

Back from the Brink – Species summary

Oak Polypore

BftB project: IP02 Ancients of the Future

Project lead organisation: Buglife

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Partner organisation for species: Natural England

Species name – common & scientific	Oak polypore (<i>Buglossoporus quercinus</i>)
Photograph	 <p>© Vavrin CC BY-SA-3.0 / Back from the Brink</p>
Taxon group	Fungus
Conservation status	Vulnerable (Smith, Suz, Ainsworth 2015)
UK distribution	Very scattered distribution, but predominantly southern and central England
Habitat associations	Veteran and ancient oak trees, particularly parkland/wood pasture sites with high frequency of ancient trees and continuity of sympathetic management.
BftB work carried out:	
Survey & Monitoring	<p>There is very little data on the heart-rot fungi of oak, beyond what we know from fruit bodies. Based on fruitbody records, there is wide agreement that <i>B. quercinus</i> is genuinely rare, however confirmation from sampling inside the tree is needed to verify this.</p> <p>A survey has been undertaken as part of PhD project at Cardiff University to see if <i>B. quercinus</i> could be found, and its frequency compared to other fungi.</p>

	<p>Samples were taken from more than 60 veteran oak trees using an increment bore with fungi cultured and isolated from them. 22 of the trees were from a site with records of <i>B. quercinus</i>.</p> <p>DNA was directly extracted from woodchips from the <i>B. quercinus</i> site as a secondary way of detecting the fungus.</p>
Links made with other taxa / conservation work?	<p>Detection of <i>B. quercinus</i> was one objective, however one of the key findings was of the major decomposers of heartwood. This is critical information for designing conservation interventions for saproxylic invertebrates associated with oak cavities.</p>
Wider engagement & advocacy activities?	<ul style="list-style-type: none"> • Oral presentation in mycology conference in Poland 2019. • Various social media/blog posts 2018-2021 • BFTB Ancients conference talk, 2021. • Royal Forestry Society seminar, 2021.
BftB results obtained:	
Other results documented?	<p>Oak rarely have heart-rot before 250 years old. This is valuable information that could inform veteran tree policy (i.e. how long for heart-rot habitat to form) but also in future interventions such as inoculations or veteranisation, where it is important the tree does not have naturally developing heart-rot.</p> <p>A fungus was found during the sampling that was new to science. The fungus was found in a thousand-year-old tree named the Buttington Oak, which fell in a storm in 2018. The fungus was named <i>Ypsilina buttingtonensis</i> as a legacy for the ancient tree.</p> <p>Two extremely rare species, <i>Cryphonectria radicalis</i> and <i>Postia wakfieldii</i> were also found.</p>
Species Recovery Curve progress made	<p>There has been some progress for this species. The survey gives confidence that the fruitbody-based surveys are robust. This raises the <i>B. quercinus</i> to step 3 on the SRC. Importantly, the survey has highlighted the dominant heart-rot fungi, other ascomycete/zygomycete fungi and the point at which heart-rot begins to develop in oak, This information will be valuable information that will inform future conservation interventions for this species, such as translocation inoculation.</p>
Recommendations for future work:-	<p><i>Translocation inoculation</i></p> <p>A translocation inoculation should be trialled with this species. Oak is a far more robust wood than beech used in the <i>Hericium</i> inoculations. This could be problematic, since young oak wood can be rich in polyphenols, so it may be necessary to inoculate older trees than would typically be recommended (see Wainhouse and Boddy, 2021).</p>