

# A47 North Tuddenham to Easton Dualling

**Scheme Number: TR010038**

**Volume 6**

## **6.3 Environmental Statement Appendices** **Appendix 8.2 - Fungi survey report**

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Planning Act 2008

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March 2021

Infrastructure Planning

Planning Act 2008

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

A47 North Tuddenham to Easton Dualling  
Development Consent Order 202[x]

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**ENVIRONMENTAL STATEMENT APPENDICES**  
**Appendix 8.2 - Fungi survey report**

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# 1. Introduction

- 1.1.1. A qualified fungi surveyor was commissioned by SWECO, on behalf of Highways England to carry out fungi surveys for the A47 North Tuddenham to Easton Dualling scheme 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. In particular, one protected species was searched for: sandy stiltball *Battarraea phalloides* which receives legal protection through listing on Schedule 8 of the Wildlife & Countryside Act 1981 (as amended). Within the UK, this species is restricted to the counties of Norfolk and Suffolk and there is a historical record (2010) from a site close to the A47.
- 1.1.3. The surveys took place on the 21 and 22 October 2020 by Ms Melanie Penson, 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.
- 1.1.4. Many fungi scientific names have changed over the years since DNA analysis has been carried out, clarifying family relationships. Scientific names used in this report follow Buczacki, Shields and Overton's *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 unfavourable 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 site at A47 North Tuddenham to Easton has been surveyed by the same qualified fungi surveyor in October 2017 and as the habitats were familiar, a more targeted approach to the survey effort was possible; focussing on undisturbed grasslands, such as church yards, areas of semi-natural woodlands and ancient hedgerows. A habitat assessment for sandy stiltball had previously been carried out in 2017 when only a short section of hedgerow had been found to be suitable. This was checked again during the current survey along with the location of the 2010 sandy stiltball record at Telegraph Hill (which is outside the working area).
- 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 an especially scarce resource in predominantly arable landscapes in lowland England. Suitable grassland sites included church yards 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.
- 2.1.6. These grassland sites were assessed under 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 of the total species that may occur. 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 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 were beyond identification. It was impossible to discern whether these were additional species to those recorded or were other species. Due to this constraint, the CHEGD scores are best regarded as a minimum.
- 2.1.11. None of the grass road verges within the survey area were sampled. This was 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. The one exception was a stretch of hedge bank on Church Lane which had been previously identified as being suitable for sandy stillball.

### 3. Survey results

3.1.1. Habitats and species results have been 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.

#### 3.2. Poppy's Wood and adjacent hedgerows and road verges

3.2.1. The wood is a relatively recent plantation, containing glades of coarse grassland, nutrient enriched from the local canine population. As such, it is not considered that there has been sufficient time for a diverse fungal assemblage to have developed. Especially, as seems likely, the trees have been planted on former farmland or other nutrient-enriched soil.

3.2.2. Only common and widespread species were recorded from Poppy's Wood and the adjacent section of planted woodland to the south-east, adjacent to the A47.

3.2.3. A single specimen of *Russula fragilis* was found under oak *Quercus* sp. within the centre of the plantation. Other species found besides the ubiquitous species comprised weeping-widow *Lacryma lacrymabunda* and russetshank *Collybia dryophila*

3.2.4. The adjacent area of planted woodland next to the A47 supported a large colony of field mushroom *Agaricus campestris*, common inkcap *Coprinus atrimentarius* and sulphur knight *Tricholoma sulphureum*.

#### 3.3. St. Michael's Church, Hockering

3.3.1. Only very common fungi were recorded from this site and the grass verge immediately adjacent. Hairy curtain-crust *Stereum hirsutum* and brown roll-rim *Paxillus involutus* were growing out of a dead stump. Parasol mushrooms *Macrolepiota procera* were frequent and occasional grisette *Amanita vaginata* were also recorded. Also present were *Agaricus campestris*, russetshank and *Coprinus disseminatus*.

3.3.2. No waxcap or related fungi were found in this churchyard and the CHEGD score is Nil.

### 3.4. Grassland adjacent to Mattishall Lane

- 3.4.1. A single fly agaric *Amanita muscari* was found growing under a birch *Betula* sp. tree in a private garden opposite the grassland. This is an abundant species.
- 3.4.2. The grassland has been highlighted as having botanical interest although many of the plants recorded were considered typical of disturbed ground. It would appear that this is restored grassland from a previous use and mounds of gravel would appear to confirm this. The fungal assemblage was not exceptional, being dominated by the abundant species found in most habitats within this survey area. Other common species comprised yellow stainer *Agaricus xanthodermus*, little-wheel toadstool *Marasmius rotula*, poison-pie *Hebeloma crustuliniforme* and russetshank.
- 3.4.3. A single waxcap species was found: meadow waxcap *Hygrocybe pratensis*, giving a CHEGD score of One.

### 3.5. Church Lane hedgerow

- 3.5.1. This section of hedgerow, extending for approximately 50m south of the A47 carriageway remains suitable for the protected sandy stiltball. In the UK, this species is strongly associated with elm trees (*Ulmus* spp.) on sandy soil (Pegler *et al*, *British Puffballs, Earthstars and Stinkhorns*, Kew, 1995), a habitat which is present along the west side of Church Lane. The habitat quality does not appear to have changed since the previous survey although again, no sign of the sandy stiltball was found. It remains possible, though unlikely, that the mycelium (roots) of sandy stiltball could be present at this location but until it produces fruit bodies this will never be proven.
- 3.5.2. Field mushroom and tawny grisette *Amanita fulva* were found on the opposite field bank. These are both common species.

### 3.6. Telegraph Hill

- 3.6.1. The site of the 2010 sandy stiltball record at Telegraph Hill, approximately 500m north of the A47 was also examined and a habitat assessment carried out. The habitat quality at this site no longer appears suitable: the elm trees are no longer present and the road verges have become overgrown with coarse grasses and ruderal herbs. It is not considered likely that sandy stiltball will reoccur here again and so there is no longer a spore source from which suitable habitat elsewhere could be colonised.



### 3.7. St. Andrew's Church, Honingham

3.7.1. This church yard appeared to have been fertilised owing to the bright green tone of the grass and only common and widespread fungi were found. Over and above the ubiquitous species, deer shield *Cervinus pluteus*, sulphur tuft, brick tuft and beech jelly-disc *Neobulgaria pura* were recorded. No waxcaps or other related grassland fungi were found and the CHEGD score for this churchyard is Nil.

### 3.8. St. Peter's Churchyard, Easton

3.8.1. The grassland in this churchyard appeared to be less "improved" than the other churchyards in this survey area. It supported two common waxcap species: snowy waxcap *Hygrocybe virginea* and parrot waxcap *H. Psittacina*, giving a CHEGD score of Two.

3.8.2. Other fungi recorded included plums-and-custard *Tricholomopsis rutiland* (associated with planted coniferous trees), peppery bolete *Chalciporus piperatus*, red-cracking bolete *Boletus chrysenteron*, russetshank and grisette.

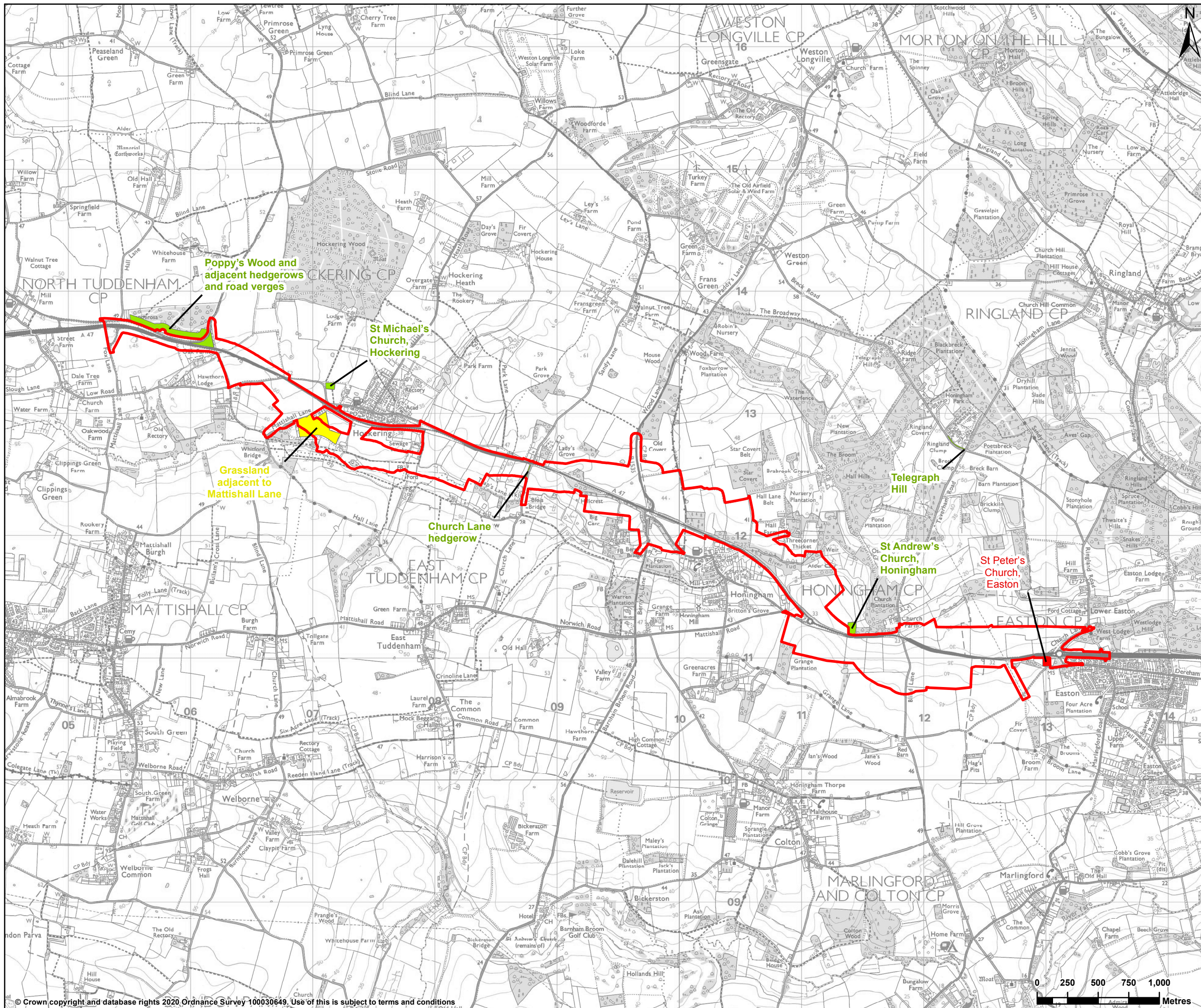
## 4. Conclusions and future requirements

- 4.1.1. Although suitable habitat exists for the protected sandy stiltball, along the hedgerow at Church Lane, no evidence has been found of this species when searched for in 2017 or 2020. The spore source from the population at Telegraph Hill has been apparently absent since 2010. Sandy stiltball is considered unlikely to reappear within this immediate landscape given the small amount of suitable habitat remaining.
- 4.1.2. All of the grassland sites examined do not qualify as important when assessed against the CHEGD criteria, as had been the case during the 2017 survey.
- 4.1.3. In a predominantly agricultural landscape with high levels of atmospheric nitrogen from traffic fumes (diffuse sources) and high levels of soil nitrogen and phosphates from inorganic fertilisers, it is considered very unlikely that any important assemblages of fungi have persisted within this survey corridor. Fungi do not pose a constraint to road widening along the A47 Tuddenham to Easton scheme.

## 5. References

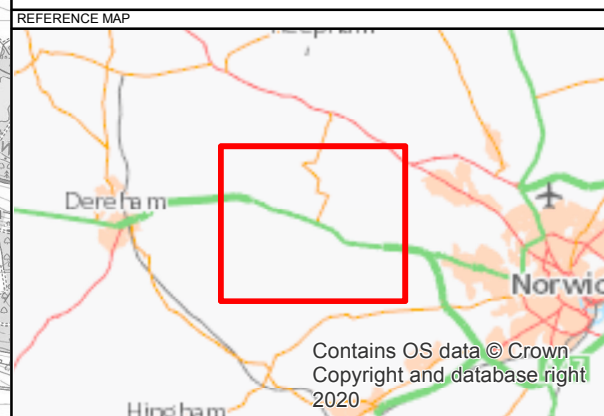
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## **Annex A: Fungi survey areas and CHEGD score**



**LEGEND**

- Scoping boundary
- Fungi Survey
- No CHEGD score
- CHEGD score: 1
- CHEGD score: 2



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DESIGNER

**SWECO**

CONTRACTOR

**GallifordTry**

CLIENT

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