



**CARAVAN CLUB ECOLOGICAL SITE
APPRAISAL**



**Maragowan Caravan Club Site
Aberfeldy Road
Killin
FK21 8TN
Scotland**



General Information

Site name and county: Maragowan caravan site, Perthshire

Grid reference: NN 571 337

Area: 3.4 hectares

Date: 16/06/03

Recorder: Dr James Riley and Jessica Arnold, Ecologists with Just Ecology Environmental Consultancy.

Weather Conditions: Bright and sunny.

Site description

The site consists of gravel pitches surrounded by short, regularly mown grassy areas used for recreation. Tarmac-surfaced roads serve the pitches across the site. The site has a thin strip of woodland on its western side and northern tip, while the eastern side is bounded by the fast moving River Lochay. The banks down to the river are steep in places and slight in others.

Context

The caravan site is situated off the Aberfeldy Road in the picturesque mountain scenery of the Central Highlands, on the banks of the River Lochay and north of the village of Killin.



Habitat Information

Broad habitats present: Improved grassland; mixed woodland; amenity grassland.

BAP priority habitats present: None.

Subsidiary habitats present: None.

Plant communities present:

Grassland communities:

Most of the grassland on site is resown and species-poor, related to National Vegetation Classification community MG6 (*Lolium perenne* – *Cynosurus cristatus*) and including perennial rye grass (*Lolium perenne*), creeping buttercup (*Ranunculus repens*), crested dog's tail (*Cynosurus cristatus*), hop trefoil (*Trifolium campestre*), rough meadow-grass (*Poa trivialis*), cocksfoot (*Dactylis glomerata*), (*Plantago major*) and daisy (*Bellis perennis*).

Although some areas of grassland along the river banks are unlikely to have been improved and resown, they are still species-poor, consisting mainly of Yorkshire fog (*Holcus lanatus*) and creeping bent (*Agrostis stolonifera*), while oxeye daisy (*Leucanthemum vulgare*) provides some summer colour. A large, old, sycamore (*Acer pseudoplatanus*) dominates the centre of the site and is accompanied by several smaller Norway spruce (*Picea abies*).

Woodland:

The woodland strips to the north and west of the site are reasonably mature, with a mixture of deciduous trees (including white willow (*Salix alba*), rowan (*Sorbus aucuparia*), elder (*Sambucus nigra*), alder (*Alnus glutinosa*), hawthorn (*Crataegus monogyna*), sycamore (*Acer pseudoplatanus*), silver birch (*Betula pendula*) and beech (*Fagus sylvatica*)) and conifers (Scots pine (*Pinus sylvestris*) and Norway spruce) with no single species conspicuously dominant. Most of the trees appear to be of a similar age. The understorey is quite open and fairly poor, dominated as it is by ground elder (*Aegopodium podagraria*), although some areas (particularly in an overgrown enclosure near the toilet block) also have

meadowsweet (*Filipendula ulmaria*), common male fern (*Dryopteris filix-mas*), and hogweed (*Heracleum sphondylium*).

Ditch habitat:

A shallow ditch, slightly filled with water, runs west-east immediately south of the toilet block and contains germander speedwell (*Veronica chamaedrys*), creeping buttercup (*Ranunculus repens*), selfheal (*Prunella vulgaris*), oxeye daisy (*Leucanthemum vulgare*), floating sweet grass (*Glyceria plicata*), white clover (*Trifolium repens*) and various willowherbs including broad-leaved willowherb (*Epilobium montanum*). The area is probably too small, and the water too shallow to be of value as a breeding area for a significant viable dragonfly population.

Riverbank:

The speed of the river is variable, with a fast moving central section and slower eddies in places along the bank-side. Mature trees, including sessile oak, holly, alder and sycamore provide shade over some parts of the bank. The grassland vegetation on the bank-side down to the water is generally quite dense and tall, but was not specifically surveyed as it is not part of the Caravan Club site. At the northern end of the site, the bank-sides are quite steep and sheer, but slope more shallowly down to the waters edge at the southern end and catch the sun quite well. The river is probably too fast moving for a viable dragonfly breeding population to be established.



Species information

Flora: The woodland strips have a good mix of native tree species, but poor structural diversity and a very poor understorey. The large old sycamore is impressive and will be of considerable value for wildlife around the site. The grassland areas are species-poor and have considerable potential for improvement.

Avifauna: Buzzards (*Buteo buteo*) were seen flying high over the site and a great spotted woodpecker (*Dendrocopus major*) visits the bird feeder (Pers comm., site warden). Swallows (*Hirundo rustica*) nest in the reception compound. Other birds likely to be found on site include garden birds such as robin (*Erithacus rubecula*) and blackbird (*Turdus merula*). A family of mallards (*Anas platyrhynchos*) is present on the river adjacent to the site and black-headed gulls (*Larus ridibundus*) were also seen.

Invertebrates: No butterflies were seen at the time of the site visit.

Herptofauna: The common species of amphibian, such as toads (*Bufo bufo*) and frogs (*Rana temporaria*), may be present on site, particularly in wet areas, such as the ditches.

Mammals: The river flowing past the caravan would be suitable for otters (*Lutra lutra*), it is wide and fairly fast flowing with trees on banks, vegetated island areas and plenty of potential holt sites where otter may rest up during the day. The water quality seems to be good and there is an abundant food supply, including trout. It flows through peaceful surrounds with little disturbance from roads and humans. The stream at the north of the site joins the main river and could also be used by otter as it is secluded and the vegetation and piles of brash and logs provide shelter. The site warden reported otters being present on the river a few years ago but had no recent reports.



River Lochay at Killin

Trees along the riverbank may be used by bats as roosting sites, in particular an old beech and oak which contain cracks and crevices in the bark into which bats could crawl. The river is probably used by bats to forage along and also as a commuting corridor between foraging areas and the roosts. The buildings on site probably have low bat roost potential as no access points into the roof or under tiles *etc* were noted. The site warden sees pipistrelle (*Pipistrellus pipistrellus*) bats flying around the site at dusk and it is possible that other species, such as Daubenton's (*Myotis daubentoni*) bat may be present as these are generally associated with watercourses. The site warden reported seeing roe deer on the site during quiet periods.

BAP species seen: None.

BAP species potential: Bats and otter are listed on the Stirling Biodiversity Action Plan as Priority Species.

Other notable species: None



Maragowan



Species evaluation

The grassland on site is generally species-poor and is kept very short by frequent mowing. Most of the grassland has been improved through reseeded and nutrient enrichment. There is high species diversity amongst the established trees on site, although there is poor age structure, and the two woodland belts may provide shelter and feeding opportunities for birds and small mammals such as woodmice and voles.

Management recommendations

- Less frequent mowing of some areas, especially the edges that border the woodland strips. Margins of long grass can provide a valuable habitat for wildlife. Many invertebrates, including the caterpillars of butterflies and moths, feed on grasses. Long grass is also favoured by many small mammals, reptiles and amphibians, which in turn will attract kestrels, owls and other predators.

Bats frequently hunt for insects over long grass. A variety of lengths will produce a range of habitats and species assemblages. A mowing regime would have to be established that would allow flowers and grasses to reseed.

- There is considerable potential for improving the botanical value, and therefore aesthetic appeal, of the grassland away from the edges. This could be done in one of two ways:
 - The first would involve stripping the existing turf in parts of the site (in order to remove both the existing species and the topsoil layer), creating a fine seedbed and broadcasting a locally sourced wildflower seed mix (Appendix I) onto the bare ground.
 - The second would involve broadcasting of the same locally sourced wildflower seed mix into the existing sward. Harrowing of the existing turf would be required in order to create gaps for seedling germination. The sward would need to be mown quite short prior to harrowing and broadcasting and kept short for the first 10 days after broadcasting in order to reduce competition to the germinating seedlings from the established grasses. No fertilisation would be required.

The former method is the most reliable; the latter method is a less disruptive way to increase the wild flower value of the sward, but carries the risk that a greater proportion of the seed will fail to establish both due to competition from the existing grasses and to the higher fertility of the soil.

Seed rates would not need to be high – 2 to 6 grams per square metre is a typical seed rate for this form of diversification.

If a mix with low growing species is used, the sward can be maintained as a short lawn from October to April and mown infrequently (i.e. every six to eight weeks) during the growing season in order to maintain an average height of roughly 10 cm.

- Removal of grass cuttings instead of leaving them in situ. This will help to gradually reduce the fertility of the soil and coarse grass species will cease to out-compete the finer, less vigorous grasses and wildflowers.

Further suggestions to enhance the wildlife value of the site

- Creation of a relatively shallow pond (certainly no smaller than 4 m² and no shallower than 2.5 feet at its deepest point), would encourage amphibians (newts, frogs and toads) and dragonflies (potentially including the azure damselfly, common darter dragonfly, blue-tailed damselfly and broad-bodied chaser dragonfly). Any pond that is constructed should:
 - Be made of natural materials as much as possible.
 - Be sheltered from the wind, but not the sun.
 - Not be overshadowed by trees, or it will fill with leaves.

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- Have tall (not closely mown) grass and some bushes surrounding it in order to provide cover for amphibians and perching sites for dragonflies.
 - Have sloping and irregular sides (rather than steep and flat ones).
 - Have a mixture of bankside, emergent and submerged aquatic plants, although the actual choice of species to plant is less important (Appendix II).
 - Not be stocked with fish (as they are major predators)
 - Part of it (no more than 25%) should be cleared of emergent and submerged vegetation in autumn/winter each year in order to retain areas of open water while at the same time maintaining some aquatic vegetation and structural variation.
- Planting of nectar providing plants around the site to encourage butterflies and moths (see Appendix I).
 - Erection of bat and bird boxes on the buildings and trees on the site.

Survey or information requirements

No further surveys are required for this site.

Appendix I. Example list of low-growing wildflower species that could be sown to enhance the botanical interest of the grassland and be attractive to butterflies.

Yarrow	<i>Achillea millefolium</i>
Black medick	<i>Medicago lupulina</i>
Salad burnet	<i>Sanguisorba minor</i>
Selfheal	<i>Prunella vulgaris</i>
Birdsfoot trefoil	<i>Lotus corniculatus</i> (foodplant for dingy skipper, grizzled skipper, small blue, brown argus, pearl bordered fritillary, common blue butterflies)
Kidney vetch	<i>Anthyllis vulneraria</i> (foodplant for small blue, common blue butterflies)
Cowslip	<i>Primula veris</i>
Lady's bedstraw	<i>Galium aparine</i>
Sheep's fescue	<i>Festuca ovina</i>
Wild thyme	<i>Thymus praecox</i> (foodplant for brown argus, common blue, wall brown butterflies)
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Devil's bit scabious	<i>Succisa pratensis</i>
Common vetch	<i>Vicia sativa</i>
Common cat's ear	<i>Hypochaeris radicata</i> (foodplant for wall butterfly)
Common sedge	<i>Carex nigra</i>
Yellow rattle	<i>Rhinanthus minor</i> (NB seed from this species must be chilled before sowing)
Quaking grass	<i>Briza media</i>
Dog violet	<i>Viola riviniana</i> (foodplant for pearl bordered fritillary)
Meadow buttercup	<i>Ranunculus acris</i>
Red clover	<i>Trifolium pratense</i> (foodplant for bees and small skipper butterfly)
Yorkshire fog	<i>Holcus lanatus</i> (foodplant for small skipper and wall butterflies)

For the edges of the grassland, which do not need to be short, taller wildflowers such as oxeye daisy (*Leucanthemum vulgare*), wild carrot (*Daucus carota*), field scabious (*Knautia arvensis*) and meadowsweet (*Filipendula ulmaria*) could be added to the mix.

Appendix II. Example list of pond plants

Because many ponds contain non-native, potentially invasive plants or non-native animals, introducing plants from another pond should be done so using extreme care making sure that they do not contain such species. It is unwise, and in the case of some species illegal, to introduce or assist the spread of non-native invasive organisms. A list of **suitable** plants include:

Submerged:

spiked water-milfoil *Myriophyllum spicatum*
whorled water-milfoil *M. verticillatum*
curled pondweed *Potamogeton crispus*
hornwort *Ceratophyllum demersum*
water starwort *Callitriche stagnalis*
common spike-rush *Eleocharis palustris*
willow moss *Fontinalis antipyretica*
marestalk *Hippurus vulgaris*
water violet *Hottonia palustris*
water crowfoot *Ranunculus aquatilis*

Floating:

white water lily *Nymphaea alba*
ivy-leaved duckweed *Lemna trisulca*
frogbit *Hydrocharis morsus ranae*
water soldier *Stratiotes aloides*

Emergent:

yellow iris *Iris pseudacorus*
meadowsweet *Filipendula ulmaria*
purple loosestrife *Lythrum salicaria*
rushes *Juncus spp*
sedges *Carex spp*
greater spearwort *Ranunculus lingua*
water mint *Mentha aquatica*
water forget-me-not *Myosotis scorpioides*