

Bearded tooth fungus

Hericium erinaceus



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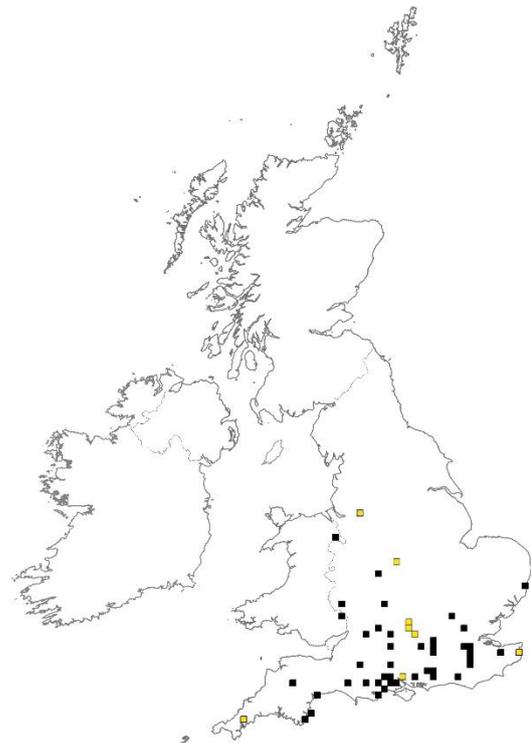
The Bearded tooth fungus fruitbody can be up to 25cm across. They form a cushion-like shape which distinguishes them from those of the Tiered tooth fungus (*H. cirrhatum*) with spines protruding down from a distinct upper surface and the Coral tooth fungus (*H. coralloides*) with spines hanging down from coral-like branches.

The entire fruitbody appears to be made of pendulous hanging spines (teeth) which are 10mm to 40mm long, soft and white; becoming yellow-brown and more brittle with age.

It is a NERC Act Section 41 priority species; is listed on Schedule 8 of the Wildlife and Countryside Act 1981; and appeared on the national Red List in 1992 (VU) and 2015 (VU).

Distribution

The majority of confirmed records are limited to the south, and particularly the south east of England, where this species is locally common. Records thin out towards the south west and the Midlands.



Distribution of the Bearded tooth fungus in the United Kingdom
Black: post -1990 Yellow: pre -1990

The New Forest is an important site for this species, with a large proportion of the population being recorded here over a long period of time.

This species has been cultivated and is produced commercially across the nation (see Reasons for decline).

Habitat

Bearded tooth fungus can mainly be found on the living or dead trunks of standing or fallen Beech and more rarely on oak. It favours the mature to ancient trees which tend to be found in old deciduous woodland and parkland.



© Paul Rutter
Old beech

Life cycle

While the exact mechanism of inoculation is unclear, spores of the Bearded tooth fungus that establish themselves eventually lead to the fungus developing, feeding and growing within the 'dead' heartwood of host trees. To do this, the fungus releases enzymes that degrade the lignin in cell walls giving it access to the cellulose within. The observable effect of this is a stringy, bleached wood that is soft when wet and known as white rot.

Heartwood rotting fungi like this are extremely beneficial to the longevity of veteran trees because as they remove the core of the tree, it

becomes lighter and more flexible as a hollow cylinder.

When conditions are right, this species will produce visible fruitbodies through wounds and fissures on the outside of the tree. These spore-bearing structures are likely to reappear intermittently from August to December for up to and over 20 years.

Bearded tooth fungus is capable of producing both both asexual and sexual spores, although the majority of these spores will fall close to the source.

Although the fruitbodies of this species may be seen for up to 20 years, the organism itself will have been present in the heartwood for some years before this and may persist beyond its reproductive phase.

Reasons for decline

- Habitat loss - as the number of suitable veteran trees with connectivity to an established population of Bearded tooth fungus decreases.
- The dwindling number of potential host trees is due to a number of factors, not limited to: removal of veteran trees for health and safety; removal of bulky deadwood; introduced diseases and pathogens that kill trees before they reach maturity; and historical woodland/parkland management failing to recruit new generations of mature trees through planting or regeneration.
- In the wild this species has a range across North and Central America, most of Europe and Asia, however there has not been sufficient genetic sampling to distinguish if any of these may be separate species. If there is more than one species, the widespread cultivation of non-native sources of Bearded tooth fungus may already be competing with local, native populations.

- A potential future threat for this edible species is the growing popularity of foraging and wild mushroom collection.

Habitat management

Management plans should include typical methods for preserving existing veteran trees within broadleaf woodland (especially Beech):

- Leave dead limbs on trees and standing dead trees where they are.
- Divert paths away from potentially dangerous trees rather than fell them.
- When mature trees must be reduced or felled, larger woody debris (trunks, stumps and thick branches) should be left in situ.
- Ensure woodland regeneration is occurring, protecting young trees from browsing where necessary.
- Help develop mature Beech using methods like halo felling around selected trees.
- Bearded tooth fungus has been widely cultivated and manual inoculation of locally sourced specimens into suitable host trees may be an important conservation tool in the future.

Survey methods

This species does not reliably produce visible fruitbodies during each year of its fertile stage (see Life Cycle). However, keeping annual records of visual checks of each tree at regular intervals between August and December each year remains the simplest and most reliable method for surveying this easy-to-identify species.

When fruitbodies are not visible, core samples taken from dead and living trees can provide genetic evidence of the presence of this fungus, however only positive results would be conclusive. This is because Bearded tooth fungus is a poor competitor against other wood-rotting fungi, and so it might find itself restricted to a single part of

the woody substrate that is missed by a core sample.

Further Reading:

<https://www.first-nature.com/fungi/hericium-erinaceus.php>

<https://coek.info/pdf-ecology-of-hericium-cirrhatum-h-coralloides-and-h-erinaceus-in-the-uk-.html>

The Back from the Brink Ancients of the Future project is led by Buglife in partnership with Plantlife and the Bat Conservation Trust.

