Southern Oyster Mushroom Beetle

Species Status Report - 2019

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Introduction

The Southern Oyster Mushroom Beetle (*Triplax lacordairii*) is an extremely rare beetle. Historically, it has been found at several sites across southern England, but more recent records have been focussed in the New Forest, Kent and East Sussex.

The beetle is a saproxylic beetle associated with the fungus *Pleurotus* (oyster mushrooms) on Beech, Ash, Elm, Holly, Gorse, Elder and Birch. It is thought to require large old trees to produce suitable decaying wood for the host fungi and is known to be restricted to sites with a long historical continuity of ancient trees.

In 2014, the Species Recovery Trust undertook surveys across the known sites in Kent, East Sussex and the New Forest to look for the beetle. Five Southern Oyster Mushroom Beetles were found in the New Forest along with a lot of oyster mushrooms, but none were found at any of the other sites.

Hothfield Heathland in Kent was identified as a key site for further work. There appeared to be a lot of suitable habitat but no oyster mushrooms were found. This site had historically been a stronghold for the species.

In 2018, the Species Recovery Trust undertook a full survey of the habitat at Hothfield Heathland. The survey aimed to identify:

- Areas of the site that are still suitable for the beetle and that should be the focus of future survey work
- Areas of the site where habitat work may be needed or management practices changed

Methodology

Two areas of the Hothfield Heathland reserve, known as the 'triangle' and the 'A20 corridor' were surveyed on the 19th September 2018 by Kent Wildlife Trust and seven volunteers (see Figure 1 for a map of the survey area).

The areas were assessed by the means of a woodland habitat assessment, based on the Joint Nature Conservation Committee common standards monitoring guidance; a national standard for habitat monitoring.

Grid squares of 50m x 50m were generated based on the British National Grid system and overlain on a map of the reserve. Each square is a fixed sample location, and each was walked over by the survey team. A range of habitat attribute data were recorded against a unique reference ID for each square.

For the purposes of this survey in particular, the following attributes were also included: Oyster Mushroom presence and the presence of other bracket fungi.

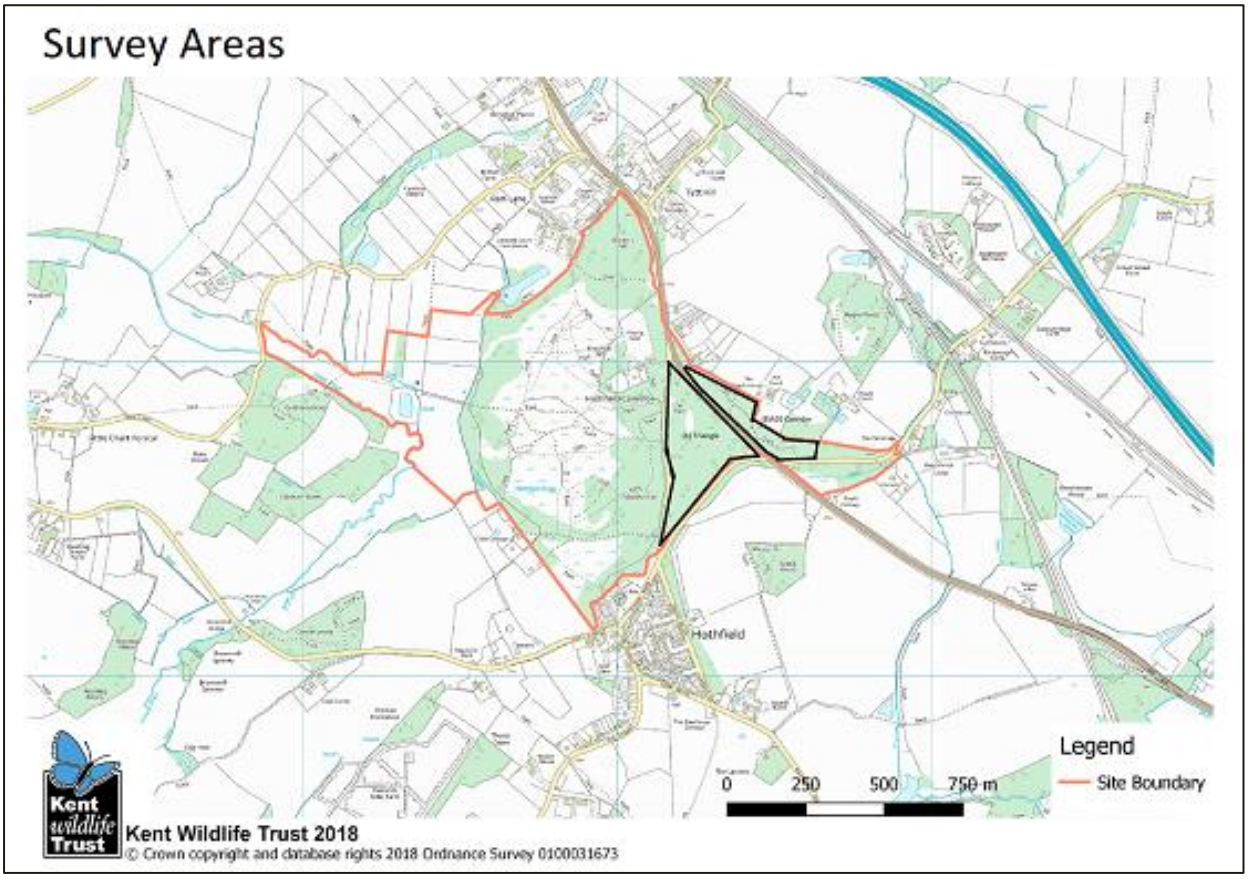

Figure 1: Survey area at Hothfield Heathland – outlined in black

Data analysis

The results highlight that the habitat is in a recovering state of regeneration. Woodland stand was present across 100% of the 19 individually recorded grid squares. The woodland coppice has a varied age, ranging from 1 – 10 years to individual stands of 30+ years (Figure 2). There is a considerable variation in coppice structure across the two areas; with over stood coppice stools in the A20 unmanaged area, and considerably younger coppice in the managed triangle area.

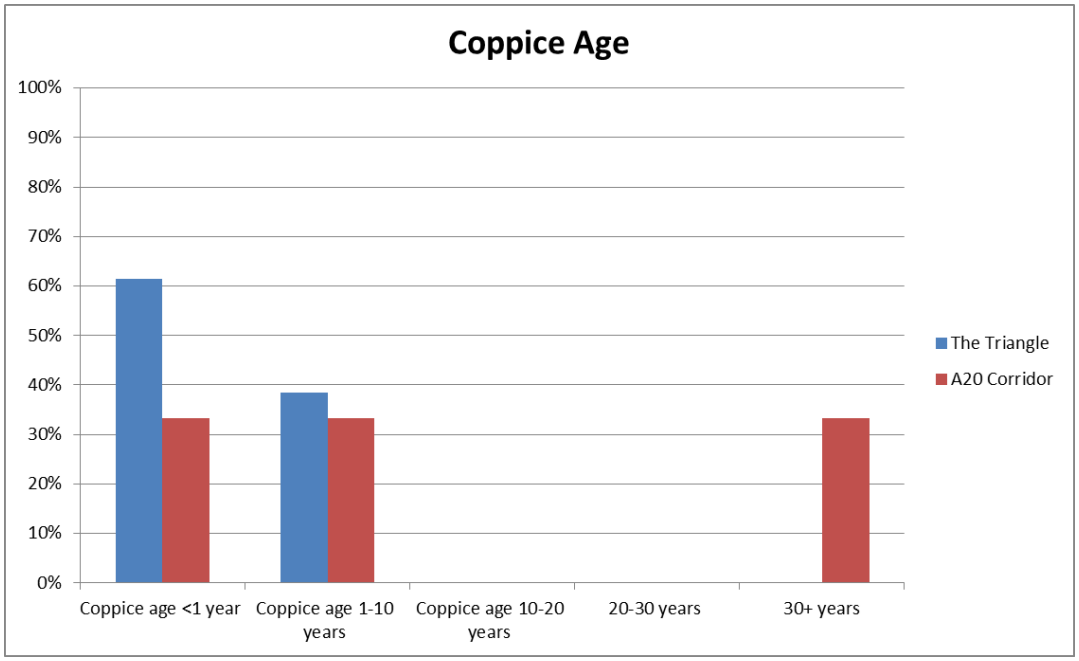

Figure 2: Coppice age data extracted from 19 individual 50x50m squares across two areas of Hothfield Heathland.

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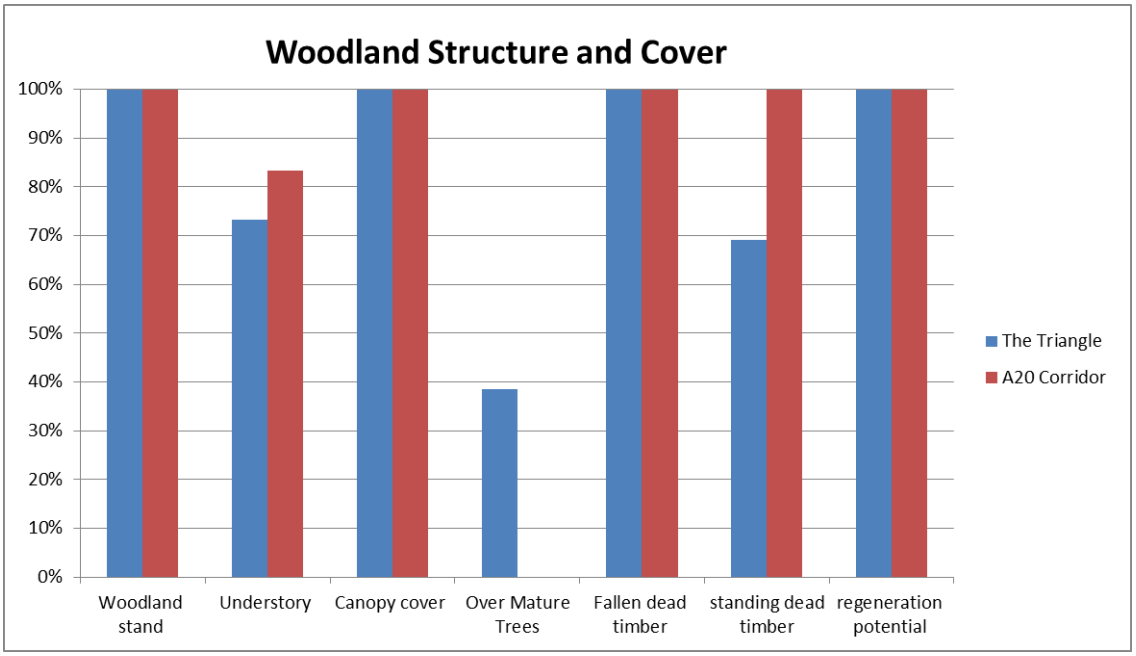

Figure 3: Woodland structure and cover from 19 individual 50x50m squares across two areas of Hothfield Heathland

The results indicate that the two survey areas are similar in structure and cover (Figure 3). A 2-5m understory is present across 73% of the triangle and 83% of the A20 corridor, and 100% of grid squares in both areas contained evidence of regeneration through saplings or young trees.

100% of grid squares in the triangle had a mixed/open canopy and 100% of the A20 corridor had a closed canopy. Within the triangle, 38% of grid squares met the target of having 1-3 over mature trees while all of the grid squares in the A20 corridor were below this target. 85% of the grid squares within the triangle contained at least one veteran tree, while 66% of the A20 corridor met this target.

Importantly for Southern Oyster Mushroom Beetles, and other saproxylic species, both areas met the fallen dead wood target of 1 tree> 20cm diameter. 69% of the triangle grid squares and 100% of the A20 corridor grid squares also met the target of 1 standing dead tree per 50m grid square.

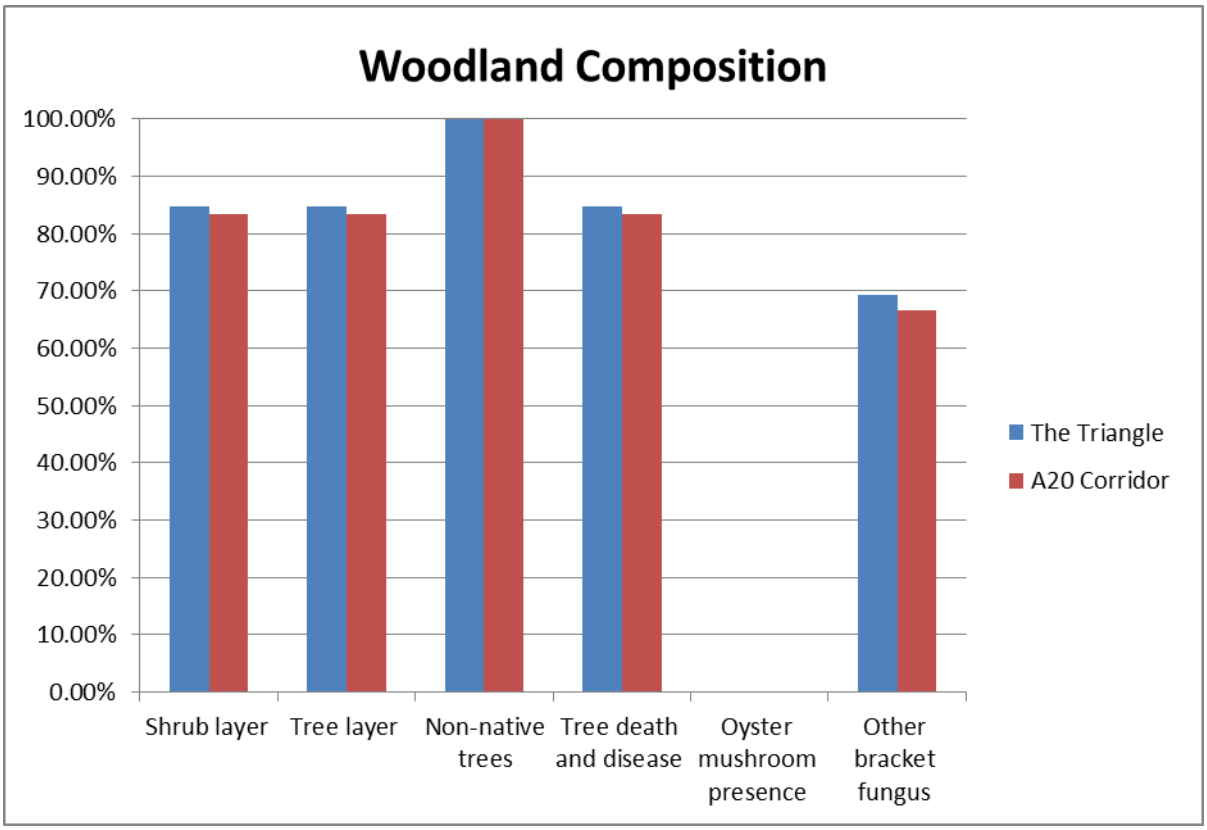

Figure 4: Woodland composition from 19 individual 50x50m squares across two areas of Hothfield Heathland

The survey results also indicate that both areas of woodland are similar in composition (Figure 4). 85% of the shrub layer throughout the triangle and 83% of the A20 corridor was comprised largely of native species (more than 95%). In contrast, the tree layer in both areas largely contained less than 95% native species (85% of the tree layer within the triangle comprised of less than 95% native species and 83% within the A20 corridor). Non-native trees were present throughout all 19 sample locations (comprising of Sweet Chestnut, Sycamore and Sequoias). In addition, tree disease was present across 85% of the triangle and 83% of the A20 corridor. For the most part, this was Ash Dieback.

No Oyster Mushroom fungi were recorded within either of the woodland areas, however, other types of bracket fungus were present in 69% of the triangle and 66% of the A20 corridor.

Bracket fungi were found on several different tree species including: Sweet Chestnut, Ash, Beech, Birch, Elm and Sycamore.

Implications

It is disappointing that no oyster mushrooms were found, despite every grid square meeting the target for fallen dead wood and the majority of grid squares meeting the target for standing dead wood and containing veteran trees. It is possible that these targets are in fact too low. The target for dead wood is to have one fallen tree of more than 20cm diameter within a 50m grid square. Similarly, for standing dead timber, the target is one standing dead tree within each 50m grid square. It is possible that these targets are too low and that the provision of additional dead wood would be beneficial in encouraging the growth of Oyster Mushrooms. This could be investigated by undertaking a trial in a number of the grid squares, providing additional dead wood and monitoring the abundance of bracket fungus.

It is encouraging that other bracket fungi were found across most of the site. It is probable that Southern Oyster Mushroom Beetles are not associated exclusively with Oyster Mushrooms and may be found on other bracket fungi. This means that despite no Oyster Mushrooms being found during this survey, these areas may still be suitable for the beetle. Given other bracket fungi species were identified, it could also be suggested that the habitat is in a favourable condition to support fungi such as the Oyster Mushroom, particularly given the amount of fallen and standing dead timber. It may be that a survey at another time of year would find Oyster Mushrooms. However, it is important to note that within each grid square, the number of tree species on which bracket fungi were found was quite limited and there were few records of bracket fungi on tree species that have been associated with the beetle in the past (i.e. Ash, Beech and Birch trees).

The survey results also allow us to identify priority areas for further survey. There were a number of grid squares within the site which had high numbers of veteran trees, met the targets for dead and standing wood and had high levels of bracket fungi on more than one tree species. It would be valuable to focus any future survey work in these areas, as it is considerably more likely that the Southern Oyster Mushroom Beetle will be found in these areas. Searching for this beetle is time consuming and so it is not very efficient to search an entire site. Knowing that these particular areas of the site are the most promising will be extremely valuable information for our future work.

Future work

The results suggest that more needs to be done to encourage the growth of bracket fungi on this site. We need to work with Kent Wildlife Trust to undertake trials, increasing the amount of fallen dead wood within particular grid squares on the site, to see if this leads to an increase in bracket fungi.

Now that we have identified priority areas for survey, we also need to undertake a detailed survey for Southern Oyster Mushroom Beetles, to determine if they do still survive on this site.

Acknowledgements

We are very grateful to the Cleary Foundation who generously funded this work. We are also grateful to Kent Wildlife Trust and the seven volunteers who helped us to collect the data.

About Us

The Species Recovery Trust is a charity set up to tackle the loss of some of the rarest species in the UK.

There are over nine hundred native species in the UK that are classed as under threat, with several hundreds more currently widespread but known to be in significant decline. The countryside is now bereft of many species that were a familiar sight a mere generation ago.

A small number of these species are on the absolute brink of existence, poised to become extinct in our lifetimes; our goal is to stop them vanishing.

Our aim is to remove 50 species from the edge of extinction in the UK by the year 2050. In addition we are reconnecting people with wildlife and the natural world through training programmes and awareness raising.

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