

North Kent Super National Nature Reserve – Coleoptera Review

Tony Witts July 2024

Summary

Over 900 species of Coleoptera (the beetles) have been recorded in the vicinity of the proposed North Kent Super National Nature Reserve (NNR). With just under 3000 species¹ recorded from the whole of the County this area is significant for beetle diversity.

The most significant individual species in the proposed Super NNR area is the Endangered Six-spotted Pot-beetle (*Cryptocephalus sexpunctatus*) discovered at Crabbles Bottom in 2022. This attractive species, which is also present on the other side of the Medway Valley (Borstal) at its only other known Kent locality, relies on young trees, fresh re-growth and low branches of its host plants. It tends to favour dense scrub on west facing calcareous slopes where the aspect provides a warm and sheltered environment. Adults are found from May to July on the host trees as well as yellow Asteraceae and wood spurge. In captivity the larvae have been found to feed on withered leaves, fresh leaves and catkin pollen of hazel, though in the wild it probably uses a wider range of trees. Adults have been collected from hazel, crack willow, oaks, hawthorns, aspen and broom². In Kent, hazel seems to be significant. Its life cycle takes 2 years to complete.

The assemblage of deadwood beetles found in the Cobham area has been a draw for coleopterists since Victorian times. Cobham Park and woods are listed as nationally important for this assemblage. Three principal niches are represented: Heart wood decay; bark and sapwood decay; and fungal fruiting bodies. Each has its own distinct suite of species.

Overall, the most significant feature of the proposed Super NNR area is the mosaic of habitats present which supports a large diversity of beetles. Bare chalk, short sward, tall sward, scrub, woodland edge, woodland canopy, dead wood and veteran trees all have nationally important species associated with them in assemblages that can be assessed to be in good condition, as described in the following sections. The management of the site should seek to:

- Ensure a continuum of dead wood is present throughout the site using a range of tree species and thicknesses of wood; both standing and lying.
- Maintain, extend and connect the bare ground and short sward habitats.
- Maintain, extend and connect areas of high botanical diversity through woodland areas.
- Remove non-native shrubs.

Priorities for survey should include:

- Site wide saproxylic beetle survey by flight interception traps to establish the distribution and current status of this nationally important assemblage. Particular attention should be placed on Cobham Hall School, The Leisure Plots, Ashenbank Wood, Cobham Wood, Silverhand Estate and the Holborough Woodlands.
- Assess the availability of dead wood in a variety of aspects.
- Survey scrub edge and woodland rides (in particular hazel on western facing slopes) for the Six-spotted Pot-beetle.

¹ Witts T. (2021) Kent's Beetles. In Tinsley Marshall *et al.* The State of Nature in Kent 2021, Kent Nature Partnership. pp 271-281.

² Cox M. (2007) Atlas of the Seed and Leaf Beetles of Britain and Ireland. Pisces Publications. pp 111.

- Survey mature hazel scrub edges with dead branches for *Lymantior coryli*. Especially un-flailed hedgerows and woodland edges adjacent to unimproved grassland.
- Establish the area occupied by *Scybalicus oblongiusculus* by pitfall trapping in likely areas of chalk grassland and arable edges.
- Encourage general invertebrate recording in less well covered areas such as Silverhand Estate, Holborough Woodlands, perhaps via the Kent Field Club.

Beetle fauna in the proposed Super NNR Area

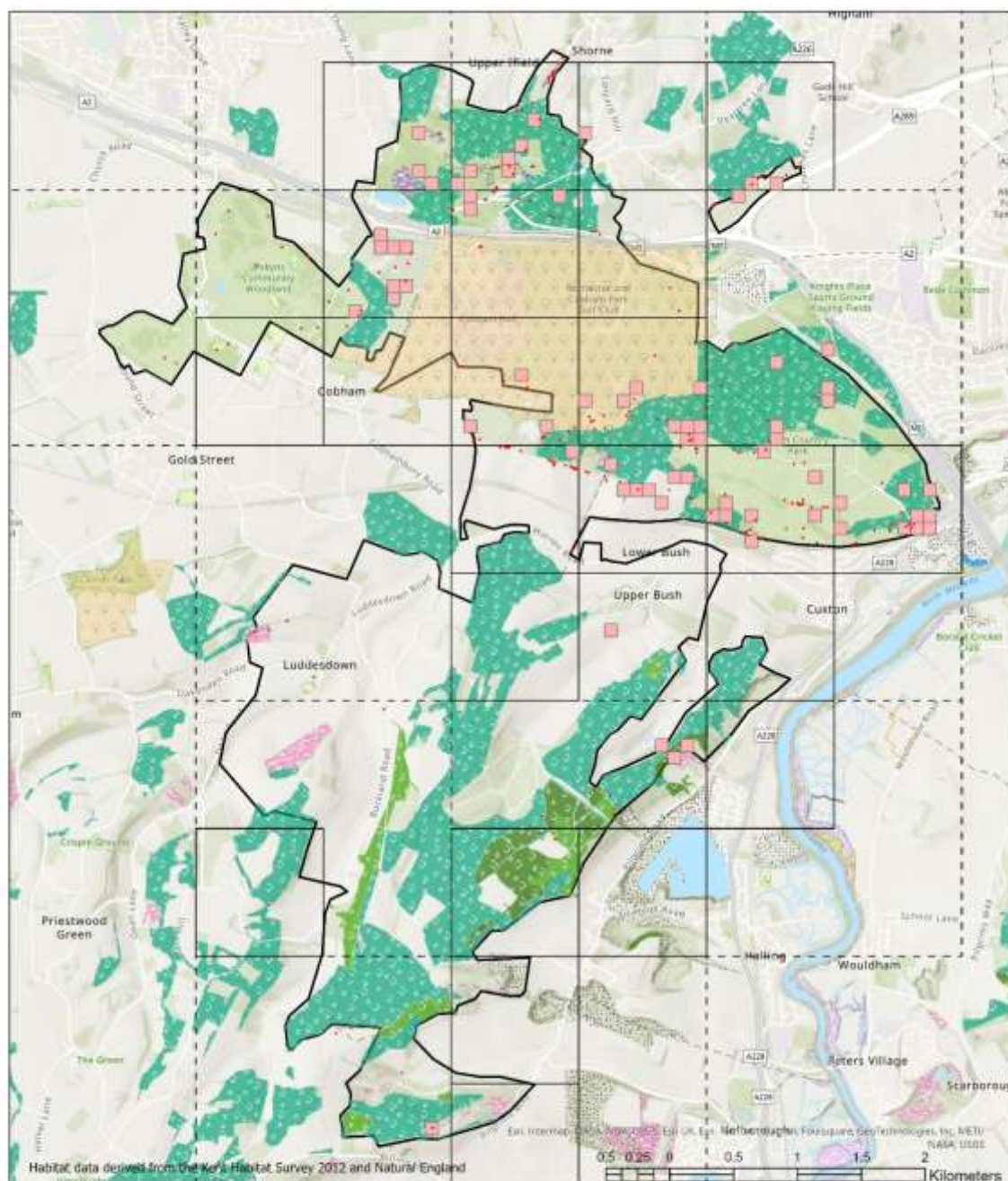
The records held by the Kent & Medway Biological Records Centre (KMBRC) include those of the Kent Coleoptera database. Records are drawn from a wide variety of sources including professional surveys, volunteer recording, national recording schemes, iRecord, iNaturalist, and the NBN Atlas. The records used in this analysis included all those of at least tetrad resolution whose grid squares at least partially overlapped the proposed Super NNR boundary (Figure 1). Hectad (10 x 10 km) resolution records, which are mostly pre-1960's have not been used. Consequently, records of species discussed here may not necessarily have been observed within the proposed NNR boundary but have been considered where the appropriate habitat is present. Some clearly irrelevant records, such as those for saltmarsh species have been discarded.

Of the 927 beetle species recorded in the proposed Super NNR area, 135 have a conservation status attributed to them (Appendix 1). Furthermore, there are twelve species of high conservation status (Table 1).

Family	Species	Current conservation status
Jewel Beetles	<i>Trachys troglodytes</i>	Nationally Rare
Ground Beetles	<i>Scybalicus oblongiusculus</i>	IUCN Vulnerable; Nationally Rare
Leaf Beetles	<i>Cryptocephalus sexpunctatus</i>	IUCN Endangered; Nationally Rare; S41. Priority Species
Leaf Beetles	<i>Longitarsus nigrofasciatus</i>	Nationally Rare
Leaf Beetles	<i>Longitarsus quadriguttatus</i>	Nationally Rare
Weevils	<i>Lymantior coryli</i>	Red Data Book 1
Weevils	<i>Smicronyx reichii</i>	Red Data Book 3
Handsome Fungus Beetles	<i>Lycoperdina bovistae</i>	Red Data Book 3
Oil Beetles	<i>Lytta vesicatoria</i>	Nationally Rare
Tumbling Flower Beetles	<i>Mordellistena brevicauda</i>	Nationally Rare
Tumbling Flower Beetles	<i>Mordellistena pseudopumila</i>	Nationally Rare
False Oil Beetles	<i>Oedemera virescens</i>	Nationally Rare

Table 1 Beetle species in the proposed Super NNR area with elevated conservation statuses

The beetle records cover the whole of the proposed Super NNR area. However, more precisely located modern records (Monad or better) are concentrated in the publicly accessible areas of Ranscombe Farm, Shorne Woods, Cobham Woods, and Jeskyns Community Woodland (Figure 1). There are few modern records Silverhand Estate and Holborough Woodlands and should be the focus of invertebrate recording where access allows.



Legend

Beetle records 1m square 10m square 50m square Monad Tetrad Open Mosaic Habitat on Previously Developed Ground Wood Pasture & Parkland	Priority Habitats Arable and horticulture Traditional orchard Arable field margins Calcareous grassland Lowland calcareous grassland	Acid grassland Lowland dry acid grassland Hedgerow (Priority) Lowland mixed deciduous woodland ancient woodland site Lowland beech and yew woodland	Yew-dominated woodland Wet woodland Reedbeds Water Pond (Priority) Saline Lagoon Saltmarsh Cord-grass swards	Coastal saltmarsh Atlantic salt meadows Gleeswort and other annuals colonising mud and sand Intertidal rock and sediment Intertidal underboulder communities Intertidal mudflats and sandflats
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Figure 1 The distribution of beetle records in the proposed North Kent Super NNR area. Each black square on the map represents the spatial resolution of the record. 2x2 km tetrad records tend to be older: mainly pre 2000.

Pantheon Analysis

Pantheon³ is a database of invertebrate habitat traits. It is compiled by national invertebrate experts and can be used to analyse species lists to determine the most important habitats and resources for invertebrate conservation at a site. Table 2 (below) shows the most important habitats and specific assemblage types (SAT) within the proposed Super NNR area.

Broad biotope	Habitat	Specific Assemblage Type	No. of species	Reported condition	Species with conservation status
open habitats	short sward & bare ground	open short sward	37	Favourable (37 species, 13 required)	17
open habitats	short sward & bare ground	bare sand & chalk	18	Unfavourable (18 species, 19 required)	12
open habitats		scrub-heath & moorland	15	Favourable (15 species, 9 required)	0
open habitats	tall sward and scrub		346		31
Tree-associated	arboreal		57		7
tree-associated	decaying wood	heartwood decay	14	Favourable (14 species, 6 required)	5
tree-associated	decaying wood	fungal fruiting bodies	17	Favourable (17 species, 7 required)	4
tree-associated	decaying wood	bark & sapwood decay	79	Favourable (79 species, 19 required)	17
wetland	marshland	open water on disturbed mineral sediments	10	Favourable (10 species, 6 required)	3

Table 2 Important species assemblages in the proposed North Kent Super NNR area, derived from the PANTHEON database

Significant Habitat Assemblages

The following sections describe the important assemblages and highlights species of particular interest. Appendix 2 lists all species in each assemblage and gives associated food plants where appropriate.

Open Habitats

Open Short Sward Specific Assemblage Type

Thirty-seven species of beetle are associated with open short swards in the proposed Super NNR area indicating that this habitat assemblage is in favourable condition. The majority of these are confined to some extent to dry chalk soils and reliant on calcicole plants. Species of particular note include:

- the Nationally Rare flea beetle *Longitarsus nigrofasciatus* on figworts and mulleins. Recorded only once at tetrad level near Ham Hill in 1987, so doubtfully within the proposed NNR boundary, the only other Kent record is for Trottiscliffe. Worth checking for on the food plants.

³ <https://pantheon.brc.ac.uk/>

- the Nationally Rare flea beetle *Longitarsus quadriguttatus* on hound's-tongue. Upper Halling Quarry 1996.
- the weevil *Smicronyx reichii* in seed heads of common centaury. Recorded in 1996 and 2013 around Upper Halling.

Bare Sand and Chalk Specific Assemblage Type

Eighteen species of beetle in the proposed Super NNR area are associated with bare sand and chalk. This is one species short of being assessed in favourable condition. A number of species are restricted to chalk grassland or reliant on plants of disturbed ground i.e. arable field margins. Scarce species recorded in the proposed Super NNR area include:

- the Nationally Scarce Bombardier Beetle *Brachinus crepitans*, recorded recently from Great Crabbles Wood and Ranscombe Farm.
- the Nationally Scarce ground beetle *Notiophilus quadripunctatus* found by pitfall trapping at Great Crabbles Wood in 2009.
- the Nationally Scarce ground beetle *Ophonus azureus* at Ranscombe Farm 2017.
- the Nationally Scarce wild mignonette dependant weevil *Aulacobaris picicornis*. Holborough Quarry 1996
- the Nationally Scarce poppy dependant weevil *Stenocarus ruficornis*. Cobham Wood 1998

The Vulnerable ground beetle *Scybalicus oblongiusculus* was found at the edge of an arable field near Cuxton in 2000. For some reason this species is not included in the bare sand and chalk SAT on Pantheon, despite its British localities all being open chalk grassland or brownfield sites. The inclusion of this species would bring the assessment up to favourable condition.

Scrub-heath and Moorland Specific Assemblage Type

Fifteen species are associated with scrub-heath and moorland, a habitat of nutrient poor acid soils. None of the recorded species have a conservation status and are considered to be widespread and common where plants such as Broom, Gorse, Common Sorrel and Wood Sage occur.

Tall Sward and Scrub Habitat

Tall sward and scrub is a very significant habitat in the proposed Super NNR area with 346 species of beetle associated with it, 31 of which have a conservation status. There are two Specific Assemblage Types (SAT) associated with this habitat, however the species in the proposed Super NNR list do not align well with either of them. The Scrub Edge SAT has 7 beetle species associated with it and is graded as unfavourable condition. The other SAT is Flower Rich Resource which only considers aculeates. When all species groups are considered in the Pantheon analysis both of these SATs are very strongly represented and assessed as favourable condition. Four of the most important beetles within the proposed Super NNR boundary are associated with tall sward and scrub:

- The Endangered Six-spotted Pot Beetle (*Cryptocephalus sexpunctatus*) was recently discovered at Crabbles Bottom on hazel.

- The Nationally Rare Devil's-bit Jewel Beetle (*Trachys troglodytes*). Recorded near Cuxton (TQ7067) in 1900. Devil's-bit scabious is found at Crookhorn Wood (part of Holborough Woods) so this beetle should be sought here.
- The Nationally Rare handsome fungus beetle *Lycoperdina bovistae* found in puffball and earthstar fungi. Recorded near Holborough Woodlands in 2003.
- The Nationally Rare false oil beetle *Oedemera virescens*. Recorded in the Ranscombe/Cuxton area in 2007.

The Spanish Fly beetle (*Lytta vesicatoria*) should probably be included in this habitat assemblage. Its habitat requirements are not assessed in Pantheon as it is considered to be a non-native species that has a history of temporary residence in Britain. It has been known to be present at Ranscombe Farm since 2010 and could represent a permanent colonisation under climate change. It is a brood parasite of Anthophora, Colletes, Osmia and Megachile bees in its larval form, and feeds as an adult on the leaves of shrubs and trees including privet, ash, rose and honeysuckle.

Tree Associated Habitats

Arboreal Habitat

This habitat does not have an associated Specific Assemblage Type so it's quality cannot be assessed. However, with 57 species associated with this habitat it is significant in the proposed NNR area. Seven species have a conservation status, including the Endangered Six-Spotted Pot Beetle already discussed above.

- Nationally Scarce leaf rolling weevil *Lasiorhynchites comatus* associated with young oak growth. Cobham Wood 1998 and Ranscombe Farm 2019
- Nationally Scarce leaf beetle *Gonioctena decemnotata* which feeds primarily on aspen. Recorded just outside the proposed NNR boundary at a development site in 1995
- Nationally Scarce soldier beetle *Rhagonycha lutea*. Outside the proposed NNR at Upper Halling Quarry and Paddlesworth in 1996

Shaded Woodland Floor Habitat

Thirty-seven beetle species are associated with shaded woodland floor, one has a conservation status:

- Nationally Scarce weevil *Tropiphorus elevatus* which feeds at the roots of shade tolerant woodland plants such as dog's mercury and ransoms. Great Crabbles Wood in 2009.

Dead Wood Habitats

Cobham Park has long been known to Coleopterists for its beetle fauna, most notably its assemblage of deadwood specialists (saproxylic species). In his review of ancient parklands in Britain Keith Alexander⁴ graded Cobham Park and Woods as nationally important for its assemblage of saproxylic beetles, and the fourth most important site in Kent. In 2011 a late

⁴ Alexander, K.N.A (2004) Revision of the Index of Ecological Continuity as used for saproxylic beetles. English Nature Research Report 574

season survey of the saproxylic fauna of Shorne Woods Country Park⁵ noted the site's historic importance for two species: The Red-Necked Click Beetle *Ischnodes sanguinicollis* and the Southern Oyster Mushroom Beetle *Triplax lacordairii*.

Shorne and Ashenbank Woods Site of Special Scientific Interest is designated for its saproxylic fauna, though only the tumbling flower beetle *Mordella holomelaena*⁶ is named in the citation.

Index of Ecological Continuity (IEC)

The Index of Ecological Continuity (IEC) is a method of assessing the deadwood assemblage of beetle species to estimate a site's importance for their conservation in Britain. All known deadwood beetles are graded from 1 to 3 depending on their fidelity to ancient woodland and ancient wood pasture sites.

IEC 1 - Species which occur widely in wooded land, but which are collectively characteristic of ancient woodland with dead-wood habitats.

IEC 2 - Species which occur mainly in areas believed to be ancient woodland with abundant dead-wood habitats, but which also appear to have been recorded from areas that may not be ancient woodland or for which the locality data are imprecise.

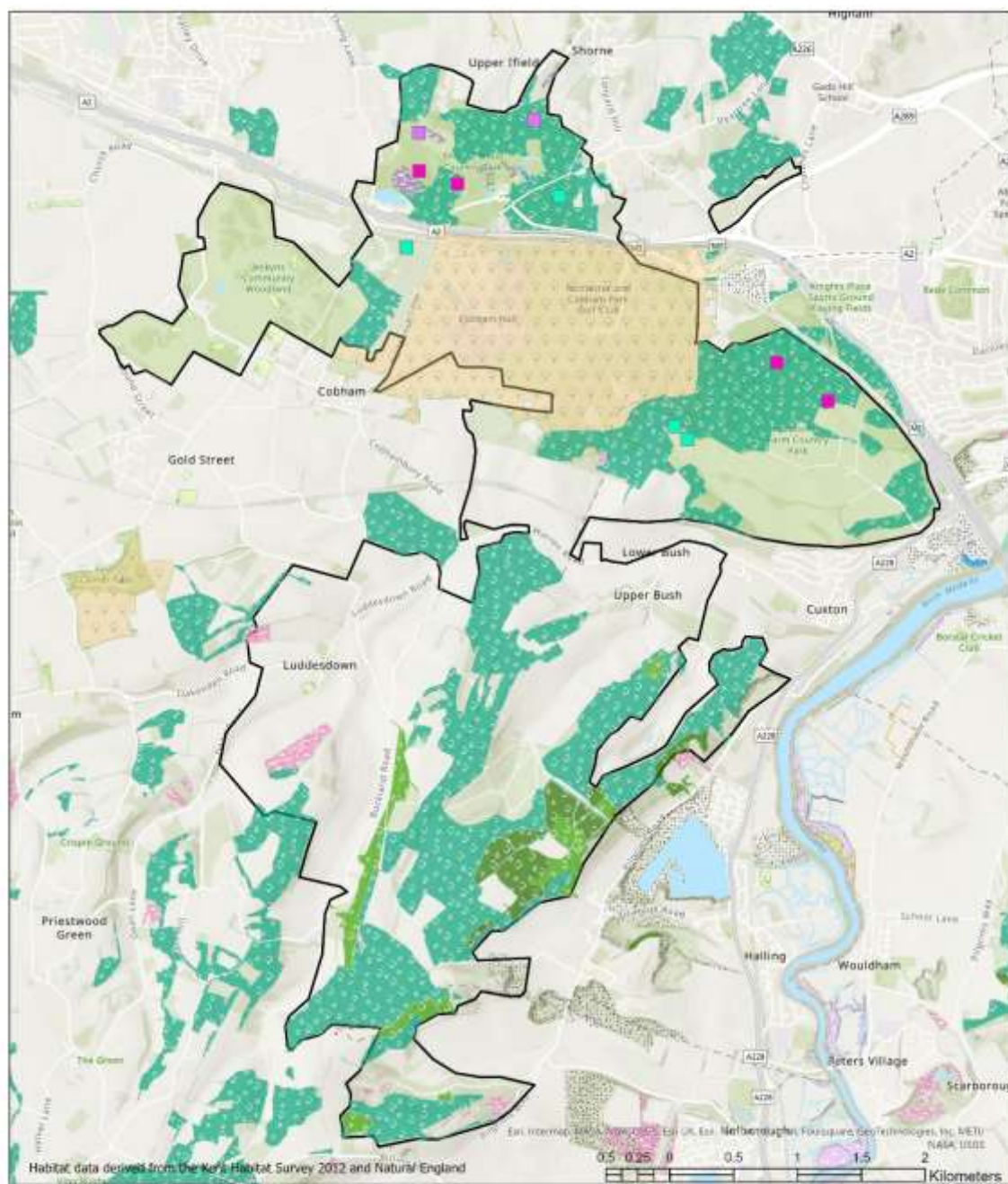
IEC 3 - Species which are known to have occurred in recent times only in areas believed to be ancient woodland, mainly pasture-woodland.

The published IEC score for Cobham Park and Woods is 40 (IEC scores of 25-79 are sites of national importance) (Alexander, 2004). The records held by KMBRC are evidently incomplete as the IEC score in our records only accounts for a score of 24. A comprehensive site-wide survey of the saproxylic beetle fauna should be considered a priority. The late season survey mentioned above yielded an IEC score of 21 (Alexander, 2012).

Map 2 shows the distribution of modern spatially precise IEC rated species records. They are split between Shorne Woods Country Park and Ranscombe Farm.

⁵ Alexander, K.N.A. (2012) Shorne Woods Country Park, Deadwood Invertebrate Survey, Deadwood Quality Assessment. Ecosulis report for KCC

⁶ KMBRC holds no records of this species in the proposed NNR area



Legend

Index of Ecological Continuity IEC 1 IEC 2 IEC 3 Open Mosaic Habitat on Previously Developed Ground Wood Pasture & Parkland	Priority Habitats Arable and horticulture Traditional orchard Arable field margins Calcareous grassland Lowland calcareous grassland	Acid grassland Lowland dry acid grassland Woodland Hedgerow (Priority) Lowland mixed deciduous woodland ancient woodland site Lowland beech and yew woodland	Yew-dominated woodland Wet woodland Wetland Reedbeds Water Pond (Priority) Saline Lagoon Saltmarsh Cord-grass swards	Coastal saltmarsh Atlantic salt meadows Glycerwort and other annuals colonising mud and sand Intertidal rock and sediment Intertidal underboulder communities Intertidal mudflats and sandflats
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Figure 2 Index of Ecological Continuity (IEC) deadwood beetle records in the proposed North Kent Super NNR area

Heart Wood Decay Specific Assemblage Type

Fourteen species of beetle in the proposed Super NNR area rely on heart wood decay in trees, mainly Oak, Beech, and Elm. Six species are considered to be indicative of Ancient Woodland, including:

- The Nationally Rare longhorn beetle *Stictoleptura scutellata* (IEC 3) develops over two to three years in dry dead xylem of a range of broadleaved trees including oak, beech, hornbeam, and horse chestnut. Recorded from Cobham Woods and Ranscombe Farm.
- The Nationally Rare click beetle *Ischnodes sanguinicollis* (IEC 2) is associated with veteran beech and elm. trees where it develops in moist heart rot. In Kent it has been recorded from Darenth Wood (1989) and Lynsted Orchard (2004).
- The Nationally Rare ant-like flower beetle *Euglenes oculus* (IEC 1) is associated with damp heartrot of veteran oak trees. Found at Ranscombe Farm in 2019.

Fungal Fruiting Bodies Specific Assemblage Type

Seventeen species of beetle in the proposed Super NNR area are associated with fungal fruiting bodies on dead wood, resulting in a favourable condition assessment in Pantheon. Notable species in this assemblage are:

- Southern Oyster Mushroom Beetle (*Triplax lacordairii*) (IEC 1) is considered to be IUCN Endangered in Europe, and rare in Britain. It is usually found in annual bracket fungi on dead Beech trees, i.e. *Pleurotus* spp, *Laetiporus sulphureus*, *Polyporus* spp. The KMBRC database does not hold any records of this species in the proposed Super NNR area, so it should be a target for surveying.
- The hairy fungus beetle *Pseudotriphyllus suturalis* (IEC 1) is scarce in Britain and is Globally Near Threatened. It is associated with the annual bracket fungus *Laetiporus sulphureus*, often on damaged oak trees. It was recorded in Cobham Park in 1985.

Bark and Sapwood Decay Specific Assemblage Type

Seventy-nine species of beetle in the proposed Super NNR area belong to this SAT, which is assessed to be in favourable condition by Pantheon. Seventeen have conservation statuses, notable species among them include:

- The weevil *Lymantria coryli* has only been recorded from 9 hectads nationally and would likely qualify for IUCN Vulnerable status if assessed. It is often associated with aerial dead hazel twigs infected with a *Diaporthe* spp. fungus. Cobham Park 1897.
- The Nationally Scarce fungus weevil *Platystomos albinus* (IES 1) associated with fungi infected dead branches and trunks of beech, sweet chestnut, and oaks. It has been recorded four times in the proposed Super NNR area, from Ranscombe Farm and Cobham Park
- The Nationally Scarce flat bark beetle *Uleiota planatus* (IEC 2) associated with recently dead beech, sweet chestnut and oak. Recorded in Strood (tetrad record) in 1997, Leybourne (1991) and widely across Kent so likely to be present in the proposed NNR.

Wetland Habitats

Open Water on Disturbed Mineral Sediments Specific Assemblage Type

Ten beetle species represent the open water on disturbed mineral sediment SAT, which is the only wetland SAT in favourable condition in the proposed Super NNR area. Notable species include:

- The Nationally Scarce weevil *Phytobius leucogaster* associated with water milfoils *Myriophyllum* spp. Recorded from Higham (tetrad record) in 1963. Spiked water-milfoil is present at Cobham Woods so may be worth sampling for this beetle.
- The Nationally Scarce crawling water beetle *Peltodytes caesus*. Shorne Woods 1983.
- The Nationally Scarce water scavenger beetle *Berosus luridus*. Shorne Woods Country Park in 2006.

Concluding Remarks

The proposed North Kent Super National Nature Reserve encompasses an area of national importance for beetles. The mix of habitats present supports almost a quarter of the UK's beetle species⁷, and a third of Kent's. It is an area renowned for its deadwood specialists, indicative of woodland habitats of great age and continuity. Amongst the 927 beetle species recorded, over 100 rare and threatened species can be found in almost all habitats present from bare ground, short sward, tall sward, calcareous grassland, acid grassland, scrub, coppice woodland, high forest, ponds, and veteran trees in woods and parkland settings.

In recent times recording effort has been focussed on the public sites like Ranscombe Farm, Cobham Woods, Shorne Woods etc., consequently there is little contemporary information about areas such as Silverhand Estate and the Holborough Woodlands. The recent discovery of the Vulnerable Six-spotted Pot-beetle at Crabbles Bottom highlights that there is still much to learn in this landscape and further survey work and casual visits by entomologists will undoubtedly yield further surprising discoveries.

Appendix 1 – Rare and Threatened Species

Family	Species	Current conservation status	Larval feeding guild	Adult feeding guild	Habitat
Ant-like flower beetles	<i>Euglenes oculatus</i>	Nationally Scarce	xylophagous	unknown	decaying wood
Fungus weevils	<i>Platyrhinus resinosus</i>	Notable B	fungivore	fungivore	decaying wood
Fungus weevils	<i>Platystomos albinus</i>	Notable B	fungivore	fungivore	decaying wood
Seed weevils	<i>Aspidapion soror</i>	Notable A	herbivore	herbivore	tall sward & scrub
Seed weevils	<i>Kalcapion semivittatum</i>	Notable A	herbivore	herbivore	
Seed weevils	<i>Oxystoma cerdo</i>	Notable B	herbivore	herbivore	tall sward & scrub

⁷ The current UK checklist includes over 4000 species.

Seed weevils	<i>Perapion affine</i>	Notable A	herbivore	herbivore	tall sward & scrub
Seed weevils	<i>Protapion difforme</i>	Notable B	herbivore	herbivore	tall sward & scrub
Seed weevils	<i>Protapion filirostre</i>	Notable B	herbivore	herbivore	short sward & bare ground
Seed weevils	<i>Squamapion cineraceum</i>	Notable A	herbivore	herbivore	short sward & bare ground
Seed weevils	<i>Squamapion flavimanum</i>	Notable A	herbivore	herbivore	short sward & bare ground
False skin beetles	<i>Diplocoelus fagi</i>	Notable B	fungivore	fungivore	decaying wood
Potato beetles	<i>Anommatus duodecimstriatus</i>	Notable A	herbivore	herbivore	
Jewel beetles	<i>Trachys scrobiculatus</i>	Nationally Scarce	herbivore	does not feed	tall sward & scrub
Jewel beetles	<i>Trachys troglodytes</i>	Nationally Rare	herbivore	does not feed	tall sward & scrub
Soldier beetles	<i>Malthodes fibulatus</i>	Nationally Scarce	predator	predator	decaying wood
Soldier beetles	<i>Rhagonycha lutea</i>	Nationally Scarce	predator	predator	arboreal
Ground beetles	<i>Agonum nigrum</i>	Nationally Scarce	predator	predator	acid & sedge peats
Ground beetles	<i>Anthracus consputus</i>	Nationally Scarce	predator	predator	marshland
Ground beetles	<i>Bembidion octomaculatum</i>	Nationally Scarce	predator	predator	marshland
Ground beetles	<i>Bembidion quadripustulatum</i>	Nationally Scarce; S41. Priority Species	predator	predator	marshland
Ground beetles	<i>Brachinus crepitans</i>	Nationally Scarce	predator	predator	short sward & bare ground
Ground beetles	<i>Demetrias monostigma</i>	Nationally Scarce	predator	predator	acid & sedge peats
Ground beetles	<i>Lebia chlorocephala</i>	Nationally Scarce	parasitoid	does not feed	tall sward & scrub
Ground beetles	<i>Notiophilus quadripunctatus</i>	Nationally Scarce	predator	predator	short sward & bare ground
Ground beetles	<i>Ophonus azureus</i>	Nationally Scarce	herbivore		short sward & bare ground
Ground beetles	<i>Scybalicus oblongiusculus</i>	Nationally Rare; IUCN Vulnerable	predator	predator	short sward & bare ground

Ground beetles	<i>Syntomus truncatellus</i>	Nationally Scarce	predator	predator	tall sward & scrub
Ground beetles	<i>Tachys bistriatus</i>	Nationally Scarce	predator	predator	marshland
Longhorn beetles	<i>Paracorymbia fulva</i>	Nationally Scarce	xylophagous		decaying wood
Longhorn beetles	<i>Stictoleptura scutellata</i>	Nationally Scarce	saprophagous; xylophagous		decaying wood
Leaf beetles	<i>Altica brevicollis</i>	Nationally Scarce	herbivore	herbivore	arboreal
Leaf beetles	<i>Chrysolina sturmi</i>	Nationally Scarce	herbivore	herbivore	tall sward & scrub
Leaf beetles	<i>Cryptocephalus hypochaeridis</i>	Nationally Scarce	herbivore	herbivore	short sward & bare ground
Leaf beetles	<i>Cryptocephalus sexpunctatus</i>	IUCN Endangered; Nationally Rare; S41. Priority Species	herbivore	herbivore	arboreal; tall sward & scrub
Leaf beetles	<i>Donacia cinerea</i>	Nationally Scarce	herbivore	herbivore	lake; marshland
Leaf beetles	<i>Epitrix atropae</i>	Nationally Scarce	herbivore	herbivore	tall sward & scrub
Leaf beetles	<i>Gonioctena decemnotata</i>	Nationally Scarce		herbivore	arboreal
Leaf beetles	<i>Longitarsus anchusae</i>	Nationally Scarce	herbivore	herbivore	short sward & bare ground
Leaf beetles	<i>Longitarsus brunneus</i>	Nationally Scarce	herbivore	herbivore	tall sward & scrub
Leaf beetles	<i>Longitarsus lycopi</i>	Nationally Scarce	herbivore	herbivore	short sward & bare ground
Leaf beetles	<i>Longitarsus nigrofasciatus</i>	IUCN Near Threatened; Nationally Rare	herbivore	herbivore	short sward & bare ground
Leaf beetles	<i>Longitarsus oblitteratus</i>	Nationally Scarce	herbivore	herbivore	short sward & bare ground
Leaf beetles	<i>Longitarsus quadriguttatus</i>	Nationally Rare	herbivore	herbivore	short sward & bare ground
Leaf beetles	<i>Longitarsus strigicollis</i>	Nationally Scarce	herbivore	herbivore	short sward & bare ground
Leaf beetles	<i>Lythraria salicariae</i>	Nationally Scarce	herbivore	herbivore	tall sward & scrub

Leaf beetles	<i>Mantura rustica</i>	Nationally Scarce	herbivore	herbivore	tall sward & scrub
Leaf beetles	<i>Podagrica fuscicornis</i>	Nationally Scarce	herbivore	herbivore	tall sward & scrub
Leaf beetles	<i>Podagrica fuscipes</i>	Nationally Scarce	herbivore	herbivore	tall sward & scrub
Leaf beetles	<i>Psylliodes chalconera</i>	Nationally Scarce	herbivore	herbivore	tall sward & scrub
Minute tree fungus beetles	<i>Cis festivus</i>	Notable B	fungivore	fungivore	decaying wood
Silken fungus beetles	<i>Atomaria fimetarii</i>	Notable			
Weevils	<i>Acalles ptinoides</i>	Notable B	xylophagous	unknown	decaying wood
Weevils	<i>Anisandrus dispar</i>	Notable B	fungivore	unknown	decaying wood
Weevils	<i>Aulacobaris picicornis</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Brachysomus echinatus</i>	Notable B	herbivore	herbivore	tall sward & scrub
Weevils	<i>Caenopsis fissirostris</i>	Notable B	herbivore	herbivore	tall sward & scrub
Weevils	<i>Calosirus terminatus</i>	Notable B	herbivore	herbivore	sea cliff; short sward & bare ground
Weevils	<i>Cathormiocerus aristatus</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Cathormiocerus spinosus</i>	Notable A	herbivore	herbivore	short sward & bare ground
Weevils	<i>Cleopomiarus graminis</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Curculio rubidus</i>	Notable B	herbivore	herbivore	arboreal
Weevils	<i>Ernoporicus fagi</i>	Notable A	xylophagous	unknown	decaying wood
Weevils	<i>Glocianus punctiger</i>	Notable B; Section 41 Priority Species	herbivore	herbivore	tall sward & scrub
Weevils	<i>Gronops lunatus</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Gymnetron veronicae</i>	Notable B	herbivore	herbivore	running water
Weevils	<i>Hypera meles</i>	Notable B	herbivore	herbivore	tall sward & scrub

Weevils	<i>Kyklioacalles roboris</i>	Notable B	xylophagous	unknown	decaying wood
Weevils	<i>Liparus coronatus</i>	Notable B	herbivore	herbivore	tall sward & scrub
Weevils	<i>Lymanator coryli</i>	[Threat]	xylophagous	unknown	decaying wood
Weevils	<i>Mecinus janthinus</i>	Notable A	herbivore	herbivore	short sward & bare ground
Weevils	<i>Microplontus campestris</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Mitoplinthus caliginosus</i>	Notable A	herbivore	herbivore	tall sward & scrub
Weevils	<i>Orthochaetes insignis</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Otiorhynchus raucus</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Phytobius leucogaster</i>	Notable B	herbivore	herbivore	lake; marshland
Weevils	<i>Platypus cylindrus</i>	Notable B	xylophagous	unknown	decaying wood
Weevils	<i>Polydrusus formosus</i>	Notable A	herbivore	herbivore	arboreal
Weevils	<i>Sibinia primita</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Sirocalodes quercicola</i>	Notable A	herbivore	herbivore	short sward & bare ground
Weevils	<i>Sitona macularius</i>	Notable B	herbivore	herbivore	tall sward & scrub
Weevils	<i>Sitona waterhousei</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Smicronyx reichii</i>	Red Data Book 3	herbivore	herbivore	short sward & bare ground
Weevils	<i>Stenocarus ruficornis</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Tanymecus palliatus</i>	Notable B	herbivore	herbivore	tall sward & scrub
Weevils	<i>Taphrorychus bicolor</i>	Notable A	xylophagous	unknown	decaying wood
Weevils	<i>Trachodes hispidus</i>	Notable B	unknown	unknown	decaying wood

Weevils	<i>Trachyphloeus alternans</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Trichosirocalus barnevillei</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Trichosirocalus rufulus</i>	Notable A	herbivore	herbivore	short sward & bare ground
Weevils	<i>Tropiphorus elevatus</i>	Notable B	herbivore	herbivore	shaded woodland floor
Weevils	<i>Tychius schneideri</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Tychius squamulatus</i>	Notable B	herbivore	herbivore	short sward & bare ground
Weevils	<i>Xyleborus dryographus</i>	Notable B	fungivore	unknown	decaying wood
Weevils	<i>Zacladus exiguus</i>	Notable B	herbivore	herbivore	tall sward & scrub
Larder beetles	<i>Ctesias serra</i>	Notable B			decaying wood
Diving beetles	<i>Rhantus frontalis</i>	Nationally Scarce	predator	predator	acid & sedge peats
Handsome fungus beetles	<i>Lycoperdina bovistae</i>	Red Data Book 3	fungivore	fungivore	tall sward & scrub
Pleasing fungus beetles	<i>Triplax lacordairii</i>	IUCN Endangered (Europe)	fungivore	fungivore	fungus fruiting bodies
Marsh weevils	<i>Notaris scirpi</i>	Notable B	herbivore	herbivore	marshland
Crawling water beetles	<i>Peltodytes caesus</i>	Nationally Scarce	predator	predator	marshland
Water scavenger beetles	<i>Hydrochus elongatus</i>	Nationally Scarce; IUCN Near Threatened	predator	predator	acid & sedge peats
Water scavenger beetles	<i>Berosus luridus</i>	Nationally Scarce; IUCN Near Threatened	predator	predator	marshland
Water scavenger beetles	<i>Enochrus quadripunctatus</i>	Nationally Scarce	predator	predator	acid & sedge peats
Fungus beetles	<i>Catopidius depressus</i>	Nationally Scarce			
Stag beetles	<i>Lucanus cervus</i>	Nationally Scarce; IUCN Near Threatened (Europe);	saprophagous	does not feed?	decaying wood

		S41. Priority Species			
False fungus beetles	<i>Orchesia micans</i>	Nationally Scarce	fungivore	fungivore	decaying wood
Oil beetles	<i>Lytta vesicatoria</i>	pNationally Rare			
Chafer beetles	<i>Omaloplia ruricola</i>	Nationally Scarce	herbivore	does not feed	short sward & bare ground
Soft-winged flower beetles	<i>Dasytes plumbeus</i>	Nationally Scarce	predator		decaying wood
Tumbling flower beetles	<i>Mordellistena brevicauda</i>	Nationally Rare			
Tumbling flower beetles	<i>Mordellistena humeralis</i>	Nationally Scarce	unknown	nectivore	decaying wood
Tumbling flower beetles	<i>Mordellistena neuwaldeggiana</i>	Nationally Scarce	unknown	nectivore	decaying wood
Tumbling flower beetles	<i>Mordellistena pseudopumila</i>	Nationally Rare			
Tumbling flower beetles	<i>Mordellistena variegata</i>	Nationally Scarce			
Tumbling flower beetles	<i>Variimorda villosa</i>	Nationally Scarce			
Hairy fungus beetles	<i>Pseudotriphyllus suturalis</i>	Nationally Scarce; IUCN Near Threatened (European); IUCN Near Threatened (Global)	fungivore	fungivore	decaying wood
Hairy fungus beetles	<i>Triphyllus bicolor</i>	Nationally Scarce	fungivore	fungivore	decaying wood
Pollen beetles	<i>Meligethes gagathinus</i>	Nationally Scarce			
Pollen beetles	<i>Meligethes solidus</i>	Nationally Scarce			
Pollen beetles	<i>Meligethes umbrosus</i>	Nationally Scarce			
False oil beetles	<i>Oedemera virescens</i>	Nationally Rare	herbivore	nectivore	tall sward & scrub
Phloiophilidae	<i>Phloiophilus edwardsii</i>	Nationally Scarce	fungivore	fungivore	decaying wood
Feather-wing beetles	<i>Nossidium pilosellum</i>	Nationally Scarce	fungivore	fungivore	decaying wood
Leaf rolling weevils	<i>Lasioryhynchites comatus</i>	Notable A	herbivore	herbivore	arboreal

Marsh beetles	<i>Elodes pseudominutus</i>	Nationally Scarce	saprophagous	saprophagous	marshland
False flower beetles	<i>Anaspis costai</i>	Nationally Scarce	predator	nectivore	decaying wood
Flat bark beetles	<i>Uleiota planatus</i>	Notable A			decaying wood
Rove beetles	<i>Anotylus hamatus</i>	Nationally Scarce	predator	predator	tall sward & scrub
Rove beetles	<i>Anotylus insecatus</i>	Nationally Scarce			
Rove beetles	<i>Bolitochara tecta</i>	Nationally Scarce	fungivore	fungivore	decaying wood
Rove beetles	<i>Oxypoda mutata</i>	Nationally Scarce	saprophagous	saprophagous	running water
Rove beetles	<i>Philonthus confinis</i>	Nationally Scarce			
Rove beetles	<i>Quedius riparius</i>	Nationally Scarce	predator	predator	running water
Darkling beetles	<i>Gonodera luperus</i>	Nationally Scarce	unknown	nectivore	decaying wood
Ironclad beetles	<i>Synchita variegata</i>	Nationally Scarce	fungivore	fungivore	decaying wood

Appendix 2 – Species Assemblage Tables

Open Short Sward SAT

Family	Species	SQS ⁸	Larval feeding guild	Adult feeding guild	Habitat fidelity	Associations
Seed weevils	<i>Hemitrichapion waltoni</i>	1	herbivore	herbivore	calcareous grassland: High	Hippocrepis
Seed weevils	<i>Protapion filirostre</i>	4	herbivore	herbivore	calcareous grassland: Moderate	Medicago
Seed weevils	<i>Protapion ononidis</i>	1	herbivore	herbivore	calcareous grassland: Moderate	Ononis repens
Seed weevils	<i>Squamapion atomarium</i>	1	herbivore	herbivore	calcareous grassland: Moderate	Thymus
Seed weevils	<i>Squamapion cineraceum</i>	4	herbivore	herbivore	calcareous grassland: High	Prunella
Seed weevils	<i>Squamapion flavimanum</i>	4	herbivore	herbivore	calcareous grassland: High	Origanum
Leaf beetles	<i>Altica helianthemii</i>	1	herbivore	herbivore	calcareous grassland: High	Helianthemum
Leaf beetles	<i>Aphthona herbigrada</i>	1	herbivore	herbivore	calcareous grassland: High	Helianthemum

⁸ SQS Species Quality Score, a measure of a species rarity used to assess site quality. 1 = widespread, 4 = nationally scarce, 8 = nationally rare/ IUCN Vulnerable, 16 = IUCN Endangered

Leaf beetles	<i>Chrysolina hyperici</i>	1	herbivore	herbivore	calcareous grassland: Low	Hypericum
Leaf beetles	<i>Cryptocephalus fulvus</i>	1	herbivore	herbivore	calcareous grassland: Moderate	
Leaf beetles	<i>Cryptocephalus hypochaeridis</i>	4	herbivore	herbivore	calcareous grassland: Moderate	Asteraceae
Leaf beetles	<i>Cryptocephalus moraei</i>	1	herbivore	herbivore	calcareous grassland: Low	Hypericum
Leaf beetles	<i>Longitarsus anchusae</i>	4	herbivore	herbivore	calcareous grassland: Moderate	Boraginaceae
Leaf beetles	<i>Longitarsus exsoletus</i>	1	herbivore	herbivore	calcareous grassland: Moderate	Boraginaceae
Leaf beetles	<i>Longitarsus lycopi</i>	4	herbivore	herbivore	calcareous grassland: Moderate	Lamiaceae
Leaf beetles	<i>Longitarsus nigrofasciatus</i>	8	herbivore	herbivore	calcareous grassland: High	Scrophulariaceae
Leaf beetles	<i>Longitarsus oblitteratus</i>	4	herbivore	herbivore	calcareous grassland: High	Lamiaceae
Leaf beetles	<i>Longitarsus quadriguttatus</i>	8	herbivore	herbivore	calcareous grassland: Moderate	Cynoglossum
Leaf beetles	<i>Longitarsus strigicollis</i>	4	herbivore	herbivore	calcareous grassland: High, soft rock cliff: 3	Dipsacus
Leaf beetles	<i>Mantura matthewsii</i>	1	herbivore	herbivore	calcareous grassland: High	Helianthemum
Ladybirds	<i>Scymnus frontalis</i>	1	saprophagous	saprophagous		
Weevils	<i>Calosirus terminatus</i>	4	herbivore	herbivore	calcareous grassland: Low, soft rock cliff: 3	Daucus
Weevils	<i>Cleopomiarus graminis</i>	4	herbivore	herbivore	calcareous grassland: High	Campanula
Weevils	<i>Sitona waterhousei</i>	4	herbivore	herbivore	calcareous grassland: Low, soft rock cliff: 3	Lotus
Weevils	<i>Smicronyx reichii</i>	8	herbivore	herbivore	calcareous grassland: High	Centaurea
Weevils	<i>Trachyploeus spinimanus</i>	1	herbivore	herbivore	calcareous grassland: High	
Weevils	<i>Tychius junceus</i>	1	herbivore	herbivore	calcareous grassland: High	Fabaceae
Weevils	<i>Tychius meliloti</i>	1	herbivore	herbivore	calcareous grassland: Low	Melilotus

Weevils	<i>Tychius schneideri</i>	4	herbivore	herbivore	calcareous grassland: Moderate	Anthyllis vulneraria
Weevils	<i>Tychius squamulatus</i>	4	herbivore	herbivore	calcareous grassland: Moderate	Lotus
Weevils	<i>Tychius stephensi</i>	1	herbivore	herbivore	calcareous grassland: Moderate	Trifolium
Click beetles	<i>Agrypnus murinus</i>	1	herbivore	unknown	calcareous grassland: Moderate	
Glow-worms	<i>Lampyris noctiluca</i>	1	parasitoid	does not feed	calcareous grassland: Moderate	Mollusca
Soft-winged flower beetles	<i>Cordylepherus viridis</i>	1	herbivore	nectivore		
Rove beetles	<i>Platystethus capito</i>	1	saprophagous	saprophagous	calcareous grassland: High	
Rove beetles	<i>Stenus ochropus</i>		predator	predator	calcareous grassland: High	
Darkling beetles	<i>Isomira murina</i>	1	herbivore	unknown		

Bare Sand and Chalk SAT

Family	Species	SQS	Larval feeding guild	Adult feeding guild	Habitat fidelity	Associations
Antlike flower beetles	<i>Notoxus monoceros</i>	1	saprophagous	saprophagous		
Ground beetles	<i>Amara eurynota</i>	1	herbivore			
Ground beetles	<i>Brachinus crepitans</i>	4	predator	predator	calcareous grassland: Moderate	
Ground beetles	<i>Cicindela campestris</i>	1	predator	predator	calcareous grassland: Low	
Ground beetles	<i>Harpalus rufipalpis</i>	1	herbivore			
Ground beetles	<i>Notiophilus quadripunctatus</i>	4	predator	predator		
Ground beetles	<i>Ophonus ardosiacus</i>	1	herbivore		calcareous grassland: Moderate	
Ground beetles	<i>Ophonus azureus</i>	4	herbivore		calcareous grassland: Moderate	
Ground beetles	<i>Ophonus puncticeps</i>	1	herbivore			

Ground beetles	<i>Scybalicus oblongiusculus</i>	8	predator	predator		
Weevils	<i>Aulacobaris picicornis</i>	4	herbivore	herbivore	calcareous grassland: High	Reseda
Weevils	<i>Cathormiocerus spinosus</i>	4	herbivore	herbivore	calcareous grassland: Moderate	
Weevils	<i>Mecinus janthinus</i>	4	herbivore	herbivore		Linaria vulgaris
Weevils	<i>Otiorhynchus raucus</i>	4	herbivore	herbivore	calcareous grassland: Moderate	
Weevils	<i>Sirocalodes quercicola</i>	4	herbivore	herbivore		
Weevils	<i>Stenocarus ruficornis</i>	4	herbivore	herbivore		Papaver
Weevils	<i>Trachyploeus alternans</i>	4	herbivore	herbivore	calcareous grassland: Moderate	
Weevils	<i>Trichosirocalus barnevillei</i>	4	herbivore	herbivore		Achillea millefolium
Weevils	<i>Trichosirocalus rufulus</i>	4	herbivore	herbivore		Plantago lanceolata

Scrub-heath and Moorland SAT

Family	Species	SQS	Larval feeding guild	Adult feeding guild	Habitat fidelity	Associations
Seed weevils	<i>Apion haematodes</i>	1				Rumex
Seed weevils	<i>Exapion ulicis</i>	1				Gorse
Ground beetles	<i>Carabus problematicus</i>	1				
Ground beetles	<i>Curtonotus aulicus</i>	1	herbivore			
Ground beetles	<i>Harpalus rufipes</i>	1	herbivore			
Ground beetles	<i>Notiophilus aquaticus</i>	1				
Ground beetles	<i>Ophonus puncticeps</i>	1	herbivore			Daucus
Ground beetles	<i>Pterostichus rhaeticus</i>	1			acid mire: B	
Leaf beetles	<i>Bruchidius villosus</i>	1				Cysticus
Leaf beetles	<i>Longitarsus membranaceus</i>	1				wood sage
Weevils	<i>Andrion regensteinense</i>	1				broom and gorse
Weevils	<i>Sitona striatellus</i>	1				broom and gorse

Scarab beetles	<i>Phyllopertha horticola</i>	<u>1</u>				
Rove beetles	<i>Othius angustus</i>	<u>1</u>				
Rove beetles	<i>Philorinum sordidum</i>	<u>1</u>				

Tall Sward and Scrub Habitat

Family	Species	SQS	Larval feeding guild	Adult feeding guild	Habitat fidelity	Associations
Seed weevils	<i>Apion cruentatum</i>	1	herbivore	herbivore		Rumex
Seed weevils	<i>Apion frumentarium</i>	1	herbivore	herbivore		Rumex
Seed weevils	<i>Aspidapion aeneum</i>	1	herbivore	herbivore		Malvaceae
Seed weevils	<i>Aspidapion radiolus</i>	1	herbivore	herbivore		Malvaceae
Seed weevils	<i>Aspidapion soror</i>	4	herbivore	herbivore		Malvaceae
Seed weevils	<i>Ceratapion carduorum</i>	1	herbivore	herbivore		Carduus, Cirsium
Seed weevils	<i>Ceratapion gibbirostre</i>	1	herbivore	herbivore		Carduus, Cirsium
Seed weevils	<i>Ceratapion onopordi</i>	1	herbivore	herbivore		Carduus, Cirsium
Seed weevils	<i>Eutrichapion viciae</i>	1	herbivore	herbivore		Vicia
Seed weevils	<i>Holotrichapion aethiops</i>	1	herbivore	herbivore		Vicia
Seed weevils	<i>Holotrichapion pisi</i>	1	herbivore	herbivore		Medicago
Seed weevils	<i>Ischnopterapion loti</i>	1	herbivore	herbivore		Lotus
Seed weevils	<i>Ischnopterapion modestum</i>	1	herbivore	herbivore		Lotus
Seed weevils	<i>Ischnopterapion virens</i>	1	herbivore	herbivore		Trifolium
Seed weevils	<i>Malvapion malvae</i>	1	herbivore	herbivore		Malvaceae
Seed weevils	<i>Oxystoma cerdo</i>	4	herbivore	herbivore		Vicia
Seed weevils	<i>Oxystoma pomonae</i>	1	herbivore	herbivore		Vicia
Seed weevils	<i>Perapion affine</i>	4	herbivore	herbivore		Rumex acetosa
Seed weevils	<i>Perapion curtirostre</i>	1	herbivore	herbivore		Rumex

Seed weevils	<i>Perapion hydrolapathi</i>	1	herbivore	herbivore		Rumex
Seed weevils	<i>Perapion violaceum</i>	1	herbivore	herbivore		Rumex
Seed weevils	<i>Protapion apricans</i>	1	herbivore	herbivore		Trifolium
Seed weevils	<i>Protapion assimile</i>	1	herbivore	herbivore		Trifolium
Seed weevils	<i>Protapion difforme</i>	4	herbivore	herbivore		Trifolium
Seed weevils	<i>Protapion fulvipes</i>	1	herbivore	herbivore		Trifolium
Seed weevils	<i>Protapion trifolii</i>	1	herbivore	herbivore		Trifolium
Seed weevils	<i>Pseudapion rufirostre</i>	1	herbivore	herbivore		Malvaceae
Seed weevils	<i>Stenopterapion meliloti</i>	1	herbivore	herbivore		Melilotus
Seed weevils	<i>Stenopterapion tenue</i>	1	herbivore	herbivore		Medicago
Seed weevils	<i>Synapion ebeninum</i>	1	herbivore	herbivore		Lotus
Jewel beetles	<i>Trachys scrobiculatus</i>	4	herbivore	does not feed	calcareous grassland: High	Glechoma
Jewel beetles	<i>Trachys troglodytes</i>	8	herbivore	does not feed	calcareous grassland: Moderate	Succisa pratensis
Fruitworm beetles	<i>Byturus tomentosus</i>	1	herbivore	herbivore		Rubus
Soldier beetles	<i>Cantharis cryptica</i>	1	predator	predator		Arthropoda
Soldier beetles	<i>Cantharis decipiens</i>	1	predator	nectivore		
Soldier beetles	<i>Cantharis flavilabris</i>	1	predator	nectivore		
Soldier beetles	<i>Cantharis lateralis</i>	1	predator	nectivore		
Soldier beetles	<i>Cantharis livida</i>	1	predator	nectivore		
Soldier beetles	<i>Cantharis nigra</i>	1	predator	nectivore		
Soldier beetles	<i>Cantharis nigricans</i>	1	predator	nectivore		
Soldier beetles	<i>Cantharis pallida</i>	1	predator	nectivore		
Soldier beetles	<i>Cantharis pellucida</i>	1	predator	nectivore		
Soldier beetles	<i>Cantharis rufa</i>	1	predator	nectivore		

Soldier beetles	<i>Cantharis rustica</i>	1	predator	nectivore		
Soldier beetles	<i>Rhagonycha fulva</i>	1	predator	predator		Arthropoda
Soldier beetles	<i>Rhagonycha nigriventris</i>	1	predator	predator		
Soldier beetles	<i>Rhagonycha testacea</i>	1	predator	nectivore		
Soldier beetles	<i>Silis ruficollis</i>	1	predator	nectivore		
Ground beetles	<i>Amara communis</i>	1	herbivore			
Ground beetles	<i>Amara familiaris</i>	1	herbivore			
Ground beetles	<i>Amara lunicollis</i>	1	herbivore			
Ground beetles	<i>Amara plebeja</i>	1	herbivore			
Ground beetles	<i>Asaphidion stierlini</i>	1	predator	predator		Arthropoda
Ground beetles	<i>Badister bullatus</i>	1	predator	predator		
Ground beetles	<i>Bradycellus harpalinus</i>	1	predator	predator		
Ground beetles	<i>Bradycellus verbasci</i>	1	herbivore			
Ground beetles	<i>Calathus fuscipes</i>	1	predator	predator		
Ground beetles	<i>Carabus nemoralis</i>	1	predator	predator		
Ground beetles	<i>Carabus violaceus</i>	1	predator	predator		
Ground beetles	<i>Clivina fossor</i>	1	predator	predator		
Ground beetles	<i>Curtonotus aulicus</i>	1	herbivore			
Ground beetles	<i>Cychrus caraboides</i>	1	predator	predator		Mollusca
Ground beetles	<i>Demetrias atricapillus</i>	1	predator	predator		
Ground beetles	<i>Harpalus latus</i>	1	herbivore			
Ground beetles	<i>Harpalus rufipes</i>	1	herbivore			
Ground beetles	<i>Laemostenus terricola</i>	1	predator	predator		
Ground beetles	<i>Lebia chlorocephala</i>	4	parasitoid	does not feed	calcareous grassland: Moderate	

Ground beetles	<i>Leistus ferrugineus</i>	1	predator	predator		
Ground beetles	<i>Leistus rufomarginatus</i>	1	predator	predator		
Ground beetles	<i>Leistus spinibarbis</i>	1	predator	predator	calcareous grassland: Low	
Ground beetles	<i>Nebria brevicollis</i>	1	predator	predator		
Ground beetles	<i>Notiophilus biguttatus</i>	1	predator	predator		Arthropoda
Ground beetles	<i>Notiophilus palustris</i>	1	predator	predator		
Ground beetles	<i>Ophonus rufibarbis</i>	1	herbivore			
Ground beetles	<i>Paradromius linearis</i>	1	predator	predator		
Ground beetles	<i>Pterostichus madidus</i>	1	predator	predator		
Ground beetles	<i>Pterostichus melanarius</i>	1	predator	predator		
Ground beetles	<i>Pterostichus niger</i>	1	predator	predator		
Ground beetles	<i>Pterostichus strenuus</i>	1	predator	predator		
Ground beetles	<i>Pterostichus vernalis</i>	1	predator	predator		
Ground beetles	<i>Stomis pumicatus</i>	1	predator	predator		
Ground beetles	<i>Syntomus obscuroguttatus</i>	1	predator	predator		
Ground beetles	<i>Syntomus truncatellus</i>	4	predator	predator		Arthropoda
Ground beetles	<i>Synuchus vivalis</i>	1	predator	predator		
Ground beetles	<i>Trechus obtusus</i>	1	predator	predator	coarse woody debris: d/e	
Ground beetles	<i>Trechus quadristriatus</i>	1	predator	predator		
Longhorn beetles	<i>Agapanthia villosiviridescens</i>	1	herbivore			Carduus, Cirsium
Longhorn beetles	<i>Pseudovadonia livida</i>	1	fungivore			Marasmius oreades
Leaf beetles	<i>Altica lythri</i>	1	herbivore	herbivore		Epilobium
Leaf beetles	<i>Aphthona euphorbiae</i>	1	herbivore	herbivore		Asteraceae
Leaf beetles	<i>Aphthona melancholica</i>	1	herbivore	herbivore		Euphorbia amygdaloides

Leaf beetles	<i>Apteropeda orbiculata</i>	1	herbivore	herbivore		Plantago
Leaf beetles	<i>Batophila aerata</i>	1	herbivore	herbivore		Rosaceae
Leaf beetles	<i>Batophila rubi</i>	1	herbivore	herbivore		Rosaceae
Leaf beetles	<i>Bruchidius varius</i>	1	herbivore	herbivore		Trifolium
Leaf beetles	<i>Bruchus atomarius</i>	1	herbivore	herbivore		Lathyrus, Vicia
Leaf beetles	<i>Bruchus loti</i>	1	herbivore	herbivore		Lathyrus, Vicia
Leaf beetles	<i>Bruchus rufimanus</i>	1	herbivore	herbivore		Lathyrus, Vicia
Leaf beetles	<i>Cassida flaveola</i>	1	herbivore	herbivore		Stellaria
Leaf beetles	<i>Cassida rubiginosa</i>	1	herbivore	herbivore		Cirsium
Leaf beetles	<i>Chaetocnema concinna</i>	1	herbivore	herbivore		Polygonaceae
Leaf beetles	<i>Chaetocnema hortensis</i>	1	herbivore	herbivore		Poaceae
Leaf beetles	<i>Chaetocnema picipes</i>	1	herbivore	herbivore		Polygonaceae
Leaf beetles	<i>Chrysolina polita</i>	1	herbivore	herbivore		Urtica dioica
Leaf beetles	<i>Chrysolina staphylaea</i>	1	herbivore	herbivore		Asteraceae
Leaf beetles	<i>Chrysolina sturmi</i>	4	herbivore	herbivore	calcareous grassland: Moderate	Glechoma
Leaf beetles	<i>Cryptocephalus sexpunctatus</i>	16	herbivore	herbivore		Corylus, Populus, Salix
Leaf beetles	<i>Derocrepis rufipes</i>	1	herbivore	herbivore		Fabaceae
Leaf beetles	<i>Epitrix atropae</i>	4	herbivore	herbivore		Solanaceae
Leaf beetles	<i>Gastrophysa polygoni</i>	1	herbivore	herbivore		Polygonaceae
Leaf beetles	<i>Hippuriphila modeeri</i>	1	herbivore	herbivore		Equisetum
Leaf beetles	<i>Longitarsus atricillus</i>	1	herbivore	herbivore		Asteraceae
Leaf beetles	<i>Longitarsus brunneus</i>	4	herbivore	herbivore		Thalictrum flavum
Leaf beetles	<i>Longitarsus flavicornis</i>	1	herbivore	herbivore		Senecio
Leaf beetles	<i>Longitarsus kutscherae</i>	1	herbivore	herbivore		Plantago
Leaf beetles	<i>Longitarsus luridus</i>	1	herbivore	herbivore		Asteraceae
Leaf beetles	<i>Longitarsus melanocephalus</i>	1	herbivore	herbivore		Asteraceae
Leaf beetles	<i>Longitarsus parvulus</i>	1	herbivore	herbivore		Linum

Leaf beetles	<i>Longitarsus pratensis</i>	1	herbivore	herbivore		Plantago
Leaf beetles	<i>Longitarsus succineus</i>	1	herbivore	herbivore		Asteraceae
Leaf beetles	<i>Longitarsus suturellus</i>	1	herbivore	herbivore		Asteraceae
Leaf beetles	<i>Lythraia salicariae</i>	4	herbivore	herbivore		Lysimachia
Leaf beetles	<i>Mantura rustica</i>	4	herbivore	herbivore		Rumex
Leaf beetles	<i>Neocrepidodera ferruginea</i>	1	herbivore	herbivore		Asteraceae
Leaf beetles	<i>Oulema duftschmidi/melanopus agg.</i>	1	herbivore	herbivore		Poaceae
Leaf beetles	<i>Phaedon tumidulus</i>	1	herbivore	herbivore		Apiaceae
Leaf beetles	<i>Phyllotreta exclamationis</i>	1	herbivore	herbivore		Cardamine, Rorippa
Leaf beetles	<i>Phyllotreta nemorum</i>	1	herbivore	herbivore		Brassicaceae
Leaf beetles	<i>Phyllotreta nigripes</i>	1	herbivore	herbivore		Brassicaceae
Leaf beetles	<i>Phyllotreta ochripes</i>	1	herbivore	herbivore		Brassicaceae
Leaf beetles	<i>Phyllotreta undulata</i>	1	herbivore	herbivore		Brassicaceae
Leaf beetles	<i>Phyllotreta vittula</i>	1	herbivore	herbivore		Brassicaceae
Leaf beetles	<i>Podagrica fuscicornis</i>	4	herbivore	herbivore		Malvaceae
Leaf beetles	<i>Podagrica fuscipes</i>	4	herbivore	herbivore		Malvaceae
Leaf beetles	<i>Psylliodes affinis</i>	1	herbivore	herbivore		Solanum
Leaf beetles	<i>Psylliodes chalcomera</i>	4	herbivore	herbivore		Carduus, Cirsium
Leaf beetles	<i>Psylliodes chrysocephala</i>	1	herbivore	herbivore		Brassicaceae
Leaf beetles	<i>Psylliodes dulcamarae</i>	1	herbivore	herbivore		
Leaf beetles	<i>Psylliodes picina</i>	1	herbivore	herbivore		Asteraceae
Leaf beetles	<i>Sermylassa halensis</i>	1	herbivore	herbivore	calcareous grassland: Moderate	Galium
Leaf beetles	<i>Sphaeroderma rubidum</i>	1	herbivore	herbivore		Asteraceae
Leaf beetles	<i>Sphaeroderma testaceum</i>	1	herbivore	herbivore		Asteraceae
Chequered beetles	<i>Necrobia violacea</i>	1	necrophagous	necrophagous		Carrion

Ladybirds	<i>Psyllobora vigintiduopunctata</i>	1	saprophagous	saprophagous		
Ladybirds	<i>Rhyzobius litura</i>	1	saprophagous	saprophagous		
Ladybirds	<i>Scymnus haemorrhoidalis</i>	1	saprophagous	saprophagous		
Ladybirds	<i>Subcoccinella vigintiquattuorpunctata</i>	1	predator	predator		
Ladybirds	<i>Tytthaspis sedecimpunctata</i>	1	saprophagous	saprophagous		
Weevils	<i>Anthonomus rubi</i>	1	herbivore	herbivore		Rosaceae
Weevils	<i>Barynotus obscurus</i>	1	herbivore	herbivore	calcareous grassland: Low	Asteraceae
Weevils	<i>Brachysomus echinatus</i>	4	herbivore	herbivore	calcareous grassland: Low	Asteraceae
Weevils	<i>Caenopsis fissirostris</i>	4	herbivore	herbivore		
Weevils	<i>Ceutorhynchus erysimi</i>	1	herbivore	herbivore		Capsella bursa-pastoris
Weevils	<i>Ceutorhynchus obstrictus</i>	1	herbivore	herbivore		Brassicaceae
Weevils	<i>Ceutorhynchus typhae</i>	1	herbivore	herbivore		Brassicaceae
Weevils	<i>Cionus alauda</i>	1	herbivore	herbivore		Scrophularia
Weevils	<i>Cionus hortulanus</i>	1	herbivore	herbivore		Scrophularia
Weevils	<i>Cionus scrophulariae</i>	1	herbivore	herbivore		Scrophularia
Weevils	<i>Cionus tuberculosus</i>	1	herbivore	herbivore		Scrophularia
Weevils	<i>Cleopus pulchellus</i>	1	herbivore	herbivore		Scrophularia
Weevils	<i>Datonychus melanostictus</i>	1	herbivore	herbivore		Lycopus europaeus
Weevils	<i>Exomias araneiformis</i>	1	herbivore	herbivore		
Weevils	<i>Exomias pellucidus</i>	1	herbivore	herbivore		
Weevils	<i>Glocianus punctiger</i>	4	herbivore	herbivore		Taraxacum
Weevils	<i>Hypera meles</i>	4	herbivore	herbivore	calcareous grassland: Low	

Weevils	<i>Hypera nigrirostris</i>	1	herbivore	herbivore	calcareous grassland: Low	
Weevils	<i>Hypera plantaginis</i>	1	herbivore	herbivore	calcareous grassland: Low	
Weevils	<i>Leiosoma deflexum</i>	1	herbivore	herbivore		
Weevils	<i>Liophloeus tessulatus</i>	1	herbivore	herbivore		Apiaceae
Weevils	<i>Liparus coronatus</i>	4	herbivore	herbivore		Heracleum
Weevils	<i>Mecinus pascuorum</i>	1	herbivore	herbivore	calcareous grassland: Low	Plantago
Weevils	<i>Mecinus pyraeter</i>	1	herbivore	herbivore		Plantago
Weevils	<i>Microplontus melanostigma</i>	1	herbivore	herbivore		Asteraceae
Weevils	<i>Mitoplinthus caliginosus</i>	4	herbivore	herbivore		Asteraceae
Weevils	<i>Nedys quadrimaculatus</i>	1	herbivore	herbivore		Urtica dioica
Weevils	<i>Otiorhynchus tenebriosus</i>	1	herbivore	herbivore	calcareous grassland: Low	Asteraceae
Weevils	<i>Parethelcus pollinarius</i>	1	herbivore	herbivore		Urtica dioica
Weevils	<i>Phyllobius pomaceus</i>	1	herbivore	herbivore		Urtica dioica
Weevils	<i>Phyllobius roboretanus</i>	1	herbivore	herbivore	calcareous grassland: Low	Asteraceae
Weevils	<i>Sciaphilus asperatus</i>	1	herbivore	herbivore		Asteraceae
Weevils	<i>Sitona hispidulus</i>	1	herbivore	herbivore		Trifolium
Weevils	<i>Sitona lineatus</i>	1	herbivore	herbivore		Vicia
Weevils	<i>Sitona macularius</i>	4	herbivore	herbivore	calcareous grassland: Low	Trifolium, Vicia
Weevils	<i>Sitona obsoletus</i>	1	herbivore	herbivore		Trifolium
Weevils	<i>Sitona sulcifrons</i>	1	herbivore	herbivore	calcareous grassland: Low	Trifolium
Weevils	<i>Tanymecus palliatus</i>	4	herbivore	herbivore		Asteraceae
Weevils	<i>Trichosirocalus troglodytes</i>	1	herbivore	herbivore		Plantago
Weevils	<i>Tychius picirostris</i>	1	herbivore	herbivore		Trifolium
Weevils	<i>Zacladus exiguus</i>	4	herbivore	herbivore		Geranium

Orchid beetles	<i>Dascillus cervinus</i>	1	herbivore	does not feed	calcareous grassland: Low	Poaceae
False firefly beetles	<i>Drilus flavescens</i>	1	predator	does not feed	calcareous grassland: High	Mollusca
Click beetles	<i>Adrastus pallens</i>	1	herbivore	does not feed		Asteraceae
Click beetles	<i>Agriotes acuminatus</i>	1	herbivore	does not feed		Asteraceae
Click beetles	<i>Agriotes lineatus</i>	1	herbivore	does not feed		Asteraceae
Click beetles	<i>Agriotes obscurus</i>	1	herbivore	does not feed		Asteraceae
Click beetles	<i>Agriotes pallidulus</i>	1	herbivore	does not feed		
Click beetles	<i>Agriotes sputator</i>	1	herbivore	does not feed		Asteraceae
Click beetles	<i>Athous bicolor</i>	1	herbivore	does not feed		
Click beetles	<i>Athous haemorrhoidalis</i>	1	herbivore	does not feed		
Click beetles	<i>Dalopius marginatus</i>	1	herbivore	does not feed		
Click beetles	<i>Hemicrepidius hirtus</i>	1	herbivore	does not feed		Asteraceae
Handsome fungus beetles	<i>Lycoperdina bovistae</i>	8	fungivore	fungivore	calcareous grassland: Low	
Dor beetles	<i>Geotrupes spiniger</i>	1	coprophagous	does not feed		Dung
Dor beetles	<i>Geotrupes stercorarius</i>	1	coprophagous	does not feed		Dung
Clown beetles	<i>Hister unicolor</i>	1	predator	predator		Dung
Water scavenger beetles	<i>Cercyon haemorrhoidalis</i>	1	predator	predator		
Water scavenger beetles	<i>Cercyon impressus</i>	1	predator	predator		
Water scavenger beetles	<i>Cercyon lateralis</i>	1	predator	predator		
Water scavenger beetles	<i>Cercyon melanocephalus</i>	1	predator	predator		
Water scavenger beetles	<i>Cercyon pygmaeus</i>	1	predator	predator		

Water scavenger beetles	<i>Cercyon terminatus</i>	1	predator	predator		
Water scavenger beetles	<i>Cercyon unipunctatus</i>	1	predator	predator		
Water scavenger beetles	<i>Cryptopleurum minutum</i>	1	predator	predator		
Water scavenger beetles	<i>Megasternum concinnum/immaculatum agg.</i>	1	saprophagous	saprophagous		
Water scavenger beetles	<i>Sphaeridium bipustulatum</i>	1	coprophagous	unknown		Dung
Water scavenger beetles	<i>Sphaeridium lunatum</i>	1	coprophagous	unknown		Dung
Water scavenger beetles	<i>Sphaeridium scarabaeoides</i>	1	coprophagous	unknown		Dung
Short-winged flower beetles	<i>Brachypterolus pulicarius</i>	1				Linaria
Short-winged flower beetles	<i>Brachypterus glaber</i>	1	herbivore	herbivore		Asteraceae
Short-winged flower beetles	<i>Brachypterus urticae</i>	1	herbivore	herbivore		Asteraceae
Cockchafer	<i>Amphimallon solstitiale</i>	1	herbivore	does not feed		
Pollen beetles	<i>Cychramus luteus</i>	1				Fungi
Pollen beetles	<i>Nitidula carnaria</i>		necrophagous	necrophagous		Carrion
Pollen beetles	<i>Nitidula rufipes</i>	1	necrophagous	necrophagous		Carrion
Pollen beetles	<i>Omosita colon</i>	1	necrophagous	necrophagous		Carrion
Pollen beetles	<i>Omosita discoidea</i>	1	necrophagous	necrophagous		Carrion
Pollen beetles	<i>Pocadius ferrugineus</i>	1				Calvatia
Pollen beetles	<i>Pria dulcamarae</i>	1	herbivore	herbivore		Solanum
False oil beetles	<i>Oedemera lurida</i>	1	predator	predator		

False oil beetles	<i>Oedemera nobilis</i>	1	herbivore	nectivore		
False-blister beetles	<i>Oedemera virescens</i>	8	herbivore	nectivore		
Tooth-nosed snout weevils	<i>Neocoenorrhinus germanicus</i>	1	herbivore	herbivore		Cornus
Scarab beetles	<i>Acrossus rufipes</i>	1	coprophagous	does not feed		Dung
Scarab beetles	<i>Agrilinus ater</i>	1	coprophagous	does not feed		Dung
Scarab beetles	<i>Bodilopsis rufa</i>	1	coprophagous	does not feed		Dung
Scarab beetles	<i>Calamosternus granarius</i>	1	coprophagous	does not feed		Dung
Scarab beetles	<i>Esymus pusillus</i>	1	coprophagous	does not feed		Dung
Scarab beetles	<i>Hoplia philanthus</i>	1	herbivore	does not feed		Asteraceae
Scarab beetles	<i>Limarus zenkeri</i>	1	coprophagous	does not feed		Dung
Scarab beetles	<i>Melolontha melolontha</i>	1	herbivore	does not feed		Asteraceae
Scarab beetles	<i>Nimbus obliterated</i>	1	coprophagous	does not feed		Dung
Scarab beetles	<i>Onthophagus coenobita</i>	1	coprophagous	does not feed		Dung
Scarab beetles	<i>Otophorus haemorrhoidalis</i>	1	coprophagous	does not feed		Dung
Scarab beetles	<i>Rhodaphodius foetens</i>	1	coprophagous	does not feed		Dung
Scarab beetles	<i>Serica brunnea</i>	1	herbivore	does not feed		Asteraceae
Scarab beetles	<i>Volinus sticticus</i>	1	coprophagous	does not feed		Dung
Burying beetles	<i>Nicrophorus humator</i>	1	necrophagous	does not feed		Carrion
Burying beetles	<i>Nicrophorus investigator</i>	1	necrophagous	does not feed		Carrion
Burying beetles	<i>Nicrophorus vespilloides</i>	1	necrophagous	does not feed		Carrion
Burying beetles	<i>Thanatophilus rugosus</i>	1	necrophagous	necrophagous		Carrion
Burying beetles	<i>Thanatophilus sinuatus</i>	1	necrophagous	necrophagous		Carrion
Rove beetles	<i>Acrolocha sulcula</i>	1	saprophagous	saprophagous		
Rove beetles	<i>Acrotona aterrima</i>	1				

Rove beetles	<i>Acrotona muscorum</i>	1				
Rove beetles	<i>Aleochara cuniculorum</i>	1	parasitoid	does not feed		
Rove beetles	<i>Aleochara curtula</i>	1	parasitoid	does not feed		Carrion
Rove beetles	<i>Aleochara intricata</i>	1	parasitoid	does not feed		Dung
Rove beetles	<i>Amischa nigrofusca</i>	1				
Rove beetles	<i>Anotylus complanatus</i>	1	predator	predator		
Rove beetles	<i>Anotylus hamatus</i>	4	predator	predator		
Rove beetles	<i>Anotylus sculpturatus</i>	1	predator	predator		
Rove beetles	<i>Anotylus tetracarınatus</i>	1	predator	predator		Dung
Rove beetles	<i>Atheta aeneicollis</i>	1				
Rove beetles	<i>Atheta amicula</i>	1				Fungi
Rove beetles	<i>Atheta atramentaria</i>	1	predator	predator		
Rove beetles	<i>Atheta celata</i>	1				Dung and Carrion
Rove beetles	<i>Atheta fungivora</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Atheta longicornis</i>	1				Dung and Carrion
Rove beetles	<i>Atheta nigra</i>	1	saprophagous	saprophagous		
Rove beetles	<i>Atheta oblita</i>	1				
Rove beetles	<i>Atheta triangulum</i>	1				
Rove beetles	<i>Atheta trinotata</i>	1				
Rove beetles	<i>Autalia rivularis</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Bisnius fimetarius</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Bisnius sordidus</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Bryaxis curtisii</i>	1	predator	predator		
Rove beetles	<i>Callicerus obscurus</i>	1				
Rove beetles	<i>Drusilla canaliculata</i>	1	predator	predator		

Rove beetles	<i>Encephalus complicans</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Eusphalerum luteum</i>	1	herbivore	herbivore		Asteraceae
Rove beetles	<i>Eusphalerum primulae</i>	1	herbivore	herbivore		Asteraceae
Rove beetles	<i>Geostiba circellaris</i>	1				
Rove beetles	<i>Gyrophypnus angustatus</i>	1	predator	predator		
Rove beetles	<i>Gyrophypnus fracticornis</i>	1	predator	predator		
Rove beetles	<i>Gyrophypnus punctulatus</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Heterothops niger</i>		predator	predator		Mammalia
Rove beetles	<i>Megalinus glabratus</i>	1	predator	predator		
Rove beetles	<i>Megarthus depressus</i>	1				
Rove beetles	<i>Metopsia clypeata</i>	1				
Rove beetles	<i>Micropeplus staphylinoides</i>	1				
Rove beetles	<i>Ocypus olens</i>	1	predator	predator		
Rove beetles	<i>Oligota inflata</i>		predator	predator		
Rove beetles	<i>Omalium caesum</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Omalium excavatum</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Ontholestes murinus</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Othius laeviusculus</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Othius punctulatus</i>	1	predator	predator		
Rove beetles	<i>Othius subuliformis</i>	1	predator	predator		
Rove beetles	<i>Oxypoda brevicornis</i>	1				
Rove beetles	<i>Oxypoda opaca</i>	1				
Rove beetles	<i>Oxytelus laqueatus</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Philonthus addendus</i>	1	predator	predator		Dung and Carrion

Rove beetles	<i>Philonthus carbonarius</i>	1	predator	predator		
Rove beetles	<i>Philonthus cognatus</i>	1	predator	predator		
Rove beetles	<i>Philonthus laminatus</i>	1	predator	predator		
Rove beetles	<i>Philonthus marginatus</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Philonthus varians</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Plataraea brunnea</i>	1	predator	predator		
Rove beetles	<i>Platydracus stercorarius</i>	1	predator	predator		
Rove beetles	<i>Platystethus arenarius</i>	1	coprophagous	coprophagous		Dung and Carrion
Rove beetles	<i>Quedius levicollis</i>	1	predator	predator		
Rove beetles	<i>Quedius molochinus</i>	1	predator	predator		
Rove beetles	<i>Quedius nemoralis</i>	1	predator	predator		
Rove beetles	<i>Quedius semiaeneus</i>	1	predator	predator		
Rove beetles	<i>Rugilus orbiculatus</i>	1	predator	predator		
Rove beetles	<i>Sepedophilus immaculatus</i>	1	predator	predator	calcareous grassland: Moderate	
Rove beetles	<i>Sepedophilus marshami</i>	1	predator	predator		
Rove beetles	<i>Sepedophilus nigripennis</i>	1	predator	predator		
Rove beetles	<i>Stenus aceris</i>	1	predator	predator		
Rove beetles	<i>Stenus clavicornis</i>	1	predator	predator	coarse woody debris: d/e	
Rove beetles	<i>Stenus fulvicornis</i>	1	predator	predator		
Rove beetles	<i>Stenus ossium</i>	1	predator	predator		
Rove beetles	<i>Stenus picipes</i>	1	predator	predator		
Rove beetles	<i>Stenus similis</i>	1	predator	predator		
Rove beetles	<i>Stenus subaeneus</i>	1	predator	predator		
Rove beetles	<i>Sunius propinquus</i>	1	predator	predator		

Rove beetles	<i>Tachinus laticollis</i>	1	predator	predator		Dung and Carrion
Rove beetles	<i>Tachinus rufipes</i>	1	predator	predator		
Rove beetles	<i>Tachinus subterraneus</i>	1	predator	predator		
Rove beetles	<i>Tachyporus chrysomelinus</i>	1	predator	predator		
Rove beetles	<i>Tachyporus dispar</i>	1	predator	predator		
Rove beetles	<i>Tachyporus hypnorum</i>	1	predator	predator		
Rove beetles	<i>Tachyporus nitidulus</i>	1	predator	predator		
Rove beetles	<i>Tachyporus obtusus</i>	1	predator	predator		
Rove beetles	<i>Tachyporus pusillus</i>	1	predator	predator		
Rove beetles	<i>Tachyporus solutus</i>	1	predator	predator		
Rove beetles	<i>Tinotus morion</i>	1	predator	predator		
Rove beetles	<i>Xantholinus linearis</i>	1	predator	predator		
Rove beetles	<i>Xantholinus longiventris</i>	1	predator	predator		
Darkling beetles	<i>Lagria hirta</i>	1	predator	predator		
Darkling beetles	<i>Nalassus laevioctostriatus</i>	1	herbivore	herbivore		Ascomycota, Plantae
Small false click beetles	<i>Trixagus carinifrons</i>	1	herbivore	does not feed		Asteraceae
Small false click beetles	<i>Trixagus dermestoides</i>	1	herbivore	does not feed		Asteraceae
Small false click beetles	<i>Trixagus obtusus</i>		herbivore	does not feed		

Arboreal Habitat

Family	Species	SQS	Larval feeding guild	Adult feeding guild	Associations
Soldier beetles	<i>Rhagonycha lignosa</i>	1		herbivore	Arthropoda, Fagales
Soldier beetles	<i>Rhagonycha lutea</i>	4		herbivore	Arthropoda, Fagales
Ground beetles	<i>Calodromius spilotus</i>	1		herbivore	Fagales
Ground beetles	<i>Dromius meridionalis</i>	1		herbivore	Fagales
Ground beetles	<i>Dromius quadrimaculatus</i>	1	predator	predator	Fagales
Leaf Beetles	<i>Altica brevicollis</i>	4	predator	predator	Corylus avellana
Leaf Beetles	<i>Crepidodera aurata</i>	1	predator	predator	

Leaf Beetles	<i>Crepidodera aurea</i>	1	predator	predator	
Leaf Beetles	<i>Crepidodera fulvicornis</i>	1		predator	
Leaf Beetles	<i>Crepidodera plutus</i>	1	predator	predator	
Leaf Beetles	<i>Cryptocephalus labiatus</i>	1	predator	predator	
Leaf Beetles	<i>Cryptocephalus pusillus</i>	1	predator	predator	
Leaf Beetles	<i>Cryptocephalus sexpunctatus</i>	16	herbivore	herbivore	Corylus, Populus, Salix
Leaf Beetles	<i>Gonioctena decemnotata</i>	4	herbivore	herbivore	
Leaf Beetles	<i>Lochmaea crataegi</i>	1	herbivore	herbivore	
Leaf Beetles	<i>Phratora laticollis</i>	1	herbivore	herbivore	
Leaf Beetles	<i>Phratora vitellinae</i>	1	herbivore	herbivore	
Leaf Beetles	<i>Pyrrhalta viburni</i>	1	herbivore	herbivore	
Ladybirds	<i>Adalia decempunctata</i>	1	herbivore	herbivore	Aphididae, Fagales
Ladybirds	<i>Calvia quattuordecimguttata</i>	1	herbivore	herbivore	Aphididae, Fagales
Ladybirds	<i>Chilocorus renipustulatus</i>	1	herbivore	herbivore	Aphididae, Fagales
Ladybirds	<i>Exochomus quadripustulatus</i>	1	herbivore	herbivore	Aphididae, Fagales
Ladybirds	<i>Halyzia sedecimguttata</i>	1	herbivore	herbivore	Stachybotrys
Ladybirds	<i>Harmonia quadripunctata</i>	1	herbivore	herbivore	Aphididae, Fagales
Ladybirds	<i>Rhyzobius chrysomeloides</i>		herbivore	herbivore	Aphididae, Fagales
Ladybirds	<i>Scymnus auritus</i>	1	herbivore	herbivore	Aphididae, Fagales
Weevils	<i>Anthonomus pedicularius</i>	1	herbivore	herbivore	
Weevils	<i>Archarius pyrrhoceras</i>	1	herbivore	herbivore	
Weevils	<i>Archarius salicivorus</i>	1	herbivore	herbivore	
Weevils	<i>Curculio glandium</i>	1	herbivore	herbivore	
Weevils	<i>Curculio rubidus</i>	4	herbivore	herbivore	
Weevils	<i>Curculio venosus</i>	1	herbivore	herbivore	
Weevils	<i>Dorytomus taeniatus</i>	1	herbivore	herbivore	
Weevils	<i>Dorytomus tortrix</i>	1	herbivore	herbivore	
Weevils	<i>Orchestes alni</i>	1	herbivore	herbivore	
Weevils	<i>Orchestes fagi</i>	1	herbivore	herbivore	
Weevils	<i>Orchestes hortorum</i>	1	herbivore	herbivore	
Weevils	<i>Orchestes quercus</i>	1	herbivore	herbivore	
Weevils	<i>Orchestes rusci</i>	1	herbivore	herbivore	
Weevils	<i>Otiorhynchus singularis</i>	1	herbivore	herbivore	
Weevils	<i>Phyllobius argentatus</i>	1	herbivore	herbivore	
Weevils	<i>Phyllobius oblongus</i>	1	herbivore	herbivore	
Weevils	<i>Phyllobius pyri</i>	1	herbivore	herbivore	
Weevils	<i>Polydrusus cervinus</i>	1	herbivore	herbivore	
Weevils	<i>Polydrusus formosus</i>	4	herbivore	herbivore	
Weevils	<i>Rhamphus oxyacanthae</i>	1	herbivore	herbivore	
Weevils	<i>Rhamphus pulicarius</i>	1	herbivore	herbivore	
Weevils	<i>Strophosoma melanogrammum</i>	1	herbivore	herbivore	
Weevils	<i>Tachyerges salicis</i>	1	herbivore	herbivore	
Leaf rolling weevils	<i>Apoderus coryli</i>	1	herbivore	herbivore	
Leaf rolling weevils	<i>Caenorhinus mannerheimii</i>	1	herbivore	herbivore	

Leaf rolling weevils	<i>Deporaus betulae</i>	1	herbivore	herbivore	
Leaf rolling weevils	<i>Involvulus icosandriae</i>	1	herbivore	herbivore	
Leaf rolling weevils	<i>Lasioryhynchites comatus</i>	4	herbivore	herbivore	
Leaf rolling weevils	<i>Tatianaerhynchites aequatus</i>	1	herbivore	herbivore	
Leaf rolling weevils	<i>Temnocerus nanus</i>	1	herbivore	herbivore	
Darkling beetles	<i>Nalassus laevioctostriatus</i>	1			Ascomycota, Plantae

Shaded Woodland Floor Habitat

Family	Species	SQS	Larval feeding guild	Adult feeding guild	Associations
Seed weevils	<i>Kalcapion pallipes</i>	1	herbivore	herbivore	Mercurialis perennis, Plantae
Ground beetles	<i>Abax parallelepipedus</i>	1	predator	predator	
Ground beetles	<i>Bembidion clarkii</i>	1	predator	predator	
Ground beetles	<i>Bembidion doris</i>	1	predator	predator	
Ground beetles	<i>Calathus rotundicollis</i>	1	predator	predator	
Ground beetles	<i>Elaphrus cupreus</i>	1	predator	predator	
Ground beetles	<i>Leistus fulvibarbis</i>	1	predator	predator	
Ground beetles	<i>Notiophilus rufipes</i>	1	predator	predator	Arthropoda, Plantae
Ground beetles	<i>Oxypselaphus obscurus</i>	1	predator	predator	Arthropoda, Plantae
Leaf beetles	<i>Hermaphysa mercurialis</i>	1	herbivore	herbivore	Mercurialis perennis, Plantae
Weevils	<i>Tropiphorus elevatus</i>	4	herbivore	herbivore	Asteraceae, Plantae
Water beetles	<i>Hydroporus palustris</i>	1	predator	predator	Arthropoda, Plantae
Burying beetles	<i>Phosphuga atrata</i>	1	predator	predator	Arthropoda, Fagales
Rove beetles	<i>Anthobium atrocephalum</i>	1	predator	predator	Arthropoda, Plantae
Rove beetles	<i>Anthobium unicolor</i>	1	predator	predator	Arthropoda, Plantae
Rove beetles	<i>Atheta aquatica</i>	1	saprophagous	saprophagous	Plantae
Rove beetles	<i>Atheta cauta</i>	1	fungivore	fungivore	Fungi, Plantae
Rove beetles	<i>Atheta crassicornis</i>	1	saprophagous	saprophagous	Plantae
Rove beetles	<i>Atheta marcida</i>	1	fungivore	fungivore	Fungi, Plantae
Rove beetles	<i>Atheta sodalis</i>	1	saprophagous	saprophagous	Fungi, Plantae
Rove beetles	<i>Autalia impressa</i>	1	fungivore	fungivore	Fungi, Plantae
Rove beetles	<i>Autalia longicornis</i>	1	fungivore	fungivore	Fungi, Plantae
Rove beetles	<i>Cypha longicornis</i>	1	saprophagous	saprophagous	Plantae

Rove beetles	<i>Dalotia coriaria</i>	1	saprophagous	saprophagous	Plantae
Rove beetles	<i>Habrocerus capillaricornis</i>	1	saprophagous	saprophagous	Plantae
Rove beetles	<i>Lordithon thoracicus</i>	1	fungivore	fungivore	Fungi, Plantae
Rove beetles	<i>Lordithon trinotatus</i>	1	fungivore	fungivore	Fungi, Plantae
Rove beetles	<i>Medon brunneus</i>	1	predator	predator	Arthropoda, Plantae
Rove beetles	<i>Omalium rivulare</i>	1	saprophagous	saprophagous	Plantae
Rove beetles	<i>Oxypoda acuminata</i>	1	saprophagous	saprophagous	Plantae
Rove beetles	<i>Oxypoda alternans</i>	1	saprophagous	saprophagous	Plantae
Rove beetles	<i>Philonthus decorus</i>	1	predator	predator	Arthropoda, Plantae
Rove beetles	<i>Proteinus brachypterus</i>	1	saprophagous	saprophagous	Plantae
Rove beetles	<i>Proteinus ovalis</i>	1	saprophagous	saprophagous	Plantae
Rove beetles	<i>Rybaxis longicornis</i>	1	predator	predator	Arthropoda, Plantae
Rove beetles	<i>Stenus bimaculatus</i>	1	predator	predator	
Rove beetles	<i>Tachinus humeralis</i>	1	predator	predator	Arthropoda, Plantae

Heart Wood Decay SAT

Family	Species	SQS	Resources	Habitat fidelity	Associations
Ant-like leaf beetles	<i>Euglenes oculatus</i>	4	decaying broadleaved wood; red rot	IEC: 1	Quercus
Longhorn beetles	<i>Stictoleptura scutellata</i>	4	broadleaved dead trunks & branches; white rot, flowers (adult)	IEC: 3	Fagus, Plantae
Weevils	<i>Phloeophagus lignarius</i>	1	broadleaved heartrot		Fagales
Click beetles	<i>Ischnodes sanguinicollis</i>	4	decaying broadleaved wood; moist white rot, heartrot; hollow tree cavities	IEC: 2	Fagus, Ulmus
Clown beetles	<i>Abraeus perpusillus</i>	1	decaying broadleaved wood; moist white rot, heartrot; wet hollows; rot hole detritus		Fagales
Stag beetles	<i>Dorcus parallelipedus</i>	1	decaying broadleaved wood; white rot		Fagales
Stag beetles	<i>Lucanus cervus</i>	4	broadleaved roots & underground wood; sub decay		Fagales
Stag beetles	<i>Sinodendron cylindricum</i>	1	conifer or broadleaved, decaying wood; white rot		Fagales
Net-winged beetles	<i>Platycis minutus</i>	1	decaying broadleaved wood; moist white rot; hollow tree cavities, heartrot; wood mould	IEC: 1	Fagales
False blister beetles	<i>Ischnomera cyanea</i>	1	decaying broadleaved wood; white rot, flowers (adult)	IEC: 1	Plantae, Ulmus
Feather-wing beetles	<i>Nossidium pilosellum</i>	4	broadleaved fungal fruiting bodies, heartrot; hollow tree cavities, wet hollows; rot hole detritus; dry wood mould		Fagales
Spiderweb beetles	<i>Ptilinus pectinicornis</i>	1	broadleaved dead trunks & branches		Fagus, Plantae

Rove beetles	<i>Haploglossa gentilis</i>	1	broadleaved only, heartrot; hollow tree cavities		Fagales, Lasius fuliginosus
Darkling beetles	<i>Prionychus ater</i>	1	broadleaved only, heartrot; decaying wood, heartrot; hollow tree cavities; woodmould	IEC: 1	Fagales

Fungal Fruiting Bodies SAT

Family	Species	SQS	Larval feeding guild	Adult feeding guild	Habitat fidelity	Associations
Fungus weevils	<i>Platyrhinus resinosus</i>	4	fungivore	fungivore	IEC: 1	Betula, Daldinia concentrica, Fagus, Fraxinus
False skin beetles	<i>Biphyllus lunatus</i>	1	fungivore	fungivore	IEC: 1	Fagus, Fraxinus
Minute tree fungus beetles	<i>Cis bilamellatus</i>	1	fungivore	fungivore		Fagales
Minute tree fungus beetles	<i>Cis boleti</i>	1	fungivore	fungivore		Fagales
Minute tree fungus beetles	<i>Cis castaneus</i>	1	fungivore	fungivore		Fagales
Minute tree fungus beetles	<i>Octotemnus glabriculus</i>	1	fungivore	fungivore		Fagales
Minute tree fungus beetles	<i>Sulcacis nitidus</i>	1	fungivore	fungivore		Fagales
Pleasing fungus beetles	<i>Dacne rufifrons</i>	1	fungivore	fungivore		Fagales
Pleasing fungus beetles	<i>Triplax aenea</i>	1	fungivore	fungivore		Aesculus, Fagus, Ilex
Pleasing fungus beetles	<i>Triplax lacordairii</i>	8	fungivore	fungivore	IEC: 1	Aesculus, Fagus, Ilex, Pleurotus spp.
Hairy fungus beetles	<i>Litargus connexus</i>	1	fungivore	fungivore		Fagales
Hairy fungus beetles	<i>Mycetophagus quadripustulatus</i>	1	fungivore	fungivore		Fagales
Hairy fungus beetles	<i>Pseudotriphyllus suturalis</i>	4	fungivore	fungivore	IEC: 1	Fagales

Rove beetles	<i>Agaricochara latissima</i>	1	fungivore	fungivore		Fagales
Rove beetles	<i>Bolitochara bella</i>	1	fungivore	fungivore		Fagales
Rove beetles	<i>Bolitochara tecta</i>	4	fungivore	fungivore		Fagales
Darkling beetles	<i>Eledona agricola</i>	1	fungivore	fungivore	IEC: 1	Quercus

Bark and Sapwood Decay SAT

Family	Species	SQS	Larval feeding guild	Adult feeding guild	Resources	Habitat fidelity	Associations
Fungus weevils	<i>Platystomos albinus</i>	4	fungivore	fungivore	dead broadleaved trunks & branches	IEC: 1	Fagales
False skin beetles	<i>Diplocoelus fagi</i>	4	fungivore	fungivore	fungus fruiting bodies	IEC: 1	Acer, Fagus
Soldier beetles	<i>Malthinus balteatus</i>	1			broadleaved sapwood & bark decay		Fagales
Soldier beetles	<i>Malthinus flaveolus</i>	1		nectivore	broadleaved sapwood & bark decay, flowers (adult)		Fagales
Soldier beetles	<i>Malthinus seriepunctatus</i>	1			broadleaved sapwood & bark decay		Fagales
Soldier beetles	<i>Malthodes fibulatus</i>	4			broadleaved sapwood & bark decay		Fagales
Soldier beetles	<i>Malthodes marginatus</i>	1			broadleaved sapwood & bark decay		Fagales
Soldier beetles	<i>Malthodes minimus</i>	1			broadleaved sapwood & bark decay		Fagales
Longhorn beetles	<i>Alosterna tabacicolor</i>	1	xylophagous	nectivore	conifer or broadleaved, dead trunks & branches, flowers (adult)		Fagales
Longhorn beetles	<i>Aromia moschata</i>	1	xylophagous	nectivore	conifer or broadleaved, dead trunks & branches, flowers (adult)		Salix
Longhorn beetles	<i>Clytus arietis</i>	1	xylophagous	nectivore	freshly dead broadleaved trunks & branches, flowers (adult)		Fagales
Longhorn beetles	<i>Grammoptera ruficornis</i>	1	xylophagous	nectivore	broadleaved only, dead aerial branches, flowers (adult)		Fagales

Longhorn beetles	<i>Leiopus linnei/nebulosus agg.</i>	1	xylophagous	nectivore	broadleaved only, dead aerial branches, flowers (adult)		
Longhorn beetles	<i>Paracorymbia fulva</i>	4	xylophagous	nectivore	broadleaved only, flowers (adult)		Plantae
Longhorn beetles	<i>Pogonocherus hispidulus</i>	1	xylophagous		freshly dead broadleaved trunks & branches		Corylus, Malus
Longhorn beetles	<i>Pogonocherus hispidus</i>	1	xylophagous		freshly dead broadleaved trunks & branches		Fagales
Longhorn beetles	<i>Rhagium bifasciatum</i>	1	saprophagous	nectivore	conifer or broadleaved, dead trunks & branches, flowers (adult)		
Longhorn beetles	<i>Rhagium mordax</i>	1	xylophagous	nectivore	freshly dead broadleaved trunks & branches, flowers (adult)		Plantae, Quercus
Longhorn beetles	<i>Rutpela maculata</i>	1	xylophagous	nectivore	conifer or broadleaved, dead stumps, roots & underground wood, flowers (adult)		Fagales
Longhorn beetles	<i>Stenocorus meridianus</i>	1	xylophagous	nectivore	conifer or broadleaved, dead stumps, roots & underground wood, flowers (adult)		Fagales
Longhorn beetles	<i>Stenurella melanura</i>	1	xylophagous	nectivore	broadleaved dead stumps, roots & underground wood, flowers (adult)		Fagales
Minute bark beetles	<i>Cerylon ferrugineum</i>	1	fungivore	fungivore	conifer or broadleaved; broadleaved only, sapwood & bark decay; bark & cambium		Fagales
Minute bark beetles	<i>Cerylon histeroides</i>	1	fungivore	fungivore	conifer or broadleaved; broadleaved only, sapwood & bark decay; bark & cambium		Fagales
Flat bark beetles	<i>Pediacus dermestoides</i>	1	predator	nectivore	freshly dead broadleaved trunks & branches, flowers (adult)	IEC: 1	Plantae, Quercus
Weevils	<i>Acalles misellus</i>	1	xylophagous	unknown	dead broadleaved trunks & branches		Hedera

Weevils	<i>Acalles ptinoides</i>	4	xylophagous	unknown	conifer dead trunks & branches		Calluna, Quercus
Weevils	<i>Anisandrus dispar</i>	4	fungivore	unknown	freshly dead broadleaved trunks & branches	IEC: 1	Betula, Quercus
Weevils	<i>Dryocoetes villosus</i>	1	xylophagous	unknown	freshly dead broadleaved trunks & branches		Quercus
Weevils	<i>Ernoporicus fagi</i>	4	xylophagous	unknown	freshly dead broadleaved trunks & branches	IEC: 1	Fagus
Weevils	<i>Hylesinus varius</i>	1	xylophagous	unknown	freshly dead broadleaved trunks & branches		Fraxinus
Weevils	<i>Kyklioacalles roboris</i>	4	xylophagous	unknown	dead broadleaved trunks & branches		Fagales
Weevils	<i>Lymanator coryli</i>	16	xylophagous	unknown	dead broadleaved trunks & branches; aerial branches		Corylus
Weevils	<i>Magdalis armigera</i>	1	xylophagous	nectivore	dead broadleaved trunks & branches, flowers (adult)		
Weevils	<i>Platypus cylindrus</i>	4	xylophagous	unknown	freshly dead broadleaved trunks & branches	IEC: 1	Quercus
Weevils	<i>Scolytus multistriatus</i>	1	xylophagous	unknown	freshly dead broadleaved trunks & branches		Ulmus
Weevils	<i>Scolytus pygmaeus</i>		xylophagous	unknown	freshly dead broadleaved trunks & branches		Ulmus
Weevils	<i>Scolytus scolytus</i>	1	xylophagous	unknown	freshly dead broadleaved trunks & branches		Ulmus
Weevils	<i>Taphrorychus bicolor</i>	4	xylophagous	unknown	freshly dead broadleaved trunks & branches		Carpinus, Fagus, Quercus
Weevils	<i>Trachodes hispidus</i>	4	unknown	unknown	dead broadleaved trunks & branches	IEC: 1	Plantae, Quercus
Weevils	<i>Trypodendron domesticum</i>	1	fungivore	unknown	freshly dead broadleaved trunks & branches	IEC: 1	Fagales
Weevils	<i>Xyleborus dryographus</i>	4	fungivore	unknown	freshly dead broadleaved trunks & branches	IEC: 1	Castanea, Fagus, Quercus, Ulmus
Weevils	<i>Xylocleptes bispinus</i>	1	xylophagous	unknown	dead broadleaved trunks & branches		Clematis
Click beetles	<i>Stenagostus rhombeus</i>	1	predator	does not feed?	dead broadleaved trunks & branches,	IEC: 1	Coleoptera, Fagus

					sapwood & bark decay		
Handsome fungus beetles	<i>Endomychus coccineus</i>	1	fungivore	fungivore	broadleaved only, fungal fruiting bodies, sapwood & bark decay; bark & cambium		Fagus, Salix
Clown beetles	<i>Paromalus flavicornis</i>	1	predator	predator	broadleaved only, sapwood & bark decay; bark & cambium		Fagales
Fungus beetles	<i>Anisotoma humeralis</i>	1	fungivore	fungivore	beneath mouldy bark, broadleaved dead trunks & branches		Fagales
Soft winged flower beetles	<i>Axinotarsus marginalis</i>		predator	predator	dead broadleaved trunks & branches, sapwood & bark decay		Quercus
Soft winged flower beetles	<i>Dasytes plumbeus</i>	4	predator	nectivore	dead broadleaved trunks & branches, sapwood & bark decay, flowers (adult)		Salix
Soft winged flower beetles	<i>Malachius bipustulatus</i>	1	predator	nectivore	dead broadleaved trunks & branches, sapwood & bark decay, flowers (adult)		Fagales
False darkling beetles	<i>Orchesia undulata</i>	1	fungivore	fungivore	dead broadleaved trunks & branches; aerial branches	IEC: 1	Quercus
Root eating beetles	<i>Rhizophagus bipustulatus</i>	1			dead broadleaved trunks & branches, sapwood & bark decay		
Root eating beetles	<i>Rhizophagus ferrugineus</i>	1			dead broadleaved trunks & branches, sapwood & bark decay		
Tumbling flower beetles	<i>Mordellistena neuwaldeggiana</i>	4	unknown	nectivore	dead broadleaved trunks & branches, flowers (adult)	IEC: 1	
Pollen beetles	<i>Carpophilus sexpustulatus</i>	1		unknown	bark & cambium; beneath tight bark, broadleaved only	IEC: 1	Castanea, Plantae
Pollen beetles	<i>Soronia grisea</i>	1	saprophagous	saprophagous	broadleaved only, sapwood & bark decay		Fagales
Wood-borer beetles	<i>Anobium punctatum</i>	1	xylophagous	does not feed?	dead broadleaved trunks & branches		Fagales

Wood-borer beetles	<i>Hemicoelus fulvicornis</i>	1	xylophagous	does not feed?	dead broadleaved trunks & branches		Fagales
Cardinal beetles	<i>Pyrochroa coccinea</i>	1		nectivore	bark & cambium; beneath tight bark dead broadleaved trunks & branches, flowers (adult)	IEC: 1	Fagales
Cardinal beetles	<i>Pyrochroa serraticornis</i>	1		nectivore	bark & cambium; beneath tight bark dead broadleaved trunks & branches, flowers (adult)		Fagales
Narrow waisted bark beetles	<i>Vincenzellus ruficollis</i>	1	predator	predator	bark & cambium; beneath tight bark; broadleaved only		Fagales
False flower beetles	<i>Anaspis costai</i>	4	predator	nectivore	dead broadleaved trunks & branches, flowers (adult)		Fagales
False flower beetles	<i>Anaspis fasciata</i>	1	predator	nectivore	dead broadleaved trunks & branches, flowers (adult)		
False flower beetles	<i>Anaspis frontalis</i>	1	predator	nectivore	dead broadleaved trunks & branches, flowers (adult)		
False flower beetles	<i>Anaspis garneysi</i>	1	predator	nectivore	conifer or broadleaved, flowers (adult), woodmould; dry wood mould		
False flower beetles	<i>Anaspis maculata</i>	1	predator	nectivore	dead broadleaved trunks & branches, flowers (adult)		
False flower beetles	<i>Anaspis pulicaria</i>	1	predator	nectivore	dead broadleaved trunks & branches, flowers (adult)		
False flower beetles	<i>Anaspis regimbarti</i>	1	predator	nectivore	dead broadleaved trunks & branches, sapwood & bark decay, flowers (adult)		Fagales
Flat bark beetles	<i>Silvanus unidentatus</i>	1	predator	predator	bark & cambium; beneath tight bark dead broadleaved trunks & branches	IEC: 1	Quercus
Flat bark beetles	<i>Uleiota planatus</i>	4			freshly dead broadleaved trunks & branches	IEC: 2	Fagales
Dry fungus beetles	<i>Aspidiphorus orbiculatus</i>	1	fungivore	unknown	dead broadleaved trunks & branches, sapwood & bark decay		Fagales
Rove beetles	<i>Dinaraea aequata</i>	1	predator	predator	conifer or broadleaved,		Fagales

					sapwood & bark decay; bark & cambium		
Rove beetles	<i>Homalota plana</i>	1	saprophagous	saprophagous	bark & cambium; beneath loose bark, conifer or broadleaved; broadleaved only		Fagales
Rove beetles	<i>Phloeonomus punctipennis</i>	1	fungivore	fungivore	bark & cambium; beneath tight bark, conifer or broadleaved		Fagales
Rove beetles	<i>Phloeopora testacea</i>	1	predator	predator	conifer or broadleaved, sapwood & bark decay; bark & cambium		Fagales
Rove beetles	<i>Scaphidium quadrimaculatum</i>	1	fungivore	fungivore	broadleaved dead trunks & branches, fungal fruiting bodies		Fagales
Rove beetles	<i>Siagonium quadricorne</i>	1			bark & cambium; beneath tight bark, conifer or broadleaved; broadleaved only		Fagales
Darkling beetles	<i>Corticeus linearis</i>		predator	predator	dead conifer trunks & branches; aerial branches with beetle galleries		Pinus
Ironclad beetles	<i>Bitoma crenata</i>	1	fungivore	fungivore	bark & cambium; beneath tight bark, broadleaved only	IEC: 1	Fagus, Quercus
Ironclad beetles	<i>Pycnomerus fuliginosus</i>		fungivore	fungivore	conifer or broadleaved; broadleaved only, sapwood & bark decay; bark & cambium		Fagales

Open Water on Disturbed Mineral Sediments SAT

Family	Species	SQS	Larval feeding guild	Adult feeding guild	Resources	Associations
Weevils	<i>Phytobius leucogaster</i>	4	herbivore	herbivore	lakeside emergent/aquatic vegetation, shallow freshwater pond ; aquatic: well vegetated	Myriophyllum
Predacious Diving Beetles	<i>Hydroglyphus geminus</i>	1	predator	predator	shallow freshwater pond ; sparsely vegetated	Arthropoda

Predacious Diving Beetles	<i>Rhantus suturalis</i>	1	predator	predator	shallow freshwater pond ; sparsely vegetated	
Crawling Water Beetles	<i>Haliphus immaculatus</i>	1	herbivore	herbivore	base-rich, shallow freshwater pond ; aquatic: sparsely vegetated	
Crawling Water Beetles	<i>Haliphus obliquus</i>	1	herbivore	herbivore	base-rich, shallow freshwater pond ; aquatic: sparsely vegetated; aquatic: well vegetated	
Crawling Water Beetles	<i>Peltodytes caesus</i>	4	predator	predator	shallow freshwater pond ; aquatic: sparsely vegetated	Arthropoda
Water Scavenger Beetles	<i>Anacaena bipustulata</i>	1	saprophagous	predator	drawdown zone: mud/shallow litter, shallow freshwater pond ; aquatic: sparsely vegetated	
Water Scavenger Beetles	<i>Berosus luridus</i>	4	predator	predator	shallow freshwater pond ; aquatic: sparsely vegetated	
Water Scavenger Beetles	<i>Helochaeres lividus</i>	1	predator	herbivore	shallow freshwater pond ; aquatic: sparsely vegetated	Arthropoda
Water Scavenger Beetles	<i>Laccobius colon</i>	1	predator	predator	drawdown zone: mud/shallow litter, shallow freshwater pond; sparsely vegetated, wave washed edges	Arthropoda