

Environmental Impact Assessment Report (EIAR)

Volume 6 of 6: Appendices

(Appendix 8.6) Fungi Survey Report

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1. Introduction

1. Macrofungi” are defined as those fungi that produce visible reproductive structures (fruitbodies). Such fungi are confined to two fungal groups, the Basidiomycota and the Ascomycota. Reproduction, and the production of visible fruitbodies by which they can be identified is strongly seasonal; in Ireland the majority reproduce in between September and December while a smaller number reproduce in spring. The reproductive season may be extended or reduced by unseasonal weather, but this was not a factor in this assessment.

2. Methodology

2. The present assessment was carried out on two dates 21st September 2020 and 15th October 2020, the latter data representing the nominal peak of the fungal reproductive season in Ireland in most years. Survey was by visual inspection and identification in the field where possible. Some species could not be identified in the field (for example those requiring confirmation by microscopic features), and specimens were collected for later identification. A number of texts were referred to for identification confirmation (1,2,3). Nomenclature follows the Checklist of the British and Irish Basidiomycota (4).

3. Results

3.1 Raw Water Intake and Pumping Station Site

3. Fifty-eight macrofungal species were distinguished at the Raw Water Intake and Pumping Station (RWI&PS) site (Table 1). Twenty-three species were mycorrhizal species on tree hosts, principally oak, hazel and Sitka spruce; 18 were saprobes (decomposers) of wood and/or leaf litter; 16 were saprobes found on soil; one species was a ubiquitous tree pathogen (*Armillaria mellea*, Honey or Bootlace Fungus). A check of the relevant published database⁽⁴⁾ shows that 55 of these species have been recorded from the Republic of Ireland.
4. Three species, *Cortinarius parvannulatus*, *Cortinarius trivialis* and *Polyporus durus* are not recorded in the database⁽⁴⁾ from the Republic of Ireland, but are recorded from Northern Ireland. Their absence from the ROI database does not mean that these species are rare or even uncommon here; it is widely recognized that the ROI database is incomplete and omits many species that are known or suspected to be common or occasional. In the author’s experience, these three species fall into the secondary category-they are occasionally encountered in woodlands implying a widespread but low frequency distribution.
5. The list of macrofungi encountered is fairly representative of a mixed woodland habitat containing a mixture of mycorrhizal host trees on reasonably fertile soil. The macro fungal diversity is possibly enriched by the presence of old, long established mixed woodland bordering the north of the site.

Table 1: Macrofungal species recorded at the RWI&PS Site

Species	FG	Associated Plant/Habitat
<i>Amanita fulva</i> Fr.	M	Birch
<i>Amanita rubescens</i> Pers.	M	Oak, Sitka Spruce
<i>Armillaria mellea</i> (Vahl) P. Kumm.	P	Various woody hosts
<i>Boletus luridus</i> Schaeff.	M	Oak
<i>Clitocybe ditopa</i> (Fr.) Gillet	SS	Sitka Spruce
<i>Clitocybe fragrans</i> (With.) P. Kumm.	SS	Sitka Spruce
<i>Clitocybe metachroa</i> (Fr.) P. Kumm.	SS	Sitka Spruce

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Species	FG	Associated Plant/Habitat
<i>Clitocybe nebularis</i> (Batsch) P. Kumm.	SS	Sitka Spruce
<i>Clitocybe vibecina</i> (Fr.) Quél.	SS	Sitka Spruce
<i>Cortinarius acutus</i> (Pers.) Fr.	M	Oak
<i>Cortinarius brunneus sensu lato</i> (Pers.) Fr.	M	Oak
<i>Cortinarius cinnamomeus</i> (L.) Gray	M	Oak
<i>Cortinarius parvannulatus sensu lato</i> Kühner	M	Oak
<i>Cortinarius trivialis</i> J.E. Lange	M	Sitka Spruce
<i>Crepidotus mollis</i> (Schaeff.) Staudé	SW	Hazel
<i>Entoloma rhodopolium</i> (Fr.) P. Kumm.	SS	Oak, Hazel, Sitka Spruce
<i>Entoloma sericeum</i> (Bull.) Quél.	SS	Oak, Hazel, Sitka Spruce
<i>Galerina marginata</i> (Bull.)	SW	Willow
<i>Galerina mniophila</i> (Lasch.) Kühner	SS	Mosses
<i>Rhodocollybia butyracea</i> (Bull.:Fr.) Lennox	SS	Sitka Spruce
<i>Hebeloma crustuliniforme</i> (Bull.) Quél.	M	Oak, Hazel, Sitka Spruce
<i>Hemimycena lactea</i> (Pers.) Singer	SS	Sitka Spruce
<i>Hygrocybe reidii</i> Kühner	SS	Soil
<i>Hypholoma fasciculare</i> (Huds.) P. Kumm.	SW	Oak, Hazel, Sitka Spruce, Willow
<i>Hypoxylon fragiforme</i> (Pers.) J. Kickx f.	SW	Oak, Hazel, Sitka Spruce, Willow
<i>Inocybe geophylla</i> (Bull.) P. Kumm.	M	Oak, Hazel
<i>Inocybe sindonia</i> (Fr.) P. Karst.	M	Oak, Hazel
<i>Laccaria amethystina</i> Cooke	M	Oak, Hazel, Sitka Spruce
<i>Laccaria laccata</i> (Scop.) Cooke	M	Oak, Hazel
<i>Lactarius aurantiaca</i> (Pers.) Gray	M	Willow, Hazel
<i>Lactarius glyciosmus</i> (Fr.) Fr.	M	Birch
<i>Lactarius pyrogalus</i> (Bull.) Fr.	M	Hazel
<i>Lactarius quietus</i> (Fr.) Fr.	M	Oak
<i>Lepista flaccida</i> (Sowerby) Pat.	SS	Sitka Spruce litter
<i>Lycoperdon nigrescens</i> Pers.	SS	Sitka Spruce litter
<i>Lycoperdon perlatum</i> Pers.	SS	Soil
<i>Mycena arcangeliana</i> Bres.	SW,L	Leaf and woody litter
<i>Mycena cf rosea</i> (Bull.) Gramberg	SL	Leaf litter
<i>Mycena filopes</i> (Bull.) P. Kumm.	SL	Leaf litter
<i>Mycena galericulata</i> (Scop.) Gray	SW	Wood
<i>Mycena galopus</i> (Pers.) P. Kumm	SW,L	Leaf and woody litter
<i>Mycena leptcephala</i> (Pers.) Gillet	SL	Sitka Spruce litter
<i>Mycena polygramma</i> (Bull.) Gray	SW	Wood
<i>Mycena pura</i> Pers.	SL	Leaf litter
<i>Mycena sp.</i>	SL	Leaf litter
<i>Peniophora sp.</i>	SW	Wood
<i>Ramaria stricta</i> (Pers.) Quél.	M	Sitka spruce(?)
<i>Phallus impudicus</i> L.	SS	Soil
<i>Polyporus durus</i> (Timmerm.) Kreisel	SW	Wood

Species	FG	Associated Plant/Habitat
<i>Postia caesia</i> (Schrad.) P. Karst.	SW	Wood
<i>Russula atropurpurea</i> (Krombh.) Britzelm.	M	Oak
<i>Russula nigricans</i> (Pers.) Fr.	M	Oak
<i>Russula ochroleuca</i> (Pers.) Fr.	M	Sitka Spruce, Oak
<i>Scleroderma areolatum</i> Ehrenb.	M	Sitka Spruce, Oak
<i>Scleroderma citrinum</i> Pers.	M	Oak
<i>Stereum hirsutum</i>	SW	Oak
<i>Trametes versicolor</i> (L.) Pil.	SW	Wood
<i>Tricholomopsis rutilans</i> (Schaeff.) Singer	SS	Soil

Note: Data from samples collected on 21st September and 15th October 2020 are combined in this table. FG= functional Group i.e. M=mycorrhizal; P=parasite; SS =saprobe (or decomposer) on soil surface; SL=saprobe on leaf and woody litter; SW=saprobe on standing or fallen dead wood.

3.2 Water Treatment Plant Site

- Nineteen macrofungal species were recorded at the Water Treatment Plant (WTP) site (Table 2). The majority of species were saprobes found on wood, soil or cattle dung. Most of these were found in the hedgerows surrounding the fields that dominate the site. Surprisingly few species were found in the pasture habitat; for example, no waxcaps were found on either sampling date. The most noteworthy species found in the pasture was *Cordyceps militaris*, a fungal parasite of moth pupae in soil, which is common but frequently overlooked.
- In conclusion, all of the species found on the WTP site were common species. The overall macrofungi diversity was low.

Table 2: Macrofungal species recorded at the WTP Site

Species	FG	Associated Plant/Habitat
<i>Armillaria mellea</i> (Vahl) P. Kumm.	P	Various woody hedgerow hosts
<i>Ascocoryne sarcoides</i> (Jacq.) Grov. & Wils.	SW	Dead Wood/Hedgerow
<i>Calocera cornea</i> (Batsch.) Fr.	SW	Dead Wood/Hedgerow
<i>Cheilymenia fimicola</i> (de Not. & Baglietto) Dennis	C	Dung
<i>Chlorociboria aeruginascens</i> (Nyl.) Kan. <i>et al.</i>	SW	Dead Wood/Hedgerow
<i>Cordyceps militaris</i> (L.) Link	P	Soil/pasture
<i>Entoloma sericeum</i> (Bull.) Quél.	SS	Soil/Pasture
<i>Hypoxylon fragiforme</i> (Pers.) J. Kickx f.	SW	Dead Wood/Hedgerow
<i>Laccaria amethystina</i> Cooke	M	Beech/Hedgerow
<i>Leotia lubrica</i> (Scop.) Pers.	SS	Soil/Pasture
<i>Mycena aetites</i> (Fr.) Quél.	SS	Soil/pasture
<i>Mycena galericulata</i> (Scop.) Gray	SW	Dead Wood/Hedgerow
<i>Nectria cinnabarina</i> (Tode ex Fr.) Fr.	SW	Dead Wood/Hedgerow
<i>Panaeolina foenicisii</i> (Pers.) Marie	SS	Soil/Pasture
<i>Peniophora lyci</i> (Pers.) Höhn. & Litsch.	SW	Dead Wood/Hedgerow
<i>Postia caesia</i> (Schrad.) P. Karst.	SW	Dead Wood/Hedgerow
<i>Rhytisma acerinum</i> (Pers. ex St. Am.) Fr.	P	Sycamore/Hedgerow
<i>Stropharia semiglobata</i> (Batsch) Quél.	C	Dung/Pasture
<i>Trametes versicolor</i> (L.) Pil.	SW	Dead Wood/Hedgerow

Note: Data from samples collected on 21st September and 15th October 2020 are combined in this table. FG= functional Group i.e. M=mycorrhizal; P=parasite; SS =saprobe (or decomposer) on soil surface; SL=saprobe on leaf and woody litter; SW=saprobe on standing or fallen dead wood.

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