Stakeholder Reference:
Document Reference:

Part A

Making representation as Resident or Member of the General Public

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Part B

REPRESENTATION

To which Main Modification number and/or supporting document of the Local Plan

MM no: 46

Supporting document reference:

Do you consider this Main Modification and/or supporting document c

Legally compliant: No

Sound: No

If no, then which of the soundness test(s) does it fail? Effective

Please give details of why you consider the Main Modification and/or supporting document is be as precise as possible. If you wish to support the legal compliance, soundness of the Lo operate, please also use this box to set out your comr

Response to MM46 protection of biodiversity value

As a professional ecologist with over 50 years of association with the ancient woodlands of Epping F attention has been given to the invaluable role played by the exceptional range of fungi within Epping vegetation, especially the ancient pollards which are a unique feature and the main reason for the Fo Conservation. Their status within any assessment for biodiversity must not be ignored.

The association of certain fungi with specific trees has been known for a number of years, such as th breakthrough discovery was made by Suzanne Simard whose research work the late 1990's led to th and trade food via the fine thread like fungal networks within the soil that connect their roots. The ter accepted, (Simard, 2021) and consists of fine tubes called mycorrhiza along which food, water and c vigorous trees can send food and water to struggling trees elsewhere in the woodland!

The host plant supplies synthesised food materials via its roots to its associated fungi in exchange fo have this beneficial or symbiotic association with one or more fungal species this is the hidden value fungi involved do not produce a recognisable above ground fruiting body, they are difficult to detect c mutually beneficial and those species which are involved are termed ectomycorrhizal

Tree age and species diversity influences the range of species of these ectomycorrhizal (ECM) fung ancient woodlands and more recent plantations. The long term stable conditions and well establishe a greater diverse range of fungi, with lists of 900 or more species for such sites being considered a g Some 1,600 species are listed for Epping Forest as its fungal assemblages have been studied since increase with new species being added year on year (CoL Epping Forest Committee Reports). Some on the UK Red Data list. These include many that are only found feeding on the decaying woods with excellent range of the ECM fungi, the ones vital to the maintenance of healthy trees and other plants

It is difficult to assess the overall status of many species of fungi as those which produce visible fruit the conditions are favourable e.g. after a warm summer and periods of rain! These fruiting bodies rel However, those vital ECM species which grow within the woodland soil are under threat from increas the soil, damaging and fragmenting the wood wide web so it becomes less efficient at supporting the water, minerals and protection of pathogenic or harmful fungal species. Illegal foraging is also an iss are a source of food for animals such as deer, slugs and certain insects.

The Impact of Pollutants on the SAC of Epping Forest

Since the 1940s the increased use of nitrogenous fertilisers on agricultural land, fungicides and the c to the air, to land surfaces and to water courses. The UK's National Ecosystem Assessment (2011) a that atmospheric nitrogen deposition was one of the top two drivers of change in plant diversity, whic 90% of SACs including the Epping Forest SAC received excessive levels of nitrogen (RoTAP, 2012) mapping interface Site Relevant Critical Loads. All the records show very high levels of nitrogen dep

recognise that the prevailing winds blow from westerly directions so air borne pollutants from London
In the publication We Need to Talk about Nitrogen, produced by Plant Life, the authors discuss this p
deposition can change soil pH and alter the chemical balance of nitrogen and carbon within the soil.
receive excessive input of nitrogen is altered with beneficial ECM species being outcompeted by tho
2019). The changes in species composition may include a higher incidence of more aggressive path
species within soils tend to suppress the growth of some pathogens, (Quine, 2019).
As the total species richness below ground greatly exceeds the diversity of plants above, there now
pollutants on the soil microbiome too, (EA 2019). Natural England is working alongside the Forestry
community to make recommendations about limiting the impact of nitrogen deposition on sensitive s
Forest.
Whilst monitoring nitrogen deposition alongside roads is helpful, these toxic chemicals diffuse acros
be monitored by bio-indicators such as lichens which are tolerant to high levels of this gas. The wide
orange alga on the bark of many trees his visible on the bark of a number of trees located some dist
Poor air quality from traffic fumes is exacerbated by the production of the toxic gas Ozone O3 during
through the atmosphere and it tends to be concentrated in the more rural areas especially around w
and yew woodlands are in areas where ozone concentrations were moderate to high. (SNIFFER., 20
This toxic gas interferes with the ability of foliage to photosynthesise with a reduction in carbohydrate
of these carbohydrates are passed on to the tree's supporting mycorrhizal associates, the efficiency
less food. There is much current research about this topic as there are so many variables to be cons
show some trends but changing weather patterns add another variable to be factored in, but there is
in the quantity of fruiting bodies of certain ECM species.
Healthy trees produce chemicals which discourage attack by defoliating insects, those which are stru
to be eaten as their ability to produce these chemicals is reduced. In recent years many of the Fores
defoliation by millions hungry Beech weevils Orchestes fagi which reduced the ability of these trees t
third of their total area to damage by the hungry weevil larvae. This season has seen the majority of
mature Oaks being covered by Oak mildew Erysiphe alphitoildes which reduces the ability of this ne
tree species are underperforming, their supporting network of fungal species will be less efficient too
There is no monitoring by EFDC of PM2.5 locally. These fine particles have an impact on vegetation
Vehicle tyres and brakes release toxic heavy metals alongside roads which will be washed into the s
accumulate these in their fruiting bodies so any creature eating these will ingest them too! More rese
required to ensure that the soil biome continues to flourish as this underpins the health of the Forest'
It is difficult to ignore the role of fungi in supporting the health of the trees and other vegetation in the
measures proposed will be successful in reducing irreversible damage to the life forms which are fou
References.
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Please set out what change(s) you consider necessary to make the Main Modification and/o sound, having regard to the test you have identified in the question above (Positively prepare policy) where this relates to soundness. You will need to say why this change will make the S compliant or sound. It will be helpful if you are able to put forward your suggested revised precise as possible.

It is difficult to ignore the role of fungi in supporting the health of the trees and other vegetation in the measures proposed will be successful in reducing irreversible damage to the life forms which are fou

Signature: Tricia Moxey Date:
23/09/2021