Dead-wood invertebrate assemblage

Associated species with Factsheets: Blue ground beetle, stag beetle, saproxylic beetles

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Description: Dead-wood is one of the most important habitat features for invertebrates in woodland sites. As defined here, the invertebrate assemblage encompasses those species using dead heart-rot and sapwood, as well as those occurring on, or under the bark of dead and dying trunks and branches. The numerous species associated with wood-decaying fungi and slime moulds are covered here, as are those found in water-filled rot holes and root pools. Particularly rich dead-wood invertebrate assemblages (especially those occurring in heart-rot) are found in parkland and wood-pastures where there are good numbers of over-mature and veteran trees with well-developed dead-wood micro-habitats. This is because open-canopy structure of these sites results in a wide range of micro-climates within dead wood features, ranging from sun-baked standing dead trunks (snags) and branches to fully shaded fallen trunks where the micro-climate is much cooler and damper. This wide range of micro-climatic conditions allows for a great diversity of dead wood invertebrates. Nectar sources such as stands of hogweed or hawthorn bushes growing in sunny sites are necessary for the development of many dead wood invertebrates. The specialist invertebrate fauna of sap runs is often treated as part of the dead wood assemblage, but is dealt with here in the Trunks and Large Branches Habitat Feature factsheet.

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Areas and status: Dead wood invertebrate assemblages are found throughout Britain's woodland resource. However, the majority of the rarer species are very local, being confined to wood-pastures and parks with abundant veteran trees.

Woodland type: All.

Invertebrate interest:

- Dry heart-rot of large native broadleaves, particularly oak, beech and ash, supports a host of important invertebrates including the Bearded False Darkling Beetle, Cosnard's Net-winged Beetle, Oak Click Beetle, Queen's Executioner, Red-horned Cardinal Click Beetle and Stag Beetle
- Wet heart-rot at the base of ancient beech and ash is used by the Violet Click Beetle the Royal Cranefly and the cranefly *Ctenophora ornate*
- The Midas Tree-weaver Spider lives in hollow cavities in veteran oak, beech and hornbeam
- The false-scorpion *Dendrochernes cyrneus* can be found under the bark of veteran oaks in a handful of old parks
- Dry, hard dead wood in ancient parks, wood-pastures and orchards hosts the Noble and Variegated Chafers
- The Blue Ground Beetle overwinters under moss and bark of dead branches and trunks
- Water-filled rot holes support a specialised invertebrate fauna that includes the Golden and Western Wood-vase Hoverflies
- Fruiting bodies of heart-decaying bracket fungi, such as the Chicken-of-the-woods, Dryad's Saddle and Artist's Fungus are required by a large number of specialised beetles and flies

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Potential habitat management issues associated with decline:

- Over tidiness leading to a loss of veteran trees and dead wood. This is a particular problem with snags, which are frequently removed for safety reasons
- Lack of continuity of dead wood due to poor age structure of the host trees
- Isolation of populations caused by fragmentation of suitable habitats
- Loss/degradation of old woodlands, wood-pasture and parklands due to changes in land use, e.g. conversion of the grazed Areas within parklands to arable, reseeding the pasture followed by fertilisers and heavy grazing, drainage, etc.

Potential habitat management solutions	
Prescription	*Comment*
Manage veteran/mature trees	Protect host trees, veteran and moribund trees and also mature/large trees to ensure continuity of supply of dead wood. Do not burn or remove any cut timber..
Dead wood	Retain dead trees and retain large pieces dead wood (standing and fallen, trunks and branches). Where there is little dead wood or there will be a lack in the future.
Scrub	Retain blocks of scrub within woods, parks and wood-pastures where there is a significant dead wood invertebrate interest, sunlit flowering shrubs such as hawthorn growing at wood-edges or within glades and rides may be particularly valuable. Cut scrub patches on rotation when cover exceeds agreed upper limit (in general at higher than20% by area).
Grazing	Moderate grazing helps to maintain open-grown wood-pasture. Aim to produce a varied sward of different heights/densities; ensure no overgrazing or under-grazing. Protect some self-sown trees/shrubs or re-stock with site-appropriate plantings, protect with stock-proof/deer-proof fencing
Connectivity	Retain/enhance links between sites; old hedgerows with mature trees, woodlands, riparian trees, shelterbelts, etc.
Woodland creation (natural regeneration/colonisation, native species or variable density)	Long-term supply of deadwood is critical; create parkland, wood-pasture and/or woodland which can go to senesce on areas of low ecological interest within 1km of woodland. Include good proportions of Pedunculate/Sessile Oak, Ash, Beech and Hawthorn, as well as other appropriate broadleaves, such as Lime, Sycamore, Sweet Chestnut and Horse Chestnut. Establish single/small groups of trees in large gaps in parkland/wood-pasture.
Plantations	Manage dead wood habitats within plantations as for other woodland habitats. Retain as much dead wood, and dying, moribund and large trees as possible.