



*CARAVAN CLUB ECOLOGICAL
SITE APPRAISAL*



Low Manesty
Caravan Club Site
Manesty
Keswick
CA12 5UG



General Information

Site Name and County: Low Manesty Caravan Club Site, Cumbria

Grid Reference: NY 251 187

Area: 4.86 hectares

Date: 19/06/06

Recorder: Vilas Anthwal, JUST ECOLOGY

Weather Conditions: Overcast, cool, windy with rain

Site Description

The site is located approximately 80m above sea-level and comprises a mosaic of open and wooded habitats close to the south-west shore of Derwent Water. The topography of the site is undulating with banks and hollow slowly rising to the north-west of the site giving the open areas a gentle south-east facing aspect. The site has 60 pitches on hard standing surrounded by fragments of amenity grassland. Buildings and caravanning pitches are grouped along the eastern and western edges of the site either side of a central strip of semi-natural vegetation running north-south through the site. There are woodland walks along the northern edge of the site.

Context

The site is within the Cumbria Fells and Dales Natural Area (www.englishnature.org.uk) and more specifically is within the Lakes District Mountains area of this Natural Area. This is the most rugged and mountainous part of the Natural Area situated in the central part of the Lake District. The rocks of the Borrowdale Volcanics have been sculpted and shaped by the last glaciation into a landscape of U-shaped valleys, steep-sided mountains, corries and tarns. The area supports a rich variety of upland habitats both above and below the limit of tree growth. The highest mountain summits support some of the only remnants of montane moss and lichen heaths found in England. Below these areas are cliffs, screes and rocky habitats; where these are inaccessible to grazing sheep they are some of the least modified habitats in the area. Springs and flushes can also emerge here and they support diverse arctic-alpine plant communities. The lower slopes of the open fell support heather moors, acidic grasslands with areas of bracken and blanket bogs. These vegetation communities have been strongly influenced by grazing stock. High Valley and slope woodlands are common in Borrowdale. The major lakes are dominant features in the landscape and the Derwent-Cocker River system provides the best English example of a nutrient-poor and undisturbed river.

In the countryside immediately surrounding the site there are two SSSIs (Sites of Special Scientific Interest), Buttermere Fells SSSI and River Derwent and Tributies SSSI. Further afield Lodore-Troutdale Woods SSSI and Armboth Fells SSSI are both within a kilometre of the site. The nearest SSSI, Buttermere Fells SSSI is designated for the range and extent of montane and submontane dwarf shrub heath communities. The close by Lodore-Troutdale Woods SSSI, just to the south-east of Derwent Water, is the largest unit within the Borrowdale Woods complex which is regarded as being internationally important, primarily for the extensive areas of sessile oak wood rich in mosses and lichens.



Habitat Information

Broad Habitats Present: Dwarf Shrub Heath/Bog, Broad-leaved woodland, Improved Grassland.

BAP Priority Habitats Present: Wet Heath/Lowland Raised Mire (National Vegetation Classification (NVC) affinities: M15 *Scirpus cespitosus*- *Erica tetralix* wet heath), Lowland Dry Acid Grassland

Subsidiary Habitats Present: None

Grassland Communities:

There were no extensive areas of grassland on site and where grassland was present it was confined to small mown clearings and the edges of caravan pitches (Figure 1). The sward here was reseeded as amenity grassland dominated by Perennial Rye Grass *Lolium perenne* and Common Bent *Agrostis capillaris*, and herbs such as Daisy *Bellis perennis*, Creeping Buttercup *Ranunculus repens* and Greater Plantain *Plantago major*.

Figure 1- mown grassland associated with the caravan pitches



There was view point with a bench located immediately north of the road along the southern side of the site between pitches 55 and 56. Although this area was limited and no larger than 15m², this short mown area of grassland included characteristic plants of neutral to acidic condition including Heath Bedstraw *Galium saxatile*, Yorkshire Fog *Holcus lanatus* and sedge *Carex* sp..

Woodland:

Contrasting stands of woodland were present on site, with transitions between areas of drier ground conditions and wetter areas where trees are encroaching on open habitats. In places conifers contributed significantly to the canopy and underlying ground flora. The canopy of the majority of the woodland on site was fairly open. Woodland covered an estimated 50% of the site (Figure 2).

In the higher sloped areas of the site, such as towards the west of the site and where local topography on site allowed for free drainage, a stand of broad-leaved woodland is found. Frequent species in the canopy included oak *Quercus* sp. and Ash *Fraxinus excelsior* with rare Beech *Fagus sylvatica*. Some parts of the site included abundant Downy Birch *Betula pubescens* a common species that encroaches into undisturbed habitats and forms stands of closed canopy woodland. These secondary woodlands are then often superseded by other deciduous trees depending on the soil conditions. In the past the site has been planted with a number of coniferous trees including Black Pine *Pinus nigra*, Scots Pine *Pinus sylvestris* and Spruce *Picea* sp. This planting was most prevalent along the northern edge of the site, particularly west of the stream, and in a small area at the southern tip of the site.

Figure 2- woodland on site.



The under-storey and scrub under the deciduous woodland areas was fairly open covering approximately 25% and only Mountain Ash *Sorbus acuparia* *Holly *Ilex aquifolium*, bramble *Rubus fruticosus* agg. and rhododendron were recorded. Holly is considered to be a possible indicator of ancient woodland habitat. A programme of rhododendron control is being undertaken on site in association with the Lake District National Park Authority (LDNPA).

The woodland supported a mixture of characteristic woodland ground flora and species more commonly associated with open habitats. Of the species recorded, nine are considered to be indicators of ancient woodland habitat. These indicator species are denoted in the following text with an asterisk. Native woodland species associated with the broad-leaved canopy included *Bluebell *Hyacinthoides non-scripta*, *Wood Sorrel *Oxalis acetosa*, Tufted Hair-grass *Deschampsia caespitosa*, a hair moss *Polytrichum* sp., *Wood Meadow-grass *Poa nemoralis*, *dog violet *Viola* sp., *Hard Fern *Blechnum spicant*, *Oak Fern *Gymnocarpium dryopteris*, *Yellow Pimpernel *Lysimachia nemorum*, Prickly Sedge *Carex muricata* subsp. *lamprocarpa* and *Wood Sedge *Carex sylvatica*. In the wetter and sometimes more open areas of woodland a marshier ground-flora was present including a higher proportion of grasses including Sweet Vernal-grass *Anthoxanthum odoratum* and Purple Moor-grass *Molinia caerulea*. Bracken *Pteridium aquilinum* was also present in the field layer, becoming locally dominant in the more open areas (Figure 3). In these more open areas Foxglove *Digitalis purpurea* and Red Campion *Silene dioica* were also occasional.

The woodland habitat included standing and fallen dead/decaying wood, frequently with standing pine stumps, in well lit situations favourable to decaying wood invertebrates.

Figure 3- Dominant Bracken



Other:

A band of habitat running north-south down the centre of the site included a mosaic of inundated ground where tree cover was not dominant. A similar habitat was found alongside the stream that runs north-south between the reception and the caravanning

area known as 'The Avenue'. Here, the habitat includes small areas dominated by grasses, rushes or *Sphagnum*, with quick transitions into Bracken where the ground was more freely drained. Frequent species in the bog area included Soft Rush *Juncus effusus*, Marsh Thistle *Cirsium palustre*, Tufted Hair-grass, Yellow Iris *Iris pseudocorus* and Purple Moor-grass. Occasional and locally dominant in the wettest area were several unidentified peat mosses *Sphagnum* sp..

Towards the north of the site and confined to an area no greater than approximately 400m² was a stand of vegetation characteristic of wet heath. Here Cross-leaved Heath *Erica tetralix*, Purple Moor-grass, Bog-myrtle *Myrica gale*, a lichen *Cladonia* sp. and Bilberry *Vaccinium myrtillus* were found.



Habitat Evaluation

Grasslands bordering the caravan pitches are floristically species-poor and, due to the intense mowing regime, have low potential to support a wide range of fauna. The small area of mown grassland towards the south of the site is similar to the acid grassland community found in the enclosed pasture of the lower Lake District hills. Such habitats have a Habitat Action Plan in the UK BAP (Biodiversity Action Plan) (www.ukbap.org.uk). The flora along these margins is also more diverse than the mown sections surrounding the caravan pitches and is not dominated by the tall marsh specialists or Bracken found elsewhere on site. At the edge of this area there is a narrow 0.5m wide margin that is not mown as short as the view point itself. The resultant sward has a more diverse structure creating more varied habitats for invertebrates, reptiles, birds and small mammals such as voles and shrews. These habitat conditions also provided important resources for nectaring invertebrate species such as hoverflies (Syrphidae) and bees (Apoidea).

Woodlands on site exhibited the character of two habitat types, Upland Oakwood and coniferous plantation both of which were interspersed with areas of imperfect drainage, bog and heath. Upland Oakwoods are listed as a priority habitat in the UK BAP (www.ukbap.org.uk) and in Annex 1 of the EC Habitats Directive. They are one of the most distinctive landscape features of the Lake District and support a variety of species of conservation concern (www.wildlifeincumbria.org.uk). In the past these woods supplied charcoal to the iron foundries of Britain. Evidence of this may be found on site in the form of coppice stools and pitsteads - platforms upon which coppiced oak was burnt to form charcoal. Upland oakwood is present throughout Cumbria, with the main concentrations in the Cumbria Fells and Dales, Eden Valley and Border Uplands Natural Areas (www.english-nature.org.uk). Upland oakwoods make a major contribution to the landscape character of parts of Cumbria, notably in the Lake District National Park. The Provisional Inventory of Ancient Woodland¹, gives a figure of 15,593 ha of ancient woodland (woods >2ha) in Cumbria, 62% of which is in the Lake District National Park. Nationally, upland semi-natural woods have declined by about 30-40% in area over the past 60 years. A survey of the Lake District National Park concluded that over the previous 30 years the most significant

¹ Phillips, P.M. 1994. *Cumbria inventory of ancient woodland (provisional)*. English Nature. Peterborough

change in the National Park, since fellings during World War II, had been the widespread introduction of conifers, both through under-planting and complete conversion (www.wildlifeincumbria.org.uk). Evidence for this exists on site in the presence of the native and non-native coniferous trees. Conifer plantations are considered to be habitats of rather low ecological value occupying potentially important wildlife habitats in the form of native woodland or heath. However the presence of conifers does provide an additional food source for Red Squirrel and birds, hence the presence of such trees is acceptable. The presence of several ancient woodland indicators would also suggest that woodland is an historical land-use on site and therefore maintaining some woodland on site in the future would be appropriate.

Forming a mosaic of habitats with the woodland on site were fragments of wet heath and mire, both of which have Habitat Action Plans in the Cumbria BAP (www.wildlifeincumbria.org.uk). Classification and mapping of these habitats was not possible within the scope of this survey but the presence of species such as *Sphagnum* sp. moss and *Cladonia* sp. lichen indicates that there may be considerable floristic value in these areas. Upland heath is recognised as being of international importance, because its distribution is largely confined to the western sea-board of Europe. Wet heath, which may be present on site, is characterised by Cross-leaved Heath and Purple Moor-grass and can occur in waterlogged valleys as found on site often in association with blanket bog. A number of uncommon animal species may be associated with this mosaic of habitat including, dragonflies, such as whitefaced darter and variable damselfly, butterflies and moths including large heath butterfly and the emperor moth, uncommon ground beetles and bog bush cricket. They are also important for some breeding bird species, including reed warbler, sedge warbler, reed bunting, snipe, curlew, nightjar, golden plover and twite.

The site supports some fragments of acid grassland characteristic of enclosed unimproved upland habitat where it often occurs in mosaic with heath communities. The acid grassland habitat conforms closely in species composition to the NVC U4 *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland. U4 grasslands are classified as 'priority habitat' under the UK Biodiversity Action Plan (BAP). Future management should, consequently, aim to maintain and enhance the extent and condition of this habitat on the site where possible



Species Information

BAP Species Seen: None

BAP Species Potential: Song Thrush *Turdus philomelos*, Great Crested Newt *Triturus cristatus*, Red Squirrel, bats

Other Noteworthy Species: Ancient woodland indicator flora, Palmate Newt *Triturus helveticus*, Osprey *Pandion haliaetus*, Pied Flycatcher *Ficedula hypoleuca*, Oak Fern

Flora:

The site's flora was more interesting in community terms than for the rarity of any particular species. The woodland habitat supported several characteristic woodland species such as Oak Fern, Wood Meadow-grass, Wood Sorrel and dog violet. The key species of the heath/mire habitat included Cross-leaved Heath, Bog Myrtle, *Sphagnum* sp. moss and *Clandonia* sp. lichen.

Avifauna:

The mature trees on the site provide a good foraging resource and cover for insectivorous and seed-eating birds. Species recorded feeding in the woodland canopy during the survey included Blue Tit *Parus caeruleus* and Great Tit *Parus major*. Blue Tit were also seen nesting on site. Other species recorded throughout the woodland included Chaffinch *Fringilla coelebs* and Wren *Troglodytes troglodytes* which frequented the scrub, Robin *Erithacus rubecula*, Dunnock *Prunella modularis* and Wood Pigeon *Columba palumbus*. The site supported plenty of suitable foraging habitat and potential nesting habitat for woodpeckers and other woodland birds.

The warden takes a particular interest in birds on and around the site which should be encouraged where possible. As well as maintaining a record book, the warden also provides nest boxes in seven locations for Pied Flycatcher. The Pied Flycatcher is a small, flycatching bird, slightly smaller than a house sparrow. The male is mostly black on the upperparts and white underneath, with a bold white patch on the folded wing. Females are browner in colour. It is a summer visitor and breeds mainly in western areas such as Cumbria, then migrating south and spending the winter in West Africa.

Invertebrates:

The site supported some areas of excellent invertebrate habitat and the fine-scale variation in habitat means a great number of differing resources are available to wildlife. These included open grassland towards the south of the site, sunny sheltered woodland edge nectar resources with flowering bramble blossom, wet heath towards the north of the site and the oakwood.

The open grassland towards the south of the site may support a range of invertebrates in the taller grasses and sedges at the edge of the area. In this area a Common Green Grasshopper *Omocestus viridulus* was seen (Figure 4). This is a grasshopper of longish grass, although it will occur in shorter, though not close-cropped turf, if the soils are moist enough. This is the earliest grasshopper to appear and the adult is present in June surviving no later than September. Eggs are laid in summer in the soil, hatching the following April. The species is a plant-feeder on a variety species of grass. Its song consists of long 'churrs' starting quietly and getting louder and lasting between 10 and 20 seconds.

Figure 4- Common Green Grasshopper



Although only one species of grasshopper was recorded, it is likely that at least one other species occurs here as may common species of bush-cricket (tettigoniidae). There is plenty of suitable habitat in both the mown grassland verges and the taller grassland habitat.

The bramble at the woodland edge provides a valuable early summer nectar resource for many species including ground-nesting solitary bees and wasps, beetles, flies and bugs. In amongst this vegetation and under the oakwood canopy common invertebrates including craneflies (tipilids), soldier and sailor beetles (cantharidae), shield bugs (acanthosomatidae). An invertebrate survey in this area may yield a high diversity of species. There was plenty of standing and fallen decaying wood within the wooded areas on the site, the stumps of trees were found in fairly open conditions providing a resource for wood boring beetles including bark beetles (scolytidae) and possibly longhorn beetles (cerambycidae). The area of wet heath towards the north of the site had a great abundance of Common Blue Damselfly *Enallagma cyathigerum* at the time of survey as well as frequent sighting of a scorpion fly *Panorpa* sp..

The weather conditions at the time of survey were sub-optimal for recording invertebrates, being somewhat cool and showery. Due to this and as invertebrate surveying was rather peripheral to the survey's main aim, few invertebrates were recorded.

Herptofauna:

At the time of survey, the weather conditions were suboptimal for the recording of warmth-loving fauna such as most reptiles and many invertebrates. However, the drier woodland edge grassland habitat, provides suitable habitat for reptiles such as Common Lizard *Lacerta vivipara* and the Bramble scrub edge habitat in drier conditions provides potentially suitable habitat for Slow Worm *Anguis fragilis*. The habitat is also potentially suitable for Grass Snake *Natrix natrix*, this species is commonly associated with wetland habitats such as the wet heath/more present on site. Although there were no ponds on the site, the numerous hiding places in tree roots, under fallen deadwood and crevices beneath rocks and stones within the woodland habitat provide suitable refuges and hibernation sites for amphibians such as Common Toad *Bufo bufo* and Common Frog *Rana rana*. A Palmate Newt was found under a stone near the mown grassland towards the south of the site (Figure 5).

Figure 5- Ventral view of a Palmate Newt found towards the south of the site



Mammals:

The only mammal recorded during the survey was Badger *Meles meles* which was located by a latrine in the northern corner of the site. Other mammals may be present on site including shrews, voles and Fox *Vulpes vulpes*. Common Pipistrelle *Pipistrellus pipistrellus* and Daubenton's *Myotis daubentonii* bats have been recorded at the site in the past. It is likely that the woodland present on site provides valuable roosting and foraging habitat for these and other bat species. There was no evidence of bats roosting in the buildings on site hence if there are any important maternity roosts found on site they are likely to be in rot holes and cavities in the trees.



Species Evaluation

The Song Thrush has a Species Action Plan in the Cumbria BAP and the Caravan Club is a species champion for this farmland bird that is in national decline it is also listed as a “red” species in Birds of Conservation Concern.. It is likely that this BAP priority species is more typically associated with more open habitats, where it feeds readily on earthworms and other invertebrates like snails that are mostly taken from close to the surface of damp, nutrient rich soils. The change in agricultural practices away from spring-sown to autumn-sown crops has resulted in the reduction of open areas on which to forage. This has been compounded by the conversion of invertebrate-rich permanent pasture to intensive arable cultivation and the loss of field margins. In autumn, song thrushes take large numbers of hedgerow fruits, particularly sloes from Blackthorn *Prunus spinosa*, Elderberries *Sambucus nigra* and Guelder-rose *Viburnum opulus*. Unfortunately these resources are also declining severely through the loss of hedges.

Bats may well use the site for roosting and foraging. The potential of the site for bats could easily be enhanced by erecting bat boxes on building on site.

Management Recommendations

- Future management of the site for wildlife in the long term presents several targets that should be carefully considered when prescribing ground works and site maintenance.
- Some of the site could be managed as it currently is, as woodland, perhaps with the ultimate aim of selective removal of coniferous trees over a long period of time so as not to open the canopy open dramatically and lose the woodland character on site. Broadleaved trees such as native Oaks, Birch, Rowan and other trees characteristic of upland woodland on more acid soils would be appropriate to plant in newly created gaps in the canopy.
- Prevent further encroachment of scrub and trees such as birch onto the wet heath and bog areas, particularly toward the north of the site. Small trees should be felled and the stumps treated to deter regeneration once felled. The stumps should be left to allow colonisation by fungi and deadwood invertebrates. Felling and scrub clearance should be conducted between October and early February, to avoid the potential risk to nesting birds.
- Selective thinning of trees: Within the woodland selective thinning of pines (especially younger trees) should be conducted particularly in heavily shaded areas to create more open conditions enabling a wider range of ground flora to persist. (timescale as above). It may also be necessary to thin some of the broadleaved species such as birch, where dense stands of saplings persist. If any mature or dead trees are marked for surgery or felling it is advisable to get them checked by a bat expert.
- More open acid grassland habitat could be created by extending a gentle mowing regime to the bracken dominated area towards the south of the site should ground conditions allow. At the time of the survey, the small patch of acid grassland received slightly excessive mowing although it is noted that this area is preserved for recreation. An annual hay-cut (strimming or hand cutting) would ideally be conducted in September, the cut hay should be raked and removed from the site. Avoid depositing piles of cuttings in the woodland area, as this causes unwanted nutrient build-up and may obstruct the development and flowering of ruderal plants like Common Nettle *Urtica dioica*.
- Buffer zones of longer grass adjacent to woodland edges or hedgerows should be extended beyond the 0.5-1m currently in place to 2m or greater where possible. This would provide additional invertebrate habitat and nectar source, and also provide greater cover for small mammals, reptiles and amphibians. These 'buffer' zones should be cut once or twice per year, ideally in late July/Early August and in the Autumn to allow wildflowers and favourable grasses time to set seed. Species such as Foxglove, Red Campion, Wood Avens, Common Dog Violet and vetches are suited to the woodland edge and may well come in naturally to buffer zones if a suitable cutting regime is adopted. Cut vegetation should be removed from the buffer zone to avoid die back and swamping by ruderal species. Buffer zones can be further enhanced

by the introduction of wild meadow or flower seed mix. Again seed mixes should be native and of local provenance if possible.

- Leave at least some fallen and standing deadwood *in situ*, this provides habitat for dead wood invertebrates, which, in turn provides a valuable food resource for insectivorous woodland birds such as woodpeckers and warblers. Outside of the breeding season in spring, fallen dead wood also provides shelter for amphibians such as Palmate Newt and Common Toad.
- Maintain bare earth patches in the grassland areas of the site especially on gentle slopes in sheltered sunny locations at the edges of the caravan pitches.
- New planting of trees and hedgerows on site should use native species, ideally of a local provenance. Generally the commonest tree and shrub species are most beneficial to invertebrates and many produce autumn nuts and berries such as rowan, hawthorn, holly and hazel. Ash, birch, blackthorn, field maple and oak are also desirable species. In the case of any new hedgerow planting a mix the above should be used with occasional standards to increase structural diversity. Limited inter-planting with species such as honeysuckle that is attractive and highly scented will provide a nectar source for moths. Invasive shrubs giving dense ground cover should be avoided in any new planting. Hedges are currently trimmed every year. This should be reduced to every other year at most to allow greater fruiting of shrubs for animals and invertebrates.
- Unlike many other Caravan Club sites, consideration has already been made to diversification of grassland habitats through efforts made by the current wardens. This approach should be maintained when new wardens take over at Low Manesty. Securing favourable management of the unmown areas of grassland would be a considerable asset in terms of wildlife on the site. Such management could include sensitive hay production taking only one late cut per year followed by low intensity grazing without the application of manure or artificial inputs. Such management would encourage the development of a more floristically diverse meadows. If these areas are left uncut they will in time scrub over and turn to woodland. Mosaics of grassland, scrub and woodland are also of considerable value to biodiversity. If a more wooded approach is desirable in terms of management, efforts should still be maintained to create a varied structure in habitats as detail under the edges section.
- Retention of natural features – This site has areas of scrub and woodland. Any removal of scrub or woodland must be carried out at an appropriate time of year to avoid the bird nesting season (see Appendix 2). The woodland currently follows a line through the stream or over rocks. The construction of a boardwalk in this vicinity would protect the stream bank and delicate moss and lichens growing over the rock and reduce the potential risk that this hazard presents to users of the site.
- Tree stumps, log piles and mounds should be left *in-situ* or consolidated in to hibernacula, these will provide excellent invertebrate, reptile and amphibian

habitat, particularly if left in a sunny spot. Increased insect diversity will in turn attract more bird species to the area. Coarse stone, rubble or deadwood could be placed in discrete piles around the site to create hibernation sites for a range of wildlife including reptiles, amphibians and invertebrates. These would be ideally located in area of scrub and longer grassland.

- If any lighting is to be installed on site regard should be made in to the activity of bats on site and the impacts the lighting may have. Bat boxes could be erected on site on hedge row trees or within the woodland.

Further Suggestions to Enhance the Wildlife Value of the Site

- **Nest boxes** –One or two owl boxes could also be erected. Nestboxes need cleaning out once each autumn. Continue to position bird nest boxes in suitable locations both in the open and in the woodland, to provide nesting sites for birds and enhance the site’s interest for campers.
- **Bird feeding stations** – Feeding stations could be added at three or four places throughout the site. Two or three feeders at each station could hold a variety of food. One with niger seed; one with husked sunflower seed and a third with general purpose food plus fat balls. Large plastic dishes are available to place beneath feeders to catch most of the fallen debris, which attract birds unable to use hanging feeders, these can be cleaned periodically.
- **Bug boxes** - Consider positioning bug boxes (boxes containing short lengths of bamboo. Insects such as solitary bees and wasps can use the bamboo tubes for nesting) these can be fixed onto trees in sheltered locations at the woodland edge.
- **Wildlife Pond** - Consider creating a wildlife pond on the site. An ideal location for this may be within the mowed amenity grassland of the playing field. Ecological advice should be sought regarding the pond’s location, construction and stocking of wetland plants. A wildlife pond should be stocked only with native aquatic plant species, ideally of local provenance and ponds should not be stocked with ornamental fish.
- **Wildlife Information** - Consider promoting the wildlife value of the site as a feature by providing interpretation material (leaflets /posters) and /or setting up a nature trail through the woodland. The presence of a number of habitats in such close proximity of each other lends themselves to such a trail.
- **Wildlife recording** – Hold a wildlife records book and/or board for casual observations and sightings. This will aid monitoring of wildlife on site and promote the role of the Caravan Club members in building biodiversity on site. Important sightings of rare flora and fauna should be passed on to the Local Biodiversity Records Centre.

Further Survey or Information Requirements

- The survey was conducted late in the season to record many of the woodland ground flora species. It is highly probable that further surveys conducted between April and May may reveal a greater range of woodland ground flora species. Additionally survey to establish which bryophytes and lichens are present will help define the sub-community of woodland on site.
- Further invertebrate surveys are highly recommended particularly in the wet heath and oakwood areas on site.
- Further specialist surveys of lower plants, mosses in particular are recommended.
- Specialist bat surveys to establish the species of bat and suitability of habitat for bats on the site.

Appendix 1 - Bats

Certain species of bats may use the site for foraging (flying insects) and some may roost in convenient trees on the site or nearby. These will probably be pipistrelle bats *Pipistrellus sp.*

Although it remains the most abundant and widespread bat species in the UK, the pipistrelle is thought to have undergone a significant decline in numbers this century. Estimates from the National Bat Colony Survey suggest a population decline of approximately 70% between 1978 and 1993. The current pre-breeding population estimate for the UK stands at approximately 2,000,000.

Females form maternity roosts of up to several hundred adults from May, often in house roofs but also in woodland. They give birth to a single live young in July. Males are much more solitary. Hibernation takes place from November to March. Pipistrelles forage for small insects in varied habitats but woodland edges, hedgerows and waterways are particularly important.

The pipistrelle bat is listed on Appendix III of the Bern Convention, Annex IV of the EC Habitats Directive and Appendix II of the Bonn Convention (and is included under the Agreement on the Conservation of Bats in Europe). It is protected under Schedule 2 of the Conservation (Natural Habitats, etc.) Regulations, 1994 (Regulation 38) and Schedules 5 and 6 of the WCA 1981.

Appendix 2 - Birds

In Britain all wild birds are granted legal protection under the Wildlife & Countryside Act 1981, the Bern Convention and the EC Birds Directive. This legislation protects the birds, their eggs and nests whilst being built or in use. Such protection makes it an offence to intentionally kill, injure, take or have in possession any wild bird or egg. It is also an offence to intentionally damage or destroy the nest of any wild bird whilst it

is being built or in use. Any vegetation clearance and tree works should preferably take place outside of the bird-nesting season to minimise disturbance. The nesting season varies from year to year, according to the weather conditions but generally begins in March, peaks during May and June and continues until August.



Caravan Club Ecological Site Appraisal

Low Manesty, Cumbria

2006

