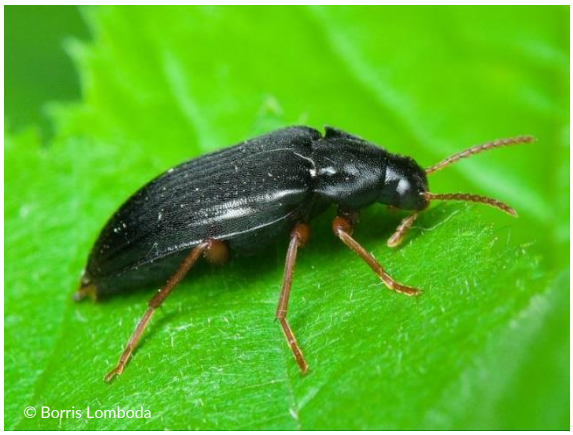
SPECIES INFORMATION GUIDE

Bearded false darkling beetle

Melandrya barbata



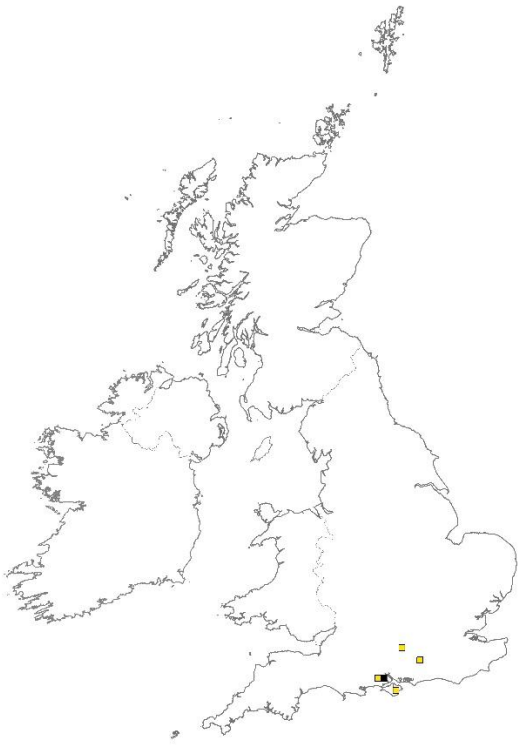
The Bearded false darkling beetle is about 10mm long and black in colour. It is classified as Near Threatened on the European Red List of Saproxylic Beetles (2010). It is a Red Data Book species in Britain.

Distribution

It was recorded up to 1992 in the New Forest (Hampshire) but also previously from Darenth Wood (Kent), Stratfield Turgis (Hampshire) in 1914, and Chiddingfold Forest (Surrey) in 1971. The importance of the New Forest for saproxylic invertebrates is reflected in its designation as a Site of Special Scientific Interest (SSSI) and a Special Area of Conservation (SAC).

Habitat

The larvae have not been observed in the UK, although adults have been observed on oak, and on standing and fallen Beech trees and stacked wood.



Distribution of the Bearded false darkling beetle in the United Kingdom

LOTTERY FUNDED

In Europe larvae have been reported in Beech branches and Aspen trunks, in both cases as fallen deadwood in shaded situations. A further record concerns an adult found in April which emerged after pupation in an oak branch that was 10-15 cm diameter, the branch having recently fallen from the canopy.

Mature Beech with broken limb

Life cycle

Little is known about the habits of adult Bearded false darkling beetles, which have only been found on trees which possibly represent larval development sites. Adult diet is unknown. Flower visits have not been reported and adults may rely on stores laid down during the larval period. Larval diet and the usual period required for larval development is unknown. The usual period for pupation is unknown, although it is possible that adults emerge from the pupa in the autumn and overwinter in the pupation site. The oviposition site is also unknown.

Reasons for decline

- The Bearded false darkling beetle probably requires the continuous presence of decaying oak or Beech trees in a landscape.
- The natural or deliberate loss of decaying oak and Beech trees is the greatest threat the beetle faces, particularly the potential loss of continuity if replacement trees are not available.
- The beetle may have poor dispersal abilities, which may prevent it colonising suitable habitat away from its current stronghold.
- Old trees are under threat from a wide range of factors including under-management, tree diseases, and climate change.
- Increasing canopy density due to lack of grazing can lead to some old trees being shaded out by younger trees, leading to premature death.
- Intensive activity around the roots of old trees, such as heavy grazing, ploughing, chemical spraying, and visitor footfall can lead to direct damage of roots and soil compaction, as well as disrupting vital mycorrhizal (fungal) associations that help sustain trees.
- The arrival of novel tree pathogens, increased temperatures, extended periods of drought, or heavy rainfall causing soil instability, may mean that some tree species die prematurely, or are no longer able to reach the age at which red-rot develops.
- Cessation of traditional management has left old pollards at risk of collapse due to top heavy crowns.

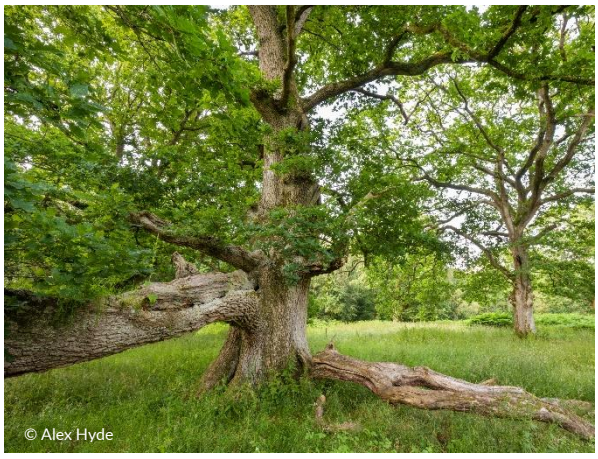
Habitat management

The aim of the following management advice is to ensure the long-term continuity and connectivity of decaying Beech and oak across a landscape through the provision and protection of old trees.

- Ascertain whether tree recruitment rates have been sufficient to prevent an age gap in availability of decaying Beech and oak trees, and that recruitment is still taking place.
- Maintain longevity of existing old trees (both dead and alive).
- Allow natural regeneration or plant Beech and oak trees in places where they can be

allowed to persist for hundreds of years to provide the next generation of old trees.

- Resist urge to tidy away pieces of fallen decaying wood or to remove old standing dead trees.
- Continue/reintroduce traditional practices such as pollarding and coppicing.
- Acorns or mast can also be collected and distributed into suitable areas.
- Establishment of new trees near old oak trees needs to be carefully planned, as oak is a light-demanding tree and sensitive to overcrowding.
- Establishment will be greatest where the trees are protected by thorn bushes. If grazing is preventing regeneration, it may be necessary to establish temporary stock-exclosures.
- Where important trees are experiencing crown competition from adjoining younger trees, the younger trees should be removed gradually over a period of years.
- Consider veteranising younger trees to accelerate development of decay and help prevent gaps in the availability of suitable trees.
- Veteranisation techniques could include pollarding a new generation of young trees.



Veteran oak

Survey methods

The best method available for landowners and site managers is to monitor the availability of trees based on their suitability. Searching potential/known trees for adults may produce results, although dead wood should not be disturbed due to the disruptive effect this will have on its condition. No other beetle species have been reported in association with Bearded false darkling beetles.

Nieto.A and Alexander.K.N.A. (2010) European Red List of Saproxylic Beetles, IUCN

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