

Wood-edge, glades and rides invertebrate assemblage

Associated species with Factsheets: Most of the important butterflies and moths for which factsheets have been prepared are associated with this habitat feature; plus red wood ant and violet oil beetle.

Description: Wood edges that occur at the interface between established woodland and open habitats such as grassland and heath constitute one of the most important habitat features for invertebrates associated with woodland. Both external and internal wood-edges are considered here, with the latter including both permanent areas of open space such as glades and rides and temporary areas of open ground created by coppicing or coupe-felling. Generally invertebrates associated with this habitat feature occur fairly low down, at heights of no more than 3m. As used here it encompasses a range of successional 'edge' features, such as scrub and young trees and the ecotone between these and adjacent open habitats. A feature of many wood-edge invertebrates is their need for both trees or shrubs and herb-rich open habitats. It is one of the most important habitats for invertebrates of British woodlands, with many of the scarcer species being warmth-loving and southern-distributed in Europe and occurring here at the northern edge of their range.



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Areas and status: Though it is widely distributed wherever woodland and scrub habitats are present. The extent and quality of wood-edge habitats are thought to have declined very considerably during the twentieth century. This has partly been as a result of the widespread withdrawal of woodland management such as coppicing, while external wood-edges have seen losses resulting from the polarisation of agricultural management; intensification in fertile lowland districts, and abandonment on marginal land (eg. bracken slopes or valley bottom glades), with the latter especially prevalent in upland broadleaved woodland in northern and western Britain.

Woodland type: Upland Broadleaved Woodland; Lowland Broadleaved Woodland; Wet Woodland; Young Woodland; PAWS; Scrub.

Invertebrate interest:

- Many important butterflies and moths breed in wood-edge habitats, examples include the woodland fritillaries, which are often found in association with bracken habitats at wood and scrub margins, and the argent and sable moth
- Red Wood Ant and its community of specialised associates, including the Shining Guest Ant
- A number of scarce pot beetles (*Cryptocephalus* spp.) including rarities such as the Hazel Pot Beetle, Shining Pot Beetle, Blue Pepper-pot Beetle, Six-spotted Pot Beetle and Ten-spotted Pot Beetle, which are found at woodland and scrub transitions (the latter in wet woodland). Many of these species only feed on young growth, with birch, hazel and willow being the most important hosts
- Oak Mining Bee nests in dappled shade at woodland margins and the edge of glades and rides
- Wasp Hoverfly is thought to require calcareous wood and scrub edges where there are ant nests
- Poplar Leaf-rolling Weevil on aspen suckers at the edge of woods, glades and rides, peak population on young growth c 8 years after cutting
- Wood-edges provide flower-rich feeding sites for a great number of woodland invertebrates, many of which require nectar and pollen in order to complete their life cycle (eg. bees, wasps and many dead wood beetles)
- Violet oil beetle occurs in grassland within glades or rides and at wood-edges
- Wood edges in wet woodland provide warm, sheltered resting and mating sites for adult soldierflies

Preferred habitat niches:

- Over-shading and scrubbing up of glades, rides, edges and other open areas
- Abandonment of coppicing and coupe-felling leading to loss of canopy gaps
- Re-stocking of woodland clearings and tree planting of open areas adjacent to woodlands
- Changes in agricultural management of unimproved habitats close to woodlands (e.g. over-grazing, under-grazing and conversion to improved grassland/arable)
- Selective removal or loss of sub-canopy trees and shrubs such as birch, aspen, hazel and willow that are of high value for invertebrates where they occur in wood-edge habitats
- Loss of grazing and other management from valley bottom fields (mainly in upland valley woodlands)
- Intensive agricultural management, such as improved pasture or arable creating 'hard' edges between this and the woodland

- Intensive management of rides and clearings, such as repeated mowing and flailing (e.g. more than once a year) leading to loss of 'soft' scrubby edges
- Planting, scrubbing up and redevelopment of brownfield habitat (e.g. railway lines, waste ground and quarries) within and close to woodlands
- Excessive damage to ride habitat by timber extraction vehicles
- Habitat fragmentation and loss of connectivity leading to isolation of surviving populations

Potential habitat management solutions:	
<i>Prescription</i>	<i>Comment</i>
Glades, Rides	2- or 3-zone maintenance regimes. Cut zone 1 regularly for access. Cut zone 2 on a 4-7 yr. rotation. Cut zone 3 on an 8-20 yr. rotation.
Glades, Rides	Widen rides and enlarge glades if necessary; widths should be >2 times the height of nearby trees; clear strips of ride-side trees/shrubs 50-100m long by 10-20m wide; leave irregular edges or scallop ride edges (30-50m x 10-20m) to create sheltered conditions. Creating new east-west rides and box junctions within woods can be valuable especially where they link existing open space.
Herb-rich grassland in valley bottom fields and larger glades	Re-introduce light to moderate grazing to valley bottom fields where there are herb-rich grassland swards and there is a history of such management. Failing this, annual mowing in late-summer should be undertaken. Invasive scrub and recent woodland should be cut on rotation such that this occupies no more than 20% of the desired open area.
Woodland edge	Maintain graded margins with native trees and shrubs on external wood-edges using similar management techniques to those outlined for 2-zone glades and rides.
Rotational coppice (<12yr rotation) and Rotational coppice (>12 yr rotation)	Coppice small coupes (20x20m to 30x30m) on short rotations (<12 yrs.). Longer rotations (>12 yrs.) suitable where coppice re-growth is slow or where total area of coppice woodland is large. Coppice adjacent coupes and if this is not possible, locate coupes beside wide rides and glades.
Small group clear-fell	Clear-fell coupes (20x20m to 40x40m) on 25-40 yr. cycles. Clear-fell adjacent coupes and if this is not possible, locate coupes beside wide rides and glades. Re-stock with mixed site-native broadleaves, including sub-canopy 'pioneers' such as birch, hazel, aspen and broadleaved willows where appropriate.
Plantations	Manage wood edges and open space as for other woodland habitats. Larger coupe-fells may be undertaken here than in native woodland sites
Scrub	Retain some blocks of young scrub (5-10 yrs. old) at wood-edges or within glades and rides. Cut scrub patches on rotation when cover exceeds agreed upper limit (in general at higher than 20% by area).
Bracken	Where stands are very dense spray, cut or bruise Bracken. Cutting can be carried out in late May/early June on a 3-10 yr. rotation; bruising can be carried out in June; avoid areas with ground-nesting birds; only cut/bruise when conditions warm enough for reptiles to move out of the way. Raking up and disturbance of Bracken can be undertaken in autumn/winter. Raking up and disturbance of Bracken can be undertaken in autumn/winter
Grazing	Where livestock/deer are having a negative impact on coppice re-growth, erect stock-proof/deer-proof exclosures.
Grazing	Moderate grazing of Bracken habitats with woodland fritillary butterflies or the weevil <i>Procas granulicollis</i> by cattle and/or ponies in winter and early spring to break up dense standing trash and create a network of paths through the Bracken. Cattle and ponies will also lightly poach the ground encouraging violet germination.
Grazing	Where appropriate, graze wood-pasture, woodland edges, valley bottom glades and other open habitats at a level that maintains and enhances open conditions. Graze more heavily if small forbs (eg, bird's-foot trefoil, lesser celandine, violets) are being outcompeted by tall grassland and/or scrub then follow with a lighter grazing regime once the field and shrub layers are within agreed limits. Conversely, lighter grazing may be appropriate where taller grassland with abundant nectar sources is desired. Clear trees, shrubs and scrub which are creating too much shade. This may require the erection of stock fencing
Connectivity	Manage wood-edge features on a landscape-scale by widening rides which connect clearings within woods and link up with wood-edges/rides/clearings in adjacent or nearby woods. Create/maintain areas of suitable non-woodland habitat between woods a few km apart, e.g. unimproved grasslands, scrub mosaic, brownfield sites etc