project Team, Highways England

Version	Date	Status of Version
Rev 0	July 2021	Application Issue

Table of contents

1. Introduction

1.1.1. A qualified fungi surveyor was commissioned by Sweco, on behalf of Highways England, to carry out fungi surveys along the proposed route of widening of the A47 at Wansford (Cambridgeshire) in order to assess any adverse impacts on protected, rare or scarce species or notable assemblages such as waxcaps where the individual species may not be rare but the assemblage indicates good quality, undisturbed and unfertilised grassland.

1.1.2. The survey took place on the 22 October 2020 undertaken by Ms Melanie Penson and assisted by Beth Mell. This is within the optimal period for fungi surveys. Ms Melanie Penson has gained fungi survey experience since 2000 and has carried out fungi surveys professionally on behalf of Local Authorities and Ecological Consultancies, principally of grassland sites, since 2004; specialising in waxcaps, earthtongues and associated grassland fungi. In addition, Ms Melanie Penson is a member of the Nottinghamshire Fungi Group. Ms Melanie Penson has recently changed her name and was a member of the Chartered Institute of Ecology and Environmental Management (CIEEM) from 2008 – 2019.

1.1.3. Many fungi scientific names have changed over the years DNA analysis has been carried out, clarifying family relationships. Scientific names used in this report follow Buczacki, Shields and Ovenden; *Collins Fungi Guide* 2012 as the most up to date source available. Several fungi do not have accepted common names.

2. Survey methodology and limitations

2.1.1. Where access allowed all areas of semi-natural habitat were searched for fungi within a 50m corridor of the proposed widening route.

2.1.2. A large percentage of the habitat within the survey area was intensively managed arable farmland which is repeatedly ploughed and heavily fertilised with inorganic fertilisers, especially nitrates and phosphates. This is inimical to the development of diverse fungal assemblages and typically, only opportunistic and abundant species can be found in such habitats.

2.1.3. Likewise, heavily fertilised grassland within public open spaces and “improved” grassland typically support very few, abundant and widespread species of no conservation significance.

2.1.4. The author was not familiar with the Site at Wansford so all areas of woodland were targeted for fungi irrespective of age and species composition until a value judgement on habitat quality could be made on the ground. Surveyed areas are provided in Annex A, in addition to the CHEGD scores. The vast majority of the woodland at Wansford had been planted on what had previously been intensively managed and fertilised farmland and also contained a significant proportion of non-native tree species.

2.1.5. All suitable semi-natural grassland areas were searched for waxcap fungi and associated grassland species such as earth-tongues, brittle-gills, coral and club fungi that are indicative of good quality grassland. Waxcap grassland is a UK Biodiversity Priority habitat and is likely to be an especially scarce resource in predominantly arable landscapes in lowland England. Suitable grassland sites included the area containing Roman archaeology at Sacrewell Farm and areas of grassland that had previously been deemed of botanical interest. However, a diverse suite of vascular plants typical of unimproved swards does not necessarily mean that a diverse fungal assemblage is also present as much depends on sward structure, past management and grazing regimes amongst others.

2.1.6. These grassland sites were assessed under so-called CHEGD criteria; this is a system that has been developed to allow rapid assessment of waxcap grassland (Rald, 1985).

2.1.7. The acronym CHEGD refers to the first letters of the five fungi species groups involved: C refers to Clavaroids (clubs, spindles and corals); Hygrocybe (waxcaps), Entoloma (pink-gills), Geoglossum (earth tongues) and Dermoloma (crazed caps).

2.1.8. This use of fungi is a useful measure as it is simple to use and, as amended by Vesterholt (1999) (in Wood and Dunkelman, 2017); the importance of a site can be gauged as follows:

- 22 or more waxcap species = internationally important
- 17 to 21 species = nationally important
- nine to 16 species = regionally important
- four to eight species = locally important
- three or fewer species = not important

2.1.9. It must be remembered that a single survey on one date will not record all of the species present and the survey results only provide a “snapshot in time”. However, the assemblage that has been recorded can be used as a value judgement on the likelihood of rarer species or significant assemblages being present or not, and to indicate the requirement for further surveys if required.

2.1.10. With fungi, there will be individuals that cannot be identified in the field as there are so many close relatives that look similar: samples were collected for further examination, using a microscope if necessary. Many species do not remain readily identifiable for long and some particularly elderly waxcaps within the grassland at Sacrewell were beyond identification. It was impossible to discern whether these were additional species to those recorded or were other species. In this case, the CHEGD score at Sacrewell is best regarded as a minimum.

2.1.11. It is considered that surveys of the waxcap grassland earlier and later in the season could well yield additional species.

2.1.12. None of the grass road verges in the survey area were sampled. This is due to health and safety reasons but also as they only supported coarse grasses and ruderal herbs indicative of a high degree of nutrient enrichment, both from fertiliser run-off and diffuse sources such as air pollution. These verges were deemed unsuitable for fungi other than opportunistic abundant species.

3. Survey results

3.1.1. Habitats and species results will be assessed in turn from west to east within the survey area. There were a few fungi species that were especially abundant and present in all areas surveyed. These are abundant nationally and to avoid undue repetition are listed here: Lilac bonnet *Mycena pura*, clustered tough-shank *Collybia confluens*, grooved bonnet *Mycena polygramma*, common stump brittlestem *Psathyrella piluliformis*, Sulphur tuft *Hyphaloma fasciculare*, brick tuft *H. Lateritium*, turkey-tail *Coriolus versicolor* and a butt-rot causing fungus found on coniferous trees *Heterobasidion annosum* in virtually all the areas of plantation woodland containing conifers.

3.1.2. The majority of the woodlands within the survey area at Wansford are relatively recent plantations consisting of a mix of native and exotic species. Secondary woodland has developed along the dismantled railway line although even this has elements of plantation woodland.

3.2. Sacrewell Estate

3.2.1. The woodland within the Sacrewell Estate supported only common and widespread fungi. Over and above the ubiquitous species found in similar habitats listed above; other species comprised false deathcap *Amanita citrina var alba*, weeping widow, turkey-tail, deer-shield *Cervinus pluteus*, fragrant funnel *Clitocybe fragrans*, clustered toughshank and artist's fungus *Ganoderma applanatum.* The latter was growing on a dead stump near the mill pond. Raspberry slime-mould *Tubifera ferruginosa* was also recorded. Slime-moulds are no longer considered as fungi but are classified with the Protist Kingdom, which includes amoebae.

3.2.2. By contrast, waxcap grassland was found immediately to the south of Windgate Way at the northern end of the survey area at Sacrewell. This coincides with an area containing a former Roman building. Here, the grassland is dominated by fine-leaved grass species (fescues *Festuca sp.* and bents *Agrostis sp.*) and has a diverse vascular plant assemblage. It does not appear to have been ploughed or otherwise disturbed, nor does it appear to have been subjected to inorganic fertiliser.

3.2.3. Three species of waxcap were found and one pink-gill species: golden waxcap *Hygrocybe chlorophana*, conical blackening waxcap *H conica* and scarlet waxcap *H punicea* and also lilac pink-gill *Entoloma porphyrophaeum*. This gives a CHEGD score of Four (Local Importance). As previously stated, it is considered probable that other waxcap and related grassland species are also present and the current CHEGD score must be interpreted as a minimum.

3.3. Railway cutting at Heath House

3.3.1. This site comprises secondary woodland, scrub and the abandoned railway buildings and platform.

3.3.2. Only common woodland species were recorded, comprising jelly-ear *Auricularia auricula-judea*, verdigris agaric *Stropharia aeruginosa*, oyster mushroom *Pleurotes ostreatus* and the ubiquitous species.

3.3.3. The section of former railway south of the A47 included some more mature trees, including several large pedunculate oaks *Quercus robur*, considerably older than the woodland that surrounded them. Beefsteak fungus *Fistulina hepatica* was found growing on one of these large oak trees. Other fungi included some of those found on the north side of the road plus common inkcap, yellow stainer, shaggy parasol *Macrolepiota rhacodes* and hairy curtain-crust.

3.3.4. The resupinate fungus Oak porecrust *Peniophora quercina* was found on dead fallen oak branches.

3.4. Plantation woodland east of Heath House

3.4.1. No fungi were found in the young plantation woodland bordering the north side of the A47.

3.5. SSSI grassland north of Heath House

3.5.1. A section of this grassland was examined on the day of the survey and only a few fruit bodies of meadow waxcap could be found giving a CHEGD score of One. Whilst this grassland is rich in vascular plant species typical of limestone (clustered bellflower *Campanula glomerata* and woolly thistle *Cirsium eriophorum* were recorded); the tussocky nature of the grassland represents a closed community with little opportunity for grassland fungi to produce fruit bodies through the thatch of dead grasses.

3.6. Former Wansford rest area

3.6.1. Much of this area is scrub and tall ruderal vegetation, the western end has been re-landscaped and is dominated by vascular plants typical of disturbed ground. Only two fungus species were recorded in this area: parasol and glistening inkcap *Coprinus micaceus*. The nature of these habitats indicates that only ubiquitous and opportunistic fungi species would be present.

3.7. Grassland north of the River Nene, Sutton

3.7.1. A long, thin strip of grassland on the north bank of the River Nene was examined for grassland fungi. This area had three mature oak trees in the centre and an area of mature planted poplar hybrids (*Populus* sp.) at the east end. The only fungus species found here was common inkcap.

3.8. Woodland adjacent to Nene Way, Sutton

3.8.1. These comprised two blocks of relatively recent plantation woodland to the west and north-east of Nene Way. Only ubiquitous fungi species were found in the western block, no fungi at all in the eastern block.

4. Conclusions and recommendations

4.1.1. The only fungal assemblage of any value is the waxcap grassland associated with the Roman archaeological site at Sacrewell which has been assessed of at least Local Importance for grassland fungi. It is remarkable that this has survived in a much-altered, predominantly arable landscape and despite inorganic fertiliser use on adjacent land.

4.1.2. It is understood that this area would remain unaffected directly by the Proposed Scheme and that it also receives protection under archaeological legislation.

4.1.3. It is recommended that, if necessary, this area of important grassland is demarcated to prevent vehicles from traversing it and that no materials are stored on it or in close proximity.

4.1.4. As this assemblage has persisted in proximity to both the A1 and A47 for decades, it seems reasonable to assume that those fungi that remain are, at least to some degree, tolerant of atmospheric nitrogen deposition. Any very sensitive waxcap species are considered likely to have vanished long ago.

4.1.5. Concerning the other habitats within the Wansford survey area; no constraints are anticipated as only common and widespread fungi species were recorded. The habitats do not appear to be conducive to supporting any notable species or assemblages.

4.1.6. Although raspberry slime mould appears to have a restricted distribution in the UK, this is not a rare species nationally (Ing, 1999), all slime moulds are grossly under recorded.

5. References

5.1.1. Boertman, D. (2010). The Genus Hygrocybe (Fungi of Northern Europe volume 1), second edition. The Danish Mycological Society, Copenhagen.

5.1.2. Buczacki, S., Shields, C. & Ovenden, D. (2012). Collins Fungi Guide, Harpur-Collins, London.

5.1.3. Ing, B (1999). The Myxomycetes of Britain and Ireland, an identification handbook. Richmond Publishing, Slough.

5.1.4. Pegler, D.N., Laessoe, T. & Spooner, B. M. (1995). British Puffballs, Earthstars and Stinkhorns. Royal Botanic Gardens, Kew, London.

5.1.5. Philips, R. (2006). Mushrooms. Macmillan, London.

5.1.6. Wood, E. & Dunkelman, J. (2017). Grassland Fungi, a field guide. Monmouthshire Meadows Group, Monmouth.

Annex A. Surveyed areas and CHEGD scores

Sacrewell Estate

Sacrewell Estate - Waxcap grassland

Sacrewell Estate

Sacrewell Estate

Former Wansford rest area

SSSI grassland north of Heath House

Railway cutting at heath house

Grassland north of the River Nene, Sutton

Plantation woodland east of Heath House

railway cutting at Heath House

Woodland adjacent to Nene Way, Sutton

Woodland adjacent to Nene Way, Sutton

N

0 500 1,000 Metres

LEGEND

Proposed Scheme Boundary

Fungi Survey - CHEGD Score

0

1 (No Importance)

4 (Local Importance)

REFERENCE MAP

REV	DATE	REVISION NOTE	ORG	CHK'D	APP'D
P01	03/06/2021	FIRST EDITION	AC	RMC	BM

DESIGNER

SWECO

CONTRACTOR

GallifordTry

CLIENT

highways england

PROJECT TITLE

A47 WANSFORD TO SUTTON

PROJECT STAGE

PCF STAGE 3

DRAWING TITLE

ANNEX A: SURVEYED AREAS AND CHEGD SCORES

TR010039/APP/6.2

SUITABILITY

FOR INFORMATION

SHEET SIZE	SCALE	STATUS
A3	1:15,000	S2

DRAWING NUMBER

HE551494-GTY-EGN-000-DR-GI-30081