

Red-horned cardinal click beetle

Ampedus rufipennis



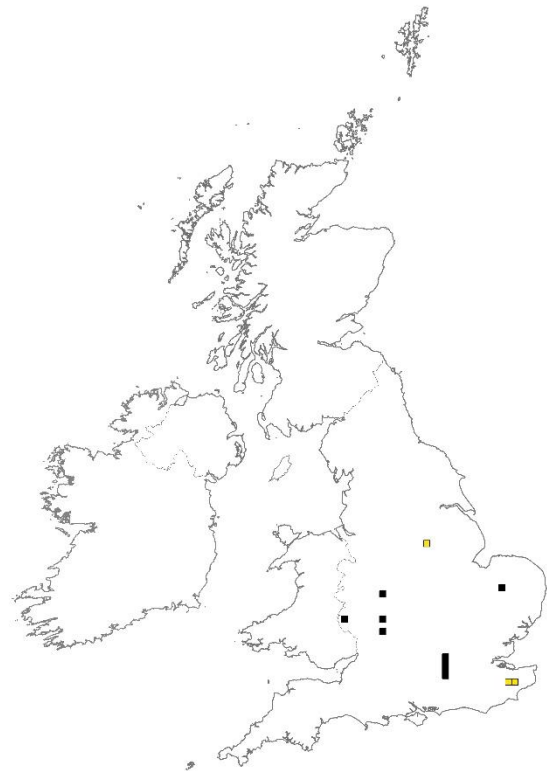
The Red-horned cardinal click beetle is about 10mm long. It has a black pronotum and the elytra (wing cases) are scarlet red. Classified as Least Concern on the European Red List of Saproxyllic Beetles (2010). It is a Red Data Book species in Britain.

Distribution

Known from seven counties: Berkshire, Surrey, Gloucestershire, Herefordshire, Worcestershire, Kent, and Norfolk. The main strongholds are Windsor Forest, Moccas Park, and the north Cotswolds. The importance of some of these sites for saproxyllic invertebrates is reflected in their designation as a Sites of Special Scientific Interest (SSSIs) and Special Area of Conservation (SACs).

Habitat

In the UK, the Red-horned cardinal click beetle is mainly associated with old trees in active, defunct or remnant wood pasture, as well as trees formerly in a regular pollard management cycle.



Distribution of Red-horned click beetle in the United Kingdom
Black: post -1990 Yellow: pre -1990

The larvae develop in relatively soft white-rotten heartwood of Beech, Ash, elm, birch, apple, and plum. Heartwood rot develops through the actions of wood decay fungi. Red-horned cardinal click beetle larvae are most often found in trunks, boughs and logs, and more rarely in stumps. Tree species is thought to be less important than the quality of the substrate and stage of decay. At Windsor, the beetle is associated with Beech in a high forest setting. In the north Cotswolds the

beetle is associated mostly with old Ash (including former pollards) in open-grown settings.



© Paul Rutter

Moccas Park National Nature Reserve in Herefordshire is a main stronghold for Red-horned click beetle

Life cycle

Little is known about the habits of adult Red-horned cardinal click beetles, with most reported in association with white-rotten wood suitable for larval development. Larval diet is unknown within the white-rotten wood substrate. The usual period required for larval development is unknown, although pupation takes place in late summer and adults hibernate over the winter. Pupal chambers are probably formed within chunks of dead wood. The newly formed adults remain in their pupal chambers over winter before emerging the following spring to copulate and lay eggs. The oviposition site is presumably within the decaying wood. Adult diet is unknown but these have been seen at Hawthorn so may feed on pollen or nectar, or else rely on stores laid down during the larval period.

Reasons for decline

- The Red-horned cardinal click beetle requires the continuous presence of old trees with white-rotten heartwood in a landscape.
- The natural or deliberate loss of white-rotten 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 strongholds.
- 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 white-rot develops.
- Cessation of traditional management has left old pollards at risk of collapse due to top heavy crowns.



© Paul Rutter

A young pollarded oak at Moccas Park NNR

Habitat management

The aim of the following management advice is to ensure the long-term continuity and connectivity

of white-rotten deadwood 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 white-rotten broadleaved trees, and that recruitment is still taking place.
- Maintain longevity of existing old trees (both dead and alive).
- Resist urge to tidy away pieces of fallen decaying wood or to remove old standing dead trees.
- Allow natural regeneration/plant trees in places where they can be allowed to persist for hundreds of years to provide the next generation of old trees.
- 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-exlosures.
- 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, and there is also a need to study the potential of fungal inoculation to start the creation of suitable white-rotten wood.
- Maintain or plant nectar sources such as Hawthorn and Elder to provide food for adults.



© Hayley Herridge

Adults have been seen visiting Hawthorn blossom and therefore it may be an important food source

Searching potential/known trees for adults may produce results, although the white-rotten substrate should not be disturbed due to the disruptive effect this will have on the condition of the rotten wood. Tapping Hawthorn blossom with a stick over a sheet or tray could reveal feeding adults. Another click beetle species recorded in the same white-rotten wood is *Procræus tibialis*.

Nieto.A and Alexander.K.N.A. (2010) European Red List of Saproxyllic 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.



Survey methods

The best method available for landowners and site managers is to monitor the availability of trees based on their suitability.