

## **Badock's Wood**

### **Local Nature Reserve**

### **Management and Action Plan**

**April 2012 to March 2017**



This Management Plan has been funded by the Big Lottery Fund and managed through Groundwork UK as part of the Community Spaces grants programme.



**Approved Document**

***We the undersigned support this Management and Action Plan  
and will work towards achieving its aims and objectives.***



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Alan Aburrow  
Vice Chairman, FOBW

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Date: 1 September 2012



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Date 5<sup>th</sup> September 2012



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## **1.0 Introduction**

- 1.1 Badock's Wood, Westbury-on-Trym, Bristol is a Local Nature Reserve spanning part of the River Trym and one of its tributaries. Although disturbed by small-scale past quarrying and landscaping, a rich ground flora in parts suggest an ancient woodland derivation. Badock's Wood is rich in wildlife, especially plants and birds, and also in history.
- 1.2 An expanse of grassland in the north of the site, part of which was once occupied by pre-fabricated housing, is becoming more species-rich following enhancement measures.
- 1.3 The shallow gorge, watercourse, and open woodland, provide a peaceful urban escape just minutes from main roads.

## **Geology**

- 1.4 Badock's Wood overlies Carboniferous Limestones of the Black Rock Series and is well-drained throughout. There is much limestone debris within the course of the Trym and there is evidence of small-scale quarrying activity in many places.
- 1.5 Several exposed rocky outcrops exist on most slopes throughout the site, providing habitat for lower plants such as mosses and liverworts. During a wildlife event held in 2011 a fossilised oyster was found in the river bed. The following notes are from a paper by Eileen Stonebridge (2006):

'The landscape at Badock's Wood is quite surprising as within the gently sloping area of Southmead and Westbury on Trym there is a deep gorge with the a small tributary gorge coming in from the south. The River Trym and the smaller tributary have cut down through the softer overlying rocks into the much harder limestone. It is puzzling to know where the rivers, which are really small streams, obtained enough energy to cut these deep valleys. They are not unique. Many similar gorges can be found in the Bristol district and the

River Trym with another tributary, the Hazel Brook form even bigger and deeper gorges downstream.

There are various theories, but to date no proof as to the origin of these gorges. We do know that the climate has changed many times from cold ice age climates to temperate climates during the last two million years. It could be that when periods of rapid melting occurred, so much water was around that the streams were much bigger and so were able to cut these deep gorges. This may have all happened a very long time ago, about 700,000 years in fact, as recent work has shown evidence of a glaciation in the area of Kenn in North Somerset about this time. Today there is only a small stream running in the bottom of these big valleys.

The rock into which the valleys are cut is a limestone formed some 350 million years ago when this area was not only under the sea, but it was located in the tropics. The fossils contained in the rocks give evidence that the waters were warm and fairly shallow. Corals grew in the waters and sea lilies or crinoids, which were attached to the seabed by long segmented stems, are now found as broken pieces among within the rock. The waters were rich in lime, hence the formation of limestone when the weight of overlying sediments caused the water to be squeezed out and the soft sediments on the seabed turned into rock. This process would take some millions of years.

The earth's crust is not stable and gradually the rocks were folded into great arches and troughs called anticlines and synclines. These extended for hundreds of miles across what is now Europe. One of these anticlines arched up from the area of Kingsweston Ridge and Blaise to the Downs and Leigh Woods. Badock's Wood is situated on one side of this fold and the rocks can be seen to be dipping steeply in a south easterly direction. During the 300 or so million years which have passed since these great upheavals of the earth's crust much of the overlying rock has been eroded away leaving a limestone plateau into which the river has cut the gorge. Look for the bedding planes along the valley side. Each of these was once the sea floor. You may be able to see some fossil corals or crinoid stems'. During a guided walk held in February 2012 a small piece of rock containing fossil crinoids was found.

- 1.6 No information is available regarding the soil types; the Soil Survey of England and Wales 1983 shows the site mapped as an urban area.

## **Woodland**

- 1.7 Badock's Wood is a semi-natural broadleaved woodland (National Vegetation Classification W8 ash-maple *Fraxinus excelsior* - *Acer campestre*) with a number of uncommon herbaceous species which are often viewed as indicators of long periods of woodland cover or "ancient woodland indicator species". The invasive species sycamore is locally abundant.
- 1.8 Previous landscaping has led to the introduction of non-native species such as stands of beech *Fagus sylvatica* (non-native in the Avon area) and horse chestnut *Aesculum hippocastanum*, and the shrub layer has been affected by the planting of further non-native species such as bamboo, Cotoneaster, box *Buxus sempervirens*, snowberry *Symphoricarpos albus*, Wilson's honeysuckle *Lonicera nitida* and cherry laurel *Prunus laurocerasus*.
- 1.9 Bluebells *Hyacinthoides non-scripta* and ramsons *Allium ursinum* are dominant herbs throughout the field layer, however more notable species such as wood anemone *Anemone nemorosa*, wood melick *Melica uniflora*, wood speedwell *Veronica montana*, yellow archangel *Lamiastrum galeobdolon* and wood millet *Millium effusum* are also frequent throughout. Also of note are the small and localised populations of goldilocks buttercup *Ranunculus auricomus* and sanicle *Sanicula europaea*. Wood sedge *Carex sylvatica* is common along the Trym floodplain and the scarcer thin-spiked wood sedge *Carex strigosa* is also locally frequent.

## **Grassland**

- 1.10 The grassland expanse in the north of the site was occupied by post-war pre-fabricated housing until demolition was finally completed in the 1980s. The resulting grassland was managed as amenity grassland for many years, but efforts have been made in recent years to improve the botanical diversity in selected areas by the seeding and plug planting of native species in addition to mowing and removal of arisings which is slowly reducing soil fertility and is resulting in increased botanical interest.
- 1.11 The grassland is divided into distinct areas by bands of shrub planting.

## **River**

- 1.12 The River Trym flows north-east to south-west through the site. Two tributary valleys run into the main valley of the Trym, one from the north and one from the south, but only the southern valley has a stream; the northern valley is dry.
- 1.13 The channels have a stony substrate, and there is very little emergent or floating vegetation. The water is generally shallow, with some deeper pools in places, although the stream does tend to dry out in summer. The watercourse is largely shaded by bankside trees.

## **History**

- 1.14 Badock's Wood lies in the parish of Westbury-on-Trym, which was a Saxon settlement and religious centre from at least the early 8th century. Some parcels of the land were first specifically mentioned in an indenture of 29 March 1691.
- 1.15 Badock's Wood is likely to be the ten acres of coppice or woodground lying on the sides of the River Trym. Milltut or Milltoot was the name of the field adjoining Badock's Wood containing the Southmead Barrow, presumably referring to its use as a windmill stead in the 17th Century. The tumulus would have given added height although the field around is reasonably exposed to the prevailing wind from the south-west, with views across the Avon valley to Failand Ridge.
- 1.16 Badock's Wood was laid out as a pleasure ground with a system of drives, rides and paths by the time of the first 1:2500 survey of 1880. These connected with the grounds of Holmwood Estate at both upper level (the west end of Elm Avenue) and beside the Trym at the lower end of the wood. Ponds, bridges and weirs were shown on the map, part of a larger system of water features, some of which survive intact. Plantings also took place within the wood and the horse chestnut and beech trees may date from this time.

- 1.17 The name Badock's Wood is in recognition of the gift of land made by Stanley Hugh Badock, (resident at Holmwood Estate from 1905) to Bristol Corporation in 1937, to be used as public open space. Some authors suggest that H.W. Green of Holmwood may have been responsible for landscape works in the wood.
- 1.18 The Southmead Round Barrow (known as the "Mound") is a scheduled ancient monument dating from the early Bronze Age (1600/1400 BC). It is 20 yards in diameter and seven feet high and was crowned with 23 Scots firs in the 15th century. The first cutting into it was made in 1873 and showed the barrow to be made of carboniferous limestone rubble embedded in a reddish earth. Flint flakes and two flint scrapers, together with animal bones were found in the mound. Fragments of human skull were discovered, suggesting that the mound could have been a primary burial ground. Roman coins were also found in Milltut field.



**Photo 1: The Mound**

- 1.19 Allotments were laid out in the Milltut during the Second World War, although not right up to the barrow. Immediately after the war a prefab estate was erected in the field. These were subsequently removed over a period of time from 1979 and by 1982 they had all been demolished.
- 1.20 Bowerman refers to Badock's Wood as a relic of woodland planted with beech, pedunculate oak *Quercus robur*, ash *Fraxinus excelsior* and walnut *Juglans regia* although the avenue of walnuts has now gone. Dutch elm



disease killed many of the elms in 1970 and subsequent storm damage has removed mature specimens of other species. English elm *Ulmus procera* does remain in the wood, as young specimens. Following on from the removal of the last prefabs, Milltut was restored to its intended status as a public open space, with extensive landscaping and planting taking place in the 1980s, although some of the ornamental garden trees were retained.

### **Local Nature Reserves**

- 1.21 Local Nature Reserves (LNRs) are for both people and wildlife. They are places with wildlife or geological features that are of special interest locally, which give people special opportunities to study and learn about them or simply enjoy and have contact with nature.
- 1.22 There are over 800 LNRs in England ranging from windswept coastal headlands, ancient woodlands and flower rich meadows to former inner city railways, long abandoned landfill sites and industrial areas.
- 1.23 Badock's Wood was designated as a Local Nature Reserve by Bristol City Council (BCC) in January 2008 in recognition of its importance for wildlife and people.

### **Management and Action Plan**

- 1.24 This Management and Action Plan has been prepared jointly by Avon Wildlife Trust Ecological Consultancy, Friends of Badock's Wood (FoBW), and Bristol Parks (funded by BIG Lottery) to ensure that Badock's Wood is maintained as a nature reserve, of benefit to both wildlife and people. Local people have had a major input in its production through taking part in consultations in 2011/12 and through meetings of the Friends of Badock's Wood.
- 1.25 The Plan sets out in detail the actions and tasks that will be carried out by Bristol Parks and FoBW to manage and enhance the environment of the Reserve over the next five years (April 2012 to March 2017).

- 1.26 The Plan aims to continue good habitat management without changing the overall character of the woodland. No major changes in site management are planned. It is intended that at the end of the five years the woodland should look very much as it does now, with opportunities taken to enable the already extensive woodland ground flora to further expand its range. Actions will concentrate on removing some of the sycamore and ash saplings before they become dominant, and on removal of the more invasive alien shrubs. The site's status and appearance as a nature reserve will be maintained. However, many of the historic landscape plantings will remain and continue to be enjoyed as part of the wood's heritage.
- 1.27 Efforts will continue to improve the botanical diversity of the grasslands, and to integrate them more naturally with the woodland edge and dividing linear scrub sections by allowing the grass to grow longer, grading naturally into the scrub.
- 1.28 The current accesses will be maintained, but no further tarmaced paths will be created; however it is important that the existing paths are kept in good condition and clear of overhanging vegetation.
- 1.29 Further information on the Reserve, FoBW and Bristol Parks is given in Sections 2 to 5 of this Plan. Section 6 sets out the overall aims that implementation of this Plan will achieve. An additional Appendix will be provided regarding grassland management, following surveys in summer and autumn 2012.
- 1.30 Section 7 sets out the specific tasks identified to meet the objectives in the form of Schedules A to I, with associated maps to illustrate the locations of specific areas. Schedule I contains a summary together with estimated costs and anticipated funding source.
- 1.31 The plan is intended to be a flexible living document. Throughout the five year period local people will be encouraged to give their views on the management of the site. These will be incorporated through an annual review which will produce a report on progress and recommendations for amendments. Please contact FoBW or Bristol Parks if you have any views or

comments on how the site should be managed or ideas for any additional facilities you would like to see. Contact details are on the back cover of this document.

## **2.0 Friends of Badock's Wood**

2.1 In 1997 the Friends of Badock's Wood was formed with the support and assistance of Salim Alibhai, a local activist who was the driving force behind ensuring that Badock's Wood was to become a place for all to enjoy. The group evolved from interested residents from the three bordering communities of Southmead, Westbury on Trym and Henleaze.

2.2 The Group is concerned with the conservation and management of the woodland. They are also committed to providing a safe and clean environment for all local communities to enjoy. To fulfil these aims, the Group's Constitution states that it will:

"Liaise with Bristol City Council's Parks Department to ensure a high level of care for The Badock's Wood LNR and to have a positive input into how the site is managed.

Provide opportunities for involvement by as many individuals as possible, particularly local residents, by way of promoting "woodland events".

Provide a friendly and welcoming community focus for people interested in the preservation of Badock's Wood as a community asset.

Contribute to making Badock's Wood a safe and inviting place to visit.

Encourage more considerate behaviour and greater respect for Badock's Wood by the local community.

Contribute to the management of Badock's Wood, including the protection of any wildlife habitats and to promote the importance of urban green spaces.

Research and collect information relevant to the wildlife and history of Badock's Wood.

Work with Bristol City Council and other bodies (such as BTCV, Natural England, English Heritage, Environment Agency, Wessex Water) to ensure that the effects on Badock's Wood are fully considered in any plans or developments for the surrounding areas."

These aims will be achieved through the implementation of this Management and Action Plan.

- 2.3 In order to involve as many members of the community as possible, Friends of Badock's Wood does not charge membership fees (other than a contribution to costs of meetings) and does not have a formal membership. Meetings and events are open to everyone with an interest in the Wood or its surroundings. The group maintains a mailing list that currently includes over 100 households.
- 2.4 Bristol City Council will maintain the site through core funding as a statutory duty, with some additional funding raised by the Friends of Badock's Wood, to support the activities detailed in this Plan through grants from various funding bodies, donations, fund raising and through the use of voluntary labour.
- 2.5 The majority of the Group's work on the reserve will be carried out using volunteers from the local community. All work will be carried out in consultation with the Assistant Area Parks Manager to ensure that the work complies with the relevant standards, current regulations and any other Council requirements. All work will be carried out in accordance with the agreed Health and Safety Plan (Appendix III).
- 2.6 Friends of Badock's Wood keeps the community informed via the web site at:
- [www.fobw.org.uk](http://www.fobw.org.uk)
- 2.7 The Friends of Badock's Wood are also developing contacts with other community groups.

### **3.0 Bristol Parks**

- 3.1 As owners of the site, BCC have overall responsibility for management and health and safety on the Reserve. These responsibilities will be met by implementation of this Management and Action Plan by Bristol Parks.
- 3.2 Management of the Reserve will be through the BCC Assistant Area Parks Manager, currently Jerry Cole, with currently Mark Newport on site as Park Keeper, and other BCC staff. The Reserve will be managed in consultation with FoBW.
- 3.3 BCC staff will provide information and advice to the public and FoBW on issues relating to nature conservation and will also provide a point of contact within the Council for enquiries about the Reserve. Wildlife management tasks will be carried out through Work Parties which will be agreed between BCC and FoBW. BCC's Woodland and Wildlife Officer (currently Justin Smith) should be consulted when decisions are being made about wildlife or habitat management.
- 3.4 The Assistant Area Parks Manager will work with FoBW to ensure that all work carried out on the Reserve by either contractors or volunteers is completed to an acceptable standard and with due regard to the safety of the public.
- 3.5 Members of the FoBW are regular users of the site and will report any incidences of damage or vandalism to the Assistant Area Parks Manager to allow a rapid response to incidents.

#### **4.0 Badock's Wood Local Nature Reserve**

##### **4.1 Site Details**

As well as the results of field surveys, the information in this plan draws heavily on a number of previous expert reports - Badock's Wood Management Plan 2005-2009; Badock's Wood SNCI (Bristol City Council SNCI Audit 2006); The Invertebrates of Badock's Wood (Tony Smith 2008); Bristol City Council Woodland Survey (BRERC 2003), in particular the SNCI report. (Please see Appendix 1 for a complete list of reports and other information).

###### **4.1.1 Name**

Badock's Wood Local Nature Reserve.

###### **4.1.2 Location**

The central grid reference is ST 580777. Badock's Wood is situated in north west Bristol, between Westbury-on-Trym village, Henleaze and Southmead, lying in the parish of Westbury-on-Trym and the ward of Southmead. The site is adjacent to Henleaze Lake, which lies on its eastern boundary. Westbury Wildlife Park is a continuation of the site in the north-west, but is separately managed.

###### **4.1.3 Local Planning Authority**

Bristol City Council (BCC).

###### **4.1.4 Site Plan**

Please see Figure 1 'Existing State'.

#### **4.1.5 Conservation Status**

The site is a Local Nature Reserve (designated in 2004) and is also a Site of Nature Conservation Importance (under Policy NE5 of Bristol Local Plan 1997). These designations are in recognition of its importance for wildlife and its significance to local people. In addition it is also a Regionally Important Geomorphological/Geological Site. Badock's Wood is listed in the Inventory of Ancient Woodland (Nature Conservancy Council, now Natural England).

#### **4.1.6 Area**

The woodland comprises six hectares, the grassland two hectares.

#### **4.1.7 Nature of Legal Interest**

The site has been in the care of BCC since 1937, when it was given to the city by Sir Stanley Badock, a local industrialist, as an area of open space for the enjoyment of local people. The freehold of the site was purchased by BCC in 1956 from a private owner.

### **4.2 Access**

4.2.1 Parking is available in adjacent roads. Visitors with wheelchairs and pushchairs should use the Doncaster Road entrance, as other entrances have narrow kissing gates or stiles. Tarmac paths throughout the site provide very good 'access for all' trails, although the Lakewood Road East path is not tarmaced all the way and becomes extremely muddy and almost impassable during wet weather.

4.2.2 Access to the site is open and unrestricted to pedestrians. There are seven access points onto the site (please refer to Figure 1):

1. Dark Lane (kissing gate);
2. Greenway Centre (stile);
3. Doncaster Road (kissing gate and main vehicular/disabled entrance gates);
4. Doncaster Road (kissing gate);
5. Lake Road (restricted access - bollards);



6. Lakewood Road (east) (kissing gate)
7. Lakewood Road (west) (kissing gate and vehicular access gates)

Well-used paths run alongside the river/tributary beds (including the dry valley in the north-west, and several paths bisect the grassland in the north of the site.

### **4.3 Physical**

- 4.3.1 Badock's Wood is centred on the valley of the River Trym which flows north-east to south-west through the site. Two tributary valleys run into the main valley of the Trym: one from the north and one from the south, giving the site a cruciform shape. Only the southern valley has a stream; the northern valley is dry. All the valley sides are steep and there is some evidence of small scale and localised quarrying in places. There is a narrow floodplain which supports small areas of floodplain vegetation but which is largely modified by the presence of the footpaths.



**Photo 2: South-western section of River Trym**

- 4.3.2 There are a number of limestone exposures along the valleys. The rocks belong to the Carboniferous Limestone series and include Lower Limestone Shale, Black Rock Limestone, oolites including Gully oolite and some Rhaetic clay with bands of limestone. Crinoid, or sea lily fossils have been found in these exposures.

- 4.3.3 There is no information on the soil types of the site. In the Soil Survey of England and Wales 1983, the site is mapped as an urban area and therefore was not surveyed. However information regarding the soil chemistry was provided by an analysis carried out for FoBW by Lancrop Laboratories in 2010, which showed the soils to have a high nitrogen content.

#### **4.4 Vegetation**

- 4.4.1 Several vegetation surveys have been carried out (please see Appendix 1). The descriptions below are repeated, with updated notes, from Quinn 2006.
- 4.4.2 The most extensive vegetation type is the W8 woodland ash-maple *Fraxinus excelsior*-*Acer campestre* woodland. However, the canopy has been extensively modified by sycamore *Acer pseudoplatanus* invasion and other non-native planting, including stands of beech and horse chestnut. Badock's Wood is an example of a relic Victorian landscaped estate, probably planted between c.1860 -1890.
- 4.4.3 The understory is generally sparse, although very small-scale hazel *Corylus avellana* coppice and outgrown hazel coppice is locally frequent. Other shrub species include frequent holly *Ilex aquifolium*, particularly in the south-west section, field maple *Acer campestre* and occasional spindle *Euonymus europaeus*.
- 4.4.4 The ground flora in some areas of the woodland is fairly species rich, and includes a number of species considered to be ancient woodland indicators (although it is now recognised that some of these species can colonise secondary woodland more successfully than was first thought). Swathes of bluebells and ramsons, often including yellow archangel, are dominant in places, with occasional patches of wood anemone. Other ancient woodland indicators such as goldilocks buttercup, wood speedwell, and wood-millet are found rarely, with sanicle only occurring in two known locations. Hart's-tongue fern *Phyllitis scolopendrium* is abundant, with lesser celandine *Ranunculus ficaria*, cow parsley *Anthriscus sylvestris*, lord's and ladies *Arum maculatum*, dog's mercury *Mercurialis perennis*, wood avens *Geum urbanum*,

early dog violet *Viola reichenbachiana* and sweet violet *Viola odorata*. Thin-spiked wood sedge is locally frequent.

- 4.4.5 There was a proposal in the previous Management Plan that some areas should have access restricted by brash or thorn hedges, but this was subsequently decided against as the wood is open access and such features may only draw attention to such areas.
- 4.4.6 For accurate description and easy reference the woodland has been divided into areas as described in Quinn 2006 (please refer to Figure 1), with the descriptions updated as necessary.

#### Area 1:

The western half of the small tributary valley that forms the southern "arm" of the wood, is situated on a steep east facing slope. With the exception of a single crab apple *Malus sylvestris*, and two large pedunculate oaks in the north of this area, the canopy is dominated by semi-mature ash and sycamore, with younger specimens of these species frequent in the shrub layer, along with hawthorn *Crataegus monogyna*, wych elm *Ulmus glabra* and hazel. The ground flora, although superficially dominated by cow parsley, is rich with much wood anemone, bluebell, dog's mercury and occasional patches of wood melick and yellow archangel. Ramsons is dominant on the lowest slopes adjacent to the stream and there are small patches of common nettle *Urtica dioica* and common cleavers *Galium aparine* on the western edge where there has been recent anthropogenic disturbance. Some streamside hazel coppicing took place in this area, extending into Area 2, approximately five years ago. There was a clump of Japanese knotweed *Fallopia japonica* in the southern tip of this area but this has been treated by BCC over the last few years and appears to be eliminated, although any re-growth should be regularly checked for.

#### Area 2:

Lying to the north-west of Area 1 this area forms part of the southern valley side of the River Trym and is a much more disturbed area with many paths crossing from the residential area to the south west and running down onto the valley floor. BMX biking appears to be popular in this part of the wood,

possibly accounting for much of the bare ground and eroded field layer. On the lower slopes there are many mature beech trees in the canopy with ash, some sycamore and occasional field maple. Despite the presence of so many mature beech there is a fairly dense shrub layer in places where immature specimens of the canopy species predominate, along with hazel, bramble *Rubus fruticosus* agg. and hawthorn. Although approximately one third of the field layer here has been worn away the remaining flora is still of some interest, although ramsons is the most noticeable species; there is also some wood sedge and pendulous sedge *Carex pendula* adjacent to the stream.

Some bird boxes have been erected in this area during the last Management Plan period.

#### Area 3:

Two small triangular areas situated on the valley floor at the intersections of the Trym valley and the two small tributary valleys as well as the intersections of several major footpaths. Several large horse chestnuts, ash and pedunculate oak are very prominent here, although there is no canopy or shrub layer to speak of. These areas did consist of rank grassland with tall herbs, but in recent years have been subject to an amenity cut (i.e. cut every fortnight or so). Ramsons is very common and wood speedwell is occasional. Before the new management hogweed *Heracleum sphondylium*, common cleavers, broad-leaved dock *Rumex obtusifolius*, false oat grass *Arrhenatherum elatius*, creeping buttercup *Ranunculus repens* and wood avens were the most frequent species.

#### Area 4:

This area is the north-western part of the Trym valley and lies between the Trym to the south and the small tributary valley to the east. It is mostly a steep south-facing slope although there is a small quarry face at the junction with the narrow floodplain. A steep constructed gully is located in the west of this area, and is associated with drainage from the David Lloyd Centre on Greystoke Avenue. Along the footpath running alongside the Trym wood sedge is common. The woodland itself is quite scrubby with much bramble, hawthorn and young hazel. Ash and sycamore are the most frequent of the larger trees, although occasional mature beech, ash and horse chestnut are

scattered throughout. Horse chestnut is locally common in the shrub layer to the west. A more established shrub layer, including large hazel stools (cut stems), is present in the east of this area; occasional non-native species such as Cotoneaster *Cotoneaster* sp., non-native Viburnum, lilac *Syringa vulgaris*, mock orange *Philadelphus coronarius*, box, and holm oak *Quercus ilex* are scattered throughout Area 4. The northern edge of this area consists of an inner bank with outer ditch; this bank is quite substantial and supports many old hawthorn, hazel and field maple stools. It is very likely that this bank and ditch are either a very old hedgerow feature or part of a relict woodbank; if the latter is the case this would suggest that this part of the wood may date back to at least the medieval period.

The field layer, although largely dominated by cow parsley, is variable, with scarcer, and more notable species such as goldilocks buttercup, wood millet and yellow archangel being found in the east; bluebell, wood anemone, dog's mercury and wood melick being more frequent in association with areas of mature beech and on the northern slopes; and ramsons, along with common cleavers and herb Robert *Geranium robertianum* locally abundant on the lower slopes. Ivy *Hedera helix* is dominant throughout.

During c1999, a bridge was constructed between this area and Area 2. Occasionally the stream course is blocked by fallen timber; while it is recognised that this provides additional habitat, it has been occasionally necessary to remove it to maintain water flow.

#### Area 4a:

In contrast to the steep slope of Area 4 this is a small area of flat ground, which may have been open ground at some time in the past. This area has an established woodland flora much of which is similar in structure and composition to that found in the east of Area 4 although blackthorn *Prunus spinosa* is locally common here. The bank and ditch described for Area 4 is still present here. Greater stitchwort *Stellaria holostea* and goldilocks buttercup are the more notable field layer species here.

#### Area 5:

This area is the western half of the northern "arm" of the wood - the northern tributary valley. The bank and ditch present along the outer edges of Areas 4 and 4a is still present here although less distinct. It is more open, although less disturbed, than the Areas 4 and 4a to the south-west. Ash and sycamore are the main canopy trees although three large beech are present in the south; hazel, hawthorn and elder *Sambucus nigra* are the most frequent in the shrub layer. Several young horse chestnut are taking hold within the shrub layer. The field layer is essentially ivy and dog's mercury with areas where bluebell, wood melick and hart's tongue fern are quite common. Wood anemone can be locally frequent and there are also patches of wood speedwell and goldilocks buttercup.

#### Area 5a:

The northern tip of Area 5, this is much more disturbed and scrubby with no large trees, only a dense scrub layer of ash, English elm, hazel and bramble with much nettle and common cleavers. The rest of the field layer is poor and largely dominated by ivy.

#### Area 6:

This is directly opposite Area 5a and is the northern tip of the eastern side of the tributary valley. It is largely a young secondary woodland with a young canopy of ash and sycamore with a shrub layer of bramble, young sycamore, English elm, elder, hawthorn, hazel and traveller's joy *Clematis vitalba*. The field layer is very similar to that recorded for Area 5a.

#### Area 7:

Occupying the remainder of the eastern side of the tributary valley this area becomes increasingly steep towards the south. Semi-mature sycamore is frequent although ash is the dominant canopy species; pedunculate oak and field maple become more frequent to the south. The shrub layer is quite sparse and largely composed of hazel, hawthorn, young ash and sycamore, and bramble. Although there are large areas of bare ground where BMX biking activity appears concentrated, there is still a good field layer in areas where erosion is less severe. Along with cow parsley, bluebell and dog's mercury are locally common and there are good patches of wood melick,

ramsons, yellow archangel, wood speedwell, wood sedge and wood anemone.

#### Area 8:

This area comprises the majority of the northern side of the Trym valley; it has a steep southerly aspect and incorporates sections of the narrow floodplain. The woodbank described in Areas 4, 4a and 5 continues here with several old trees and shrubs upon it, however it is less pronounced than in areas to the west. Semi-mature ash and sycamore continue to be the dominant canopy species although there are also some large pedunculate oak, field maple, horse chestnut and occasional Scots pine *Pinus sylvestris*. The field layer remains largely composed of young specimens of the canopy species, although with hawthorn, spindle, wild privet *Ligustrum vulgare*, hazel and bramble along with frequent specimens of horse chestnut and occasional small areas of cherry laurel and the invasive alien snowberry. The western half of Area 8 has a richer ground flora than the eastern half: bluebell, yellow archangel and dog's mercury are locally frequent along with wood anemone, wood melick, hart's-tongue fern, ramsons and wood avens and occasional goldilocks buttercup; however, cow parsley and ivy remain the most dominant species. In the eastern half of this area bluebell, dog's mercury, goldilocks buttercup and wood melick are also present, but are much less frequent, whilst cow parsley and common cleavers are dominant. Spanish bluebell *Hyacinthoides hispanica* is scattered throughout this area. In the western section of the area on the river bank, near the triangle (Area 3) is a large stand of two non-native species, a type of bamboo and a dense thicket of Wilson's honeysuckle.

A set of wooden steps have been provided on this slope; these were refurbished to BCC guidelines during the course of the previous Management Plan.

#### Area 8a:

An area in the north-east of the wood, this straddles both sides of the River Trym and has a number of semi-mature ash and sycamore, although the shrub layer is more important here and includes much bramble, hazel, field maple, sycamore, elder and English elm. Cow parsley, ivy and nettle are very common in the somewhat impoverished field layer.

Area 9:

This is part of the north easternmost section of the site and lies to the northwest of the grassland area G2: a mesh fence marks the boundary between these two areas. Area 9 is bounded on the north-west by the Trym. Occasional semi-mature ash are present here along with scattered hawthorn, hazel, English elm, bramble and with a tall herb / rank grassland community occupying those areas free of scrub. Common nettle is the most frequent herb recorded here.

Area 10:

Occupying much of the southern valley side of the Trym this area is mostly a steep north-facing slope although it also includes areas of the narrow floodplain. The canopy is mostly semi-mature ash with frequent sycamore and occasional pedunculate oak. Horse chestnut is also present as an occasional canopy species. The understory has much English elm within it but also much hazel, holly, bramble and occasional dog rose *Rosa canina*. There are some overgrown coppiced hazels in the west of this area. A field layer dominated by tall herb species is present in the far east of this area but soon gives way to a more typical woodland field layer dominated by ivy, wood avens, cow parsley, hogweed, lesser celandine, hart's-tongue fern and common cleavers. However, more notable woodland species are also locally frequent; these include dog's mercury, bluebell, wood anemone, wood melick, wood sedge, male fern *Dryopteris filix-mas*, ramsons, wood speedwell, early dog violet, yellow archangel, goldilocks buttercup and sanicle is present in the south-west. A previous survey (Quinn 2005) described the sanicle as occurring in two patches but in 2012 this species appears to have expanded in range, with many plants in evidence along this bank.

The occasional broader areas of floodplain frequently support a field layer dominated by ramsons and tall herbs with fewer of the other woodland species mentioned above. In 2005 Spanish bluebell was described as being present here but mostly restricted to individual clumps or small populations close to the boundary with adjacent housing; however this species has now spread and is scattered throughout this area.

The River Trym occupies the valley floor. There is some concern about the stream water quality and the aspiration to have the water tested, with follow-



up if necessary, remains. FoBW have placed a contact number on the Noticeboards so that the public know who to contact if they have any pollution concerns. There is also an aspiration held by FoBW to have the stream weirs (or at least one of them), which were built during historical landscaping, fully reinstated.

Some coppicing of a variety of species was carried out in this area alongside the stream two or three years ago. The non-native bamboo species growing on the opposite bank has spread to this side of the river bank.

#### Area 11:

This is the eastern side of the southern tributary valley. There is a very steep westerly aspect here and a fairly large quarry face near where this area joins Area 10. The canopy is dominated by sycamore with ash frequent; sycamore, horse chestnut and hazel are the main shrub layer species. Cow parsley remains the dominant species in the field layer whilst ivy and common cleavers are also abundant. However, a more diverse woodland flora is also present: dog's mercury, bluebell, yellow archangel, wood sedge and ramsons are frequent, whilst wood melick is occasional. Much garden debris has been thrown over the boundary from adjacent properties and there are more open sections where tall herbs such as common nettle, hogweed and cow parsley, along with wood avens, predominate.

#### Area 12:

This area includes all the tree and shrub planting associated with the grassland area G1 located in the north of the site. The plantings are primarily narrow blocks of trees and shrubs alongside tracks and existing woodland edge. The most frequently planted species are maples *Acer* spp - both native and non-native - ash, poplars *Populus* spp, willows *Salix* spp, whitebeam *Sorbus* species, cherries *Prunus* spp, hawthorns *Crataegus* species, birch *Betula* species and *Viburnum* species along with hawthorn, hazel and pedunculate oak. Most of this planting is approximately fifteen years old but has a dense structure and blends in well with the landscape even though many non-native species have been used. Beneath the trees and shrubs there is a very impoverished field layer mostly composed of ivy, common cleavers, bramble and common nettle.

## **GRASSLAND AREAS**

### **4.4.7 G1:**

This is the large grassland area situated to the north of the woodland, occupying the site of Bowness Gardens - a former prefabricated housing estate. The grassland sections have been subject to a separate survey and Management Plan and will form an Appendix to this Plan. The sward currently consists of large expanses of species-poor semi-improved grassland but with three distinct areas where FoBW and BCC have established wildflower meadows with varying degrees of success and where a greater species diversity can be found. The entire grassland area was previously managed for amenity, subject to regular mowing, but is now cut once a year in order to improve the species diversity.

The site is level and largely well-drained and includes a well-preserved Bronze Age round barrow in the north-west. The grassland around the barrow mound has been subject to an amenity cut in recent years. Rowan trees were planted around the mound approximately 5 years ago, to reflect the ancient tradition of planting this type of tree with historic features. Some biking activity has taken place over the Mound, resulting in grooved tracks, which, as well as being unsightly, may have a negative impact on the archaeology. This activity would appear to be less in 2012.

In 2009 FoBW planted some plant plugs of various woodland edge species, such as primrose *Primula vulgaris* and red campion *Silene dioica*, in the south of G1.

Other enhancements have been made, e.g. bird boxes have been erected on trees. At the Doncaster Road entrance a hedgerow was planted in 2011, and this entrance has also been made more attractive by a school-based mosaics project.

### **G2:**

A small area of rank species-poor grassland on the north-eastern edge of the site with a number of planted and self-sown trees and shrubs - mostly sycamore, ash and alder *Alnus glutinosa*. Tall herb vegetation such as common nettle, docks *Rumex* spp. and hogweed is frequent here.

#### Playing Field

- 4.4.8 Although the Playing Field is not part of the LNR, its location adjacent to the north-west of the site has been seen as an opportunity by FoBW to regard it as an extension of the site and enhance its biodiversity. Tree whips were planted around the southern and western boundaries of the playing field approximately two years ago, including hawthorn and hazel. A wide hedgerow runs along the northern boundary of the playing field; old maps show that there was once an avenue of trees in this location, presumably bordering the driveway to Holmwood House.

#### **4.5 Fauna**

- 4.5.1 There have been several faunal surveys of the site (please see below and Appendix 1). These include badgers (there is an active badger sett on a slope in the north-east of the site), small mammals and invertebrates.
- 4.5.2 In addition, records have been made of birds and butterflies over a number of years. Reports and records are held by FoBW and BCC.

#### **Birds**

- 4.5.3 A diversity of typical woodland species are found.

**Table 1: Badock's Wood Red or Amber Listed Birds (Birds of Conservation Concern 2009 RSPB *et al* (from Bristol Regional Environmental Records Centre)**

Species	Latin name	Status
House sparrow	<i>Passer domesticus</i>	Red listed
Starling	<i>Sturnus vulgaris</i>	Red listed
Dunnock	<i>Prunella modularis</i>	Amber listed
Grey wagtail	<i>Motacilla cinerea</i>	Amber listed
Bullfinch	<i>Pyrrhula pyrrhula</i>	Amber listed
House martin	<i>Delichon urbicum</i>	Amber listed
Stock dove	<i>Columba oenas</i>	Amber listed
Lesser black-backed gull	<i>Larus fuscus</i>	Amber listed
Swallow	<i>Hirundo rustica</i>	Amber listed

In addition, the following woodland species have been recorded during site visits in 2012: song thrush (red listed), bullfinch (amber listed), blackcap, great spotted woodpecker, nuthatch, treecreeper and goldcrest.

### **Invertebrates**

- 4.5.4 A survey was carried out in 2008 (The Invertebrates of Badock's Wood, Tony Smith).
- 4.5.5 A total of 328 species were fully identified with 737 occurrences. Of these, 285 were insects and of these, 227 were two-winged flies (the *Diptera*) with 341 occurrences. Twenty one species were molluscs (slugs and snails). Some rarer species of *Diptera* were found, these were generally species that have a direct association with an insect or a fungus. The report comments that an increase in floral diversity of the meadows would be likely to lead to an increase in the diversity of the invertebrate species. Also that a graded woodland - grassland boundary would be beneficial. Please refer to The Invertebrates of Badock's Wood report.
- 4.5.6 Butterfly transects were carried out for a number of years, recording a number of the commoner species including ringlet, common blue, small tortoiseshell, small skipper, large skipper (these species would have been associated with the grassland), speckled wood was common in the woodland; this species tolerates more shaded areas.

### **Small mammals**

- 4.5.7 A total of seventy-six trap nights (2 nights x 38 traps) yielded four adult wood mice *Apodemus sylvaticus* (Small Mammal Survey 2009).

## **4.6 Biological Evaluation**

- 4.6.1 The woodland supports a diversity of commoner woodland species, and at least three are locally notable as listed below. Plants generally agreed to be ancient woodland indicators (AWI) are also listed below:

**Table 2: Woodland Plant species recorded at Badock's Wood (see Appendix 1 for sources)**

Species	Latin name	Status
Bluebell	<i>Hyacinthoides non-scripta</i>	Protected under Sch 8 of Wildlife & Countryside Act 1981. AWI
Cornsalad	<i>Valerianella</i> sp	Locally uncommon
Goldilocks buttercup	<i>Ranunculus auricomus</i>	AWI
Ramsons	<i>Allium ursinum</i>	AWI
Sanicle	<i>Sanicula europaea</i>	AWI
Thin-spiked wood sedge	<i>Carex strigosa</i>	Locally uncommon
Three-nerved sandwort	<i>Moehringia trinervia</i>	AWI
Wood anemone	<i>Anemone nemorosa</i>	AWI
Wood melick	<i>Melica uniflora</i>	AWI
Wood millet	<i>Millium effusum</i>	AWI

**Table 3: Grassland species recorded at Badock's Wood (see Appendix 1 for sources)**

UGI = unimproved grassland indicator

Species	Latin name	Status
Meadow foxtail	<i>Hordeum secalinum</i>	UGI
Smooth brome	<i>Bromus racemosus</i>	Locally scarce
Field wood-rush	<i>Luzula campestre</i>	UGI
Grass vetchling	<i>Lathyrus nissolia</i>	Locally uncommon UGI
Tufted vetch	<i>Vicia cracca</i>	UGI
Hoary ragwort	<i>Senecio erucifolius</i>	UGI
Pignut	<i>Conopodium majus</i>	UGI
<b>Planted species</b>		
Kidney vetch	<i>Anthyllis vulneraria</i>	Locally uncommon
Ragged robin	<i>Lychnis flos-cuculi</i>	Locally uncommon
Smooth tare	<i>Vicia tetrasperma</i>	Locally uncommon

Locally uncommon = found in 51-150 1km squares in the Bristol region.

Locally scarce = found in 8-50 1km squares in the Bristol region.

- 4.6.2 Common bird's-foot trefoil is present in two distinct forms – a large-leaved upright plant and a smaller-leaved creeping plant. The former is typical of forms found in seed mixes; the latter may have colonised the area naturally.

- 4.6.3 Of the less common species, the most notable is grass vetchling, which is scattered throughout the site although at present (2012) not "in very large quantity" as it was described in 2009. The population of this plant here is of importance in a Bristol context.
- 4.6.4 While the aim of grassland management is to extend the areas of wildflower meadow, planting or seeding is not recommended for the woodland; the ground flora is already quite extensive and management should aim to enable these areas to expand by selective opening of the canopy.
- 4.6.5 Badgers are protected by law and are scarce in Bristol.
- 4.6.6 Badock's Wood is also of strategic importance as part of a network of sites forming a wildlife corridor along the River Trym and connecting with the River Avon.

### **Small mammals**

- 4.6.7 Four adult wood mice is a low tally for any site, especially a large semi-natural woodland. Factors influencing this low capture rate may include:
1. The timing of the survey (spring is a sub-optimal time to undertake mammal trapping).
  2. Disturbance of many of the traps by badgers *Meles meles* thus rendering them incapable of small mammal capture.

### **Fungi**

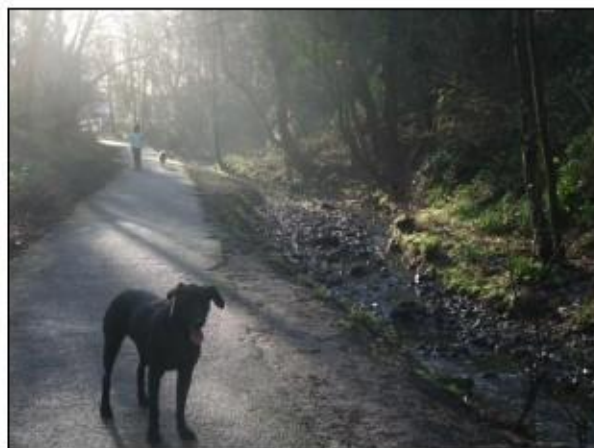
- 4.6.8 This group has not been formally surveyed, but good records exist from expert-led guided walks (Appendix 1). Two species of particular significance have been recorded:-

*Hypoxylon subticinense* - this was found on the trunk of a large standing dead beech tree by the stream. When it was found in the mid-2000s it was fairly rare in Bristol, but the surveyor (Justin Smith) has since found this species at numerous sites in Bristol and wonders if it is responding to climate change.

Of greater note is *Leucoagaricus badhamii* - found in an area of beech in 2004/5, a rare species in the Bristol area.

#### **4.7 Public Use**

- 4.7.1 Badock's Wood's earlier reputation in the 1990s and before for being dark and threatening and best avoided (e.g. "Badock's Wood... could be a very pleasant amenity area.....however, it is being spoilt by vandalism, litter and dead elms" (from *The Valleys of the River Trym* K.T.Batty c.1976)) has, through the ongoing input by BCC and the hard work of local people, particularly the Friends' group, been completely altered. It is now a more open and light woodland popular with dog walkers, joggers, families, photographers and others enjoying the natural world in an urban area.



**Photo 3: Recreational use**

Any anti-social behaviour is confined nowadays to bikers in the woodland and the few dog owners who neglect to clean up after their pets.

- 4.7.2 The popularity of the site was proved by the response to the 2002/3 visitor survey which elicited 192 replies. Over half of the respondents said they visited the site at least once a week. In 2010 local people were consulted for the Area Green Spaces Plan; about 20 people came on a conservation walk. Further consultation was carried out in 2012 to involve local people in the development of this plan which elicited mainly very positive comments about the site and its management (please see Appendix 4).

- 4.7.3 There are four interpretation sign boards at the site, one each at the Doncaster Road and Lakewood Road entrances, one adjacent to the Bronze Age Mound and one on the meadow. A site leaflet was published in 2008 and has been updated and reprinted in early 2012. Some rustic-style benches have been installed, one carved from a tree trunk on the day of the opening of the Doncaster Road entrance improvements in May 2011, which was a very successful project involving local schools and a mosaic artist.



**Photo 4: Celebration of Doncaster Road entrance improvements**

The steps linking the streamside walk with the grassland were refurbished in 2004.

- 4.7.4 Several public events have taken place during the course of the last Management Plan. The Forest Festival was held in 2008, and in conjunction with SusWot (Sustainable Westbury) FOBW hosted a very successful biodiversity wildlife event (known as a 'Bioblitz'), in July 2011, run as a family fun day. Guided walks have taken place covering bats, birds, fungi and botany. Further events, workdays and talks are planned to encourage public use and appreciation of the site. There are also plans to involve more schools with the site.



## **5.0 Aims and Objectives**

### **5.1 Overall Objectives**

The aim of this Community Input Management and Action Plan is to ensure that Badock's Wood is maintained as a nature reserve, of benefit to both *wildlife* and *people*. Its management during the last Management Plan period has done much to enhance its biodiversity and accessibility and is to be recognised as having been very successful.

### **5.2 Wildlife Objectives**

- To restore and maintain Badock's Wood as semi-natural broadleaved woodland, but encouraging its landscape-designed history to be recognised through the retention of selected exotic species.
- To encourage wildflower diversity within the grasslands and provide a more natural gradation from grassland, through tall herbs and scrub to adjoining woodland.

### **5.3 People Objectives**

- To provide suitable facilities for quiet recreation on the site, providing that these do not conflict with nature conservation requirements.
- To encourage community use of the site, active involvement in its management and increased appreciation of its wildlife and history.

### **5.4 Management Rationale for Wildlife**

**General (further detail is supplied under the Work Programme)**

- 5.4.1 Management of the wildlife on the site to achieve the above aims is not anticipated to require major intervention. As well as the ongoing maintenance by BCC, it is anticipated that much of the required work can be carried out by

volunteers at FoBW Work Parties. Some assistance may be available through the BCC Woodland Officer's 'Blue Skies' practical work team.

- 5.4.2 For woodland to thrive, it is important that its natural structure is encouraged, i.e. a species-rich ground flora, a diverse and well-structured scrub/understory layer and a canopy that is not too closed. A dense canopy would block light to the lower layers, restricting their species-richness.
- 5.4.3 Some non-native species can grow extensively and be very invasive, restricting light to and outcompeting native species. Action should be taken to control such species.
- 5.4.4 The River Trym has a series of weirs along its length through Badock's Wood. There is considerable enthusiasm for the restoration of these Victorian structures, but wariness regarding the impacts (e.g. it is possible that they will cause siltation upstream, which is often associated with a concentration of pollutants), therefore a feasibility study is proposed.

### **Grassland**

- 5.4.5 Much of the grassland was seeded in the 1950-80s when the prefabricated housing was demolished. Efforts have already been made to enhance the botanical diversity of the extensive areas of grassland in the north of the site. These have had varying success, and recommendations are made for further enhancements in the Grassland Management Plan, found in Appendix 5.
- 5.4.6 At present, due to the cutting regime, there is an abrupt division between the grassland and the woodland. A more natural appearance would be achieved by leaving a six metre wide buffer zone at the edges of the grassland, to allow a gradation from grassland through tall herbs and scrub into woodland.

### **Monitoring and Survey**

- 5.4.7 It is important that features of ecological value on the site are monitored. A considerable amount of survey data already exists for the site and not all species / habitats need to be monitored every year, but consideration should

be given to establishing a programme of monitoring for which funding could be sought, unless expert volunteer input is available.

## **5.5 Management Rationale for People**

5.5.1 Furthering local knowledge about and a sense of ownership of the site amongst local people, community groups and schools will be continued. Generally there is sufficient use of the wood during daylight for it to be a safe and pleasant place to enjoy, and this will be encouraged.

5.5.2 Only three undesirable activities continue to cause problems:

- Informal access by BMX bikers, mainly occurring in the north of the wood and most prevalent in the summer months.
- While most dog walkers are responsible, lack of consideration by a few means that dog fouling is a constant source of complaint; as well as being unpleasant, particularly in the summer, it is also a health hazard, particularly to young children. It has been commented on as a problem by an education worker taking a local school to visit in 2011. Additional bins will be considered for installation and action taken to encourage use of all the bins.
- Some residents whose gardens back onto the woodland in the south of the site dump rubbish over into the woodland. Litter also appears in the river. Litter can be a problem; as well as being unsightly it suppresses the growth of vegetation, and requires regular removal.

5.5.3 There is a desire to improve the entrances to the woodland, especially at Lakewood Road, and Lake Road, to make these entrances appear more welcoming to all comers. More opportunities to sit down *en route* around the site have been requested, so appropriately styled benches are proposed.

5.5.4 Further educational projects involving schools and youth groups will also be encouraged through partnership with Avon Wildlife Trust and FoBW.

**6.0 Schedules of Work to be Carried Out**

- 6.1 The following Schedules set out the list of tasks that it is intended will be carried out over the next five years.
- 6.2 Schedule I summarises all the tasks set out in Schedules A to H and includes a budget costing and the proposed source of funding.
- 6.3 Funding and carrying out these tasks is the joint responsibility of BCC's Parks Department and the FoBW as signatories to this Plan. Each task will however have a lead backer and these are also indicated in Schedule I.
- 6.4 The plan will be reviewed each year, with some tasks being carried forward. Please contact FoBW if you have any views or comments on how the site should be managed or ideas for any additional facilities you would like to see. Contact details are on the back cover of this document.
- 6.5 Under a separately funded and reported project, Avon Wildlife Trust's Community Team will be establishing a wildlife pond (please refer to Figure 2 'Desired State') in spring 2012.

(Please note that for all tasks the rationale is explained in text below)

## Schedule A

### Ongoing (Annual) tasks

#### Wildlife

	Task	Area	Carried out by	When
A1	Thin immature ash, sycamore	All	FoBW	Oct - Feb
A2	Thin horse chestnut	3,4,5,8,10,11	FoBW	Oct - Feb
A3	Keep rocky outcrops free of excessive scrub	Most of woodland	FoBW/Contractor	Oct - Feb
A4	Clear out / repair / replace bird nesting boxes	4, grassland	FoBW	Oct - Dec
A5	Remove Spanish bluebell	7, 8, 10	FoBW	Spring
A6	Meadow cut and removal of arisings	G1	BCC	August
A7	Annual cut, ½ in alternate years	3	BCC	August
A8	Ensure that areas around beech trunks are free of scrub	Most	FoBW	Winter

## **Schedule B**

### **Ongoing (Annual) tasks**

#### **People**

	<b>Task</b>	<b>Area</b>	<b>Carried out by</b>	<b>When</b>
B1	Discourage BMX/mountain bikes	2	FoBW, BCC	Summer
B2	Encourage dog walkers to use bins	All	FoBW, BCC	Any time
B3	Maintenance of bins	Lakewood Road, Dark Lane and Doncaster Road	BCC	Any time
B4	Clear rubbish; educate householders	1, 10, 11	FoBW, BCC	Winter only; any time
B5	Litter picking	All	FoBW, BCC	Winter
B6	H&S check - general, see trees below	All Trees within falling distance of a path or boundary	BCC	Annually if possible and every four years
B7	Mow to ½ metre either side of all paths	Grassland	BCC	Fortnightly
B8	Maintenance of definitive footpath surfaces	All	BCC	As needed
B9	Clear vegetation from footpaths	Woodland	FoBW	As needed
B10	Maintenance of access gates	All entrances	BCC	As needed
B11	Maintenance of structures e.g. culverts, gabions	Rivers	BCC	As needed

B12	Removal of hazardous or large items of rubbish	All	BCC	As needed
B13	Response to incidents of damage or vandalism	All	BCC	As needed
B14	Maintenance of Interpretation and other Site Boards	Main entrances and Mound	BCC	As needed
B15	Amenity cut on Mound	G	BCC	Regularly March to October

### **Schedule C**

#### **Ongoing (Annual) Tasks**

#### **Monitoring**

	<b>Task</b>	<b>Area</b>	<b>Carried out by</b>	<b>When</b>
C1	Monitor for re-appearance of Japanese knotweed	1	BCC	Spring / Summer
C2	Impacts of weir creation if done	2, 4	FoBW	
C3	Bat box usage x 3	10	?ABG	April, May, August, Sep, Oct
C4	Condition of planted whips	Western end of Playing Field	BCC	
C5	Bamboo potential to spread	8 (west and east)	FoBW	Summer
C6	Bird boxes - 3 owl boxes	4		Autumn
C7	Bird boxes	Grassland trees		Autumn
C8	Monitor for re-appearance of removed non-native	All	FoBW	Spring/summer

*Badock's Wood Local Nature Reserve  
Management and Action Plan – April 2012 to March 2017*

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	species			
C9	Water quality	Stream	BCC (FoBW to report as well)	
C10	Condition of Mound	G	BCC	Any
C11	Send all biological records to BRERC, and to FoBW		All	

### Capital projects

#### Schedule D

##### Year 1 - April 2012 to March 2013

	Task	Area	Carried out by	When
D1	Re-coppice hazel - x 1 small area (known as a coupe)	5	FoBW	Winter
D2	Remove (and treat most) non-natives - Spanish bluebell	10	FoBW	Spring 2012 and likely to be ongoing
	Snowberry, cherry laurel	8	FoBW	Winter
	Cotoneaster	3, 4	FoBW	Winter
	Holm oak	4	FoBW	Winter
	Wilson's honeysuckle	2, 3	FoBW	Winter
D3	Open up streamside vegetation - 25x10m block	8	FoBW	Winter



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D4	Remove and treat selected young/dead sycamore trees x 3 or 4	2, 5, 10, 11	FoBW	Winter
D5	Create 6m uncut buffers for more natural gradation of grassland to woodland	G1, Playing Field	BCC	G1 - August . Playing Field - at next cut.
D6	Step improvements	10	FoBW	Any
D7	Smart trail	All	Schools/AWT	Any
D8	Coppice English elm adjacent to path near badger sett	8, 8a	FoBW	Winter
D9	Repair muddy stretch of path at north-western end of grassland (south-west of Mound)	G1	BCC	Any
D10	Erect bat boxes x 12	Woodland		Autumn, Winter
D11	Review cutting regime with BCC	G1	FoBW / AWT	Any but before August
D12	Explore possibility of key volunteer		FoBW / BCC	
D13	Build a pond	G1	AWT and FoBW	May
D14	Trees H&S check	Any trees within falling distance of a path or boundary	BCC	Winter
<b>Monitoring</b>				
D15	Natural England grassland condition assessment	Grassland		Mid-summer

### **Schedule E**

#### **Year 2 - April 2013 to March 2014**

	<b>Task</b>	<b>Area</b>	<b>Carried out by</b>	<b>When</b>
E1	Wildflower meadow creation	G1 - adjacent to one of current wildflower meadow creation areas	FoBW/BCC	Spring
E2	More "rustic-style" benches	G1	FoBW	
E3	Make Lakewood and Lake Roads entrances more welcoming		BCC	
E4	Improved stile access at Greenway Centre		BCC	
	<b>Monitoring</b>			
E5	Natural England woodland condition assessment	Woodland	FOBW	Spring

### **Schedule F**

#### **Year 3 - April 2014 to March 2015**

	<b>Task</b>	<b>Area</b>	<b>Carried out by</b>	<b>When</b>
F1	Re-coppice hazel	10	FoBW	Winter
F2	Weir restoration feasibility study	8, 10, 2, 4	BCC	Any
F3	Step improvements	8	Contractors	Winter
F4	Open up a further 25x10m block of streamside vegetation	8	FoBW	Winter

**Schedule G**

**Year 4 - April 2015 to March 2016**

	<b>Task</b>	<b>Area</b>	<b>Carried out by</b>	<b>When</b>
G1	Pollard or coppice mature sycamore	To be selected	Contractors	Winter
G2	Trees H&S check	Any trees within falling distance of a path or boundary	BCC	Winter

**Schedule H**

**Year 5 - April 2016 to March 2017**

	<b>Task</b>	<b>Area</b>	<b>Carried out by</b>	<b>When</b>
H1	Improve path from eastern end of Lakewood Road	10	BCC	

### Schedule I – Summary, Costing and Funding

AAPM = Area Assistant Parks Manager  
 ABG = Avon Bat Group  
 AWT = Avon Wildlife Trust  
 BCC = Bristol City Council  
 CSP = Clean Streams Project (BCC)  
 FoBW = Friend of Badock's Wood

Item	Description	Lead Backer	Estimated Cost	Proposed Funding
<b>Ongoing Wildlife Tasks</b>				
A1	Thin immature ash, sycamore	AAPM/FoBW		Volunteers
A2	Thin horse chestnut	AAPM/FoBW		Volunteers
A3	Keep rocky outcrops free of excessive scrub	AAPM/FoBW		Volunteers / BCC
A4	Clear out / repair / replace bird nesting boxes	AAPM/FoBW		Volunteers
A5	Remove Spanish bluebell	AAPM/FoBW		Volunteers
A6	Meadow cut and removal of arisings	AAPM		BCC
A7	Annual cut, ½ in alternate years	AAPM		BCC

A8	Ensure that areas around beech tree trunks are free of scrub.	AAPM/FoBW	Volunteers	
Ongoing People Tasks				
B1	Discourage BMX / mountain bikes	AAPM/FoBW		BCC
B2	Encourage dog walkers to use bins	AAPM/FoBW		BCC
B3	Maintenance of bins	AAPM/FoBW		BCC
B4	Clear rubbish; educate householders	AAPM/FoBW		BCC
B5	Litter picking	AAPM/FoBW	Volunteers	
B6	H & S check	AAPM		BCC
B7	Mow to ½ metre either side of grassland paths	AAPM		BCC
B8	Maintenance of definitive footpath surfaces	AAPM		BCC
B9	Clear back vegetation from footpaths	AAPM/FoBW		BCC / Volunteers
B10	Maintenance of access gates	AAPM		BCC
B11	Maintenance of structures e.g. culverts, gabions	AAPM		BCC

B12	Removal of hazardous or large items of rubbish	AAPM		BCC
B13	Response to incidents of damage or vandalism	AAPM		BCC
B14	Maintenance of interpretation boards	AAPM		BCC
B15	Amenity cut on Mound	AAPM		BCC
<b>Ongoing Monitoring Tasks</b>				
C1	Monitor for re-appearance of Japanese knotweed	AAPM/FoBW		BCC
C2	Impacts of weir if creation done	AAPM/FoBW		Volunteers
C3	Bat box usage x3	FoBW		Volunteers
C4	Condition of planted whips	AAPM/FoBW		BCC
C5	Bamboo potential to spread	FoBW		Volunteers
C6	Bird boxes - three owl boxes	FoBW		Volunteers
C7	Bird boxes	FoBW		Volunteers
C8	Monitor for re-appearance of removed non-native species	FoBW		Volunteers
C9	Water quality	BCC CSP		BCC
C10	Condition of Mound	AAPM		BCC

C11	Send all biological records to BRERC, and to FoBW		
<b>Schedule D CAPITAL WORKS Year 1 – April 2012 to March 2013</b>			
<b>Wildlife Tasks</b>			
D1	Re-coppice hazel - x1 small area (known as a coupe)	AAPM/FoBW	Volunteers
D2	Remove (and treat most) non-natives	AAPM/FoBW	Volunteers / BCC
D3	Open up streamside vegetation - 25x10m block	AAPM/FoBW	Volunteers
D4	Remove and treat selected young/dead sycamore trees x 3 or 4	AAPM/FoBW	Volunteers / BCC
D5	Create 6m uncut buffers for more natural gradation of grassland to woodland	AAPM	BCC
D6	Step improvements	AAPM/FoBW	Volunteers
D7	Smart trail	AWT	
D8	Coppice English elm adjacent to path near badger sett	AAPM/FoBW	Volunteers
D9	Repair muddy stretch of path at north-	AAPM	BCC

	western end of grassland (south-west of Mound)			
D10	Erect bat boxes x12	FoBW/?ABG		Volunteers
D11	Review cutting regime with BCC	AAPM/FoBW		BCC
D12	Explore possibility of key volunteer	FoBW / AWT		
D13	Build a pond	AWT		Volunteers
<b>Monitoring</b>				
D14	Natural England grassland condition assessment	FoBW		Volunteers
<b>Schedule E CAPITAL WORKS Year 2 - April 2013 to 2014</b>				
E1	Wildflower meadow creation	FoBW		Possibly a grant
E2	More "rustic-style" benches	FoBW		Volunteers
E3	Make Lakewood and Lake Roads entrances more welcoming	AAPM/FoBW		BCC, possibly a grant
E4	Improved stile at Greenway Centre	AAPM		BCC
<b>Monitoring</b>				
E5	Natural England woodland condition assessment	FoBW		Volunteers



**Schedule F CAPITAL WORKS Year 3 - April 2014 to 2015**

F1	Re-coppice hazel	AAPM/FoBW		Volunteers
F2	Weir restoration feasibility study	AAPM/FoBW		Possibly a grant
F3	Step improvements	AAPM		Possible a grant
F4	Open up a further 25x10m block of streamside vegetation	AAPM/FoBW		Volunteers

**Schedule G CAPITAL WORKS Year 4 April 2015 to March 2016**

G1	Pollard or coppice mature sycamore	AAPM		BCC
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**Schedule H CAPITAL WORKS Year 5 April 2016 to March 2017**

H1	Improved path from eastern end of Lakewood Road	AAPM		BCC
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## **Schedule A – Ongoing (Annual) Wildlife Tasks**

Please note that brash resulting from woodland work will be used for the creation of log piles (stems should be left in as long lengths as possible to prolong their life) or chipped *in situ* for use on paths.

### **A1 Thin immature ash and sycamore**

*Ash and sycamore seeds germinate and grow readily in shade. If not controlled these tall "leggy" poles will come to dominate parts of the shrub layer, shading out the ground flora. This is particularly true of sycamore, which most sources believe is not a native species. It would be an impossible and thankless task to attempt to clear the woodland of all the sycamore saplings! Therefore it is proposed that areas where the ground flora is particularly rich should be targeted. A selected section/s of the wood could therefore be worked on each year. Some healthy selected specimens of ash should be left to grow on. This work should mainly be carried out in the winter to avoid the bird nesting season, although very sparse areas can be tackled at other times of year providing that a careful check is carried out to ensure there will be no disturbance to nesting birds.*

### **A2 Thin horse chestnut**

*This species is also a non-native, and seeds prolifically, leading to the shading out of the understory and ground flora layers. There are many hundreds of seedlings and saplings of this species throughout the woodland. The intense shade cast by the mature trees has led to bare ground underneath, but this species is popular so a commitment to ongoing pulling of the seedlings and saplings will be the best form of control rather than considering the felling of any mature trees. Again, care must be taken to avoid disturbance to nesting birds.*

A3      Keep rocky outcrops clear of excessive scrub

*The old quarry faces are an attractive geological and interesting historical feature of the site. They will quickly become obscured by scrub such as bramble and mature ivy, and this will also prevent the growth of mosses and other lower plants. However, care should still be taken when carrying out this work in the winter as invertebrates may be using such scrub for hibernation. Only some of this work can be carried out by volunteers as many of the rock faces are precipitous; suitably qualified rope workers may need to be employed.*

A4      Clear out, repair, replace bird nesting boxes

*Most bird boxes will require the clearing out of old nest debris. Birds will not discard material from previous years' use and there can be a build up of parasites. (In natural situations multi-brooded birds will avoid using the same nest again in one season and it is likely that material is disturbed by weather or other animals between seasons). Some boxes may need repairing or replacing.*

A5      Remove Spanish bluebell

*This species has been introduced to gardens, parks and estates because it is more "showy" than the native bluebell. Unfortunately, it hybridises with the native species to produce fertile plants with various characteristics of each species (although Spanish characteristics tend to dominate). Consequently there is a risk that the native bluebell will be lost. The main differences between the two species are that native bluebells have flowers that grow only on one side of the stalk and have creamy anthers. The Spanish bluebell has flowers that grow all around the stalk and have pale to dark blue anthers; these two features also typify the hybrid.*

*During the flowering season, dig up the Spanish bluebell bulbs. Place them in a black plastic sack and leave for a year before composting, to ensure that they are not re-introduced.*

A6 Meadow cut and removal of arisings

*The botanical diversity of the meadows will be increased by not cutting the grass until the flowers have seeded and the seed has been dispersed. Cutting too early will prevent seed dispersal, and cutting later into the autumn increases the risk that thistles and other "weedy" species will seed and/or that it becomes too wet to cut without damaging the ground. It is very important that all the cuttings are removed; if they are left they will act as a mulch, suppressing next year's growth, and there is a risk that their breakdown will release nutrients e.g. nitrates, back into the ground, which will favour the growth of the coarser grasses at the expense of the herbs. After the first year, the 6m buffer installed in 2012 will not be cut. Please refer to the Grassland Management Plan for more detail.*

A7 Annual meadow cut triangle

*Currently the triangle area is subject to a regular amenity cut, but its value to wildlife would be enhanced if the grass were allowed to grow long, restoring an area of tall herb grassland. Such habitat is of value to overwintering invertebrates and therefore cutting alternate halves each autumn would help to maximise the wildlife value.*

A8 Keep beech tree trunk bases free of scrub

*This will benefit the important mycorrhizal (i.e. associated with the roots) fungi. These fungi assist in providing essential nutrients to the trees.*

**Schedule B – Ongoing People Tasks**

B1 Discourage BMX bikes

*This usage, particularly in Area 2, has caused considerable damage to the ground flora. If this activity proves difficult to eliminate, consideration should be given to creating a dedicated track designed to avoid features of ecological interest.*

B2 Encourage dog walkers to use bins

B3 Maintenance of dog bins

*There are dog bins available at the entrances on Lakewood Road, Dark Lane and Doncaster Road. However it has been noted that these fill up quickly! Consideration should be given to installing more dual purpose bins i.e. for rubbish and dog faeces, especially at the main entrances.. Maintenance will be carried out as part of the contract covering all Bristol bins in accordance with the agreed standards and includes emptying the bins and replacing any that are damaged. Use of the bins will be monitored by the Park Keeper.*

B4 Clear fly tipping and educate householders

*BCC regularly approach offending householders in the area. FoBW are keen for approaches to be made but are concerned that local people don't find that the only notifications about their local woodland are requests not to fly tip!*

B5 Litter picking

*A major site clear up could be held each year, preferably in the winter when litter is more visible and less damage would be caused to the ground flora. Local schools and youth groups could be invited to participate and local community litter picks can be very successful. It may be a good approach to include an hour of litter picking at the end of each workday, rather than making it an entire event.*

B6 Health and Safety Audit

*Bristol Parks will carry out Health and Safety Audits and risk assessments of the site at least once per year. This will include an assessment of any dead standing wood, which should be left in situ if possible for its habitat importance. Further audits will be carried out in the event of any damage to the site due to vandalism or natural causes such as storms or fires. FoBW will receive copies of these audits and will report any circumstances brought to their attention that may affect the safety of the site.*

B7 Grassland path maintenance

*Although the meadows will be cut annually, it will be important to keep the paths free of encroaching vegetation. If the grassland is regularly mown to half a metre back from either side of the path, the site will not only be more comfortable to walk through, but will give the correct impression that, despite the grass being only infrequently cut, the site is being properly managed. In addition, it will be necessary to mow paths through the grassland to conform with current "desire lines" so that easy access is maintained through the long grass. People have expressed the desire also to be able to walk along the edges of the meadows, and especially the playing field. These paths will need to be agreed with the Park Keeper.*

B8 Maintenance of Definitive Footpath Surface

*The surface of these paths will be regularly inspected and maintained in an acceptable condition to encourage use of the site. Where necessary, wood chippings will be used in areas that tend to become muddy; this applies particularly to the woodland paths in the north-east of the site.*

B9 Cutting Vegetation from Footpaths – As required April to September

*Minor work cutting mainly brambles is sometimes required on informal paths not covered by the contracts. This work will be undertaken at work parties by FoBW.*

B10 Maintenance of Access Gates

*There is an issue at the Doncaster Road entrance with the mosaics "puddling". This is currently being remedied.*

B11 Inspection and Maintenance of Structures

*e.g. gabions, culverts.*

B12 Removal of Hazardous or Large Items of Rubbish

*Friends of Badock's Wood will report any items to the Park Keeper or Assistant Area Parks Manager.*

**B13     Response to Incidents of Damage/Vandalism**

*FoBW will report any damage to the Park Keeper or Assistant Area Parks Manager. A further risk assessment of the site will be undertaken if necessary after any major incidents.*

**B14     Maintenance of Interpretation Boards**

*These have been set up at Lakewood Road, on the meadow, by the Mound and at Doncaster Road. They will be checked regularly for damage and deterioration and repaired accordingly.*

**B15     Amenity cut on Mound**

*This will be undertaken approximately every fortnight during the growing season.*

**Schedule C – Monitoring**

**C1     Re-growth of Japanese Knotweed.**

*The patch of Japanese knotweed near the Lakewood Road entrance appears to have been well controlled, but this vigorous species could re-appear, so it will be necessary to check the vicinity during the spring/early summer. Any signs should be reported to the Park Keeper or the Assistant Area Parks Manager. It is believed to be growing in the Wildlife Park to the west of the site .*

**C2     Impact of weir restoration**

*This is only necessary if the desired aim of restoring one weir as a trial takes place during the course of this plan. The main concern is the possibility that siltation will be increased behind the weir.*

C3 Bat box usage

*It would be good to have inspections of the current bat boxes (although they are very high!) and any further boxes that are put up. This would have to be done (in autumn) by a licensed bat worker to determine what species, if any, are using them, and provide further advice as appropriate. Avon Bat Group may be able to provide this expert input.*

C4 Condition of planted whips - Playing Field

*These will be inspected in late summer/autumn by the Park Keeper/Assistant Area Parks Manager and any problems addressed.*

C5 Bamboo potential to spread

*There are two species present in the wood, and each provides visual interest. The bamboo in the east of the site near the river does not appear to be too invasive, but the stand by the stream near the triangle has spread to the opposite bank. This main stand is popular visually and will be retained, while the growth on the opposite bank will be removed. The remaining stand should be controlled to avoid any increase in its present extent.*

C6 Bird boxes - three owl boxes

*Inspect in late summer to review usage and positioning, and instigate any necessary repairs. Consider involving the Hawk and Owl Trust.*

C7 Bird boxes in grassland area.

*Inspect in autumn to review usage, remove old nesting material, and instigate repairs/replacement. Consider putting more bird boxes up; these should be of the woodcrete type made by Schwegler.*

C8 Monitor for re-growth of removed non-native species



*Even once removed, it is likely that some of these species may re-grow, so it will be necessary to check the known sites and remove any re-growth as necessary. It will also be necessary to be vigilant for the appearance of these species in previously unknown sites.*

C9 Water quality

*There are serious concerns amongst local people about the condition of the watercourse. Pollutants are thought to emanate from a car wash (it has been stated that on a Friday, foam is seen in the stream), detergents, domestic inputs and possible sewage mis-connections. A particular issue at the outfall in Area 4 is under investigation. There is also a problem with local drains flooding in heavy rain and overflowing. Despite many approaches being made to the Environment Agency and the council it has proved very difficult to achieve any improvements in the situation. It will be important to continue to have the water quality tested regularly and the sources of pollution identified and prevented. Bristol City Council's Clean Stream project (a partnership between the EA, BCC and Wessex Water) would lead on this. FoBW will encourage reporting to the EA and to David Lloyd Ltd.*

C10 Condition of Mound

*Unfortunately it has been observed that people are riding cycles across this ancient feature, occasionally producing an obvious cut groove through the grassland. This could have implications for its archaeological interest and should be monitored under expert advice.*

**Schedule D – Year 1 – April 2012 to March 2013**

**Wildlife Tasks**

D1 Re-coppice hazel

*This will be done in two areas this year, one coupe in Area 5 and one in Area 10, approximately ten trees in each. Coppicing will help to prolong the life of*

*the old stools; if left uncoppiced they can collapse, allowing fungal disease to enter.*

**D2 Remove non-native species**

*Spanish bluebell, snowberry, cherry laurel, Cotoneaster, Holm oak, Wilson's honeysuckle, will be targeted for removal as they are likely to spread and shade out the native ground flora (and Spanish bluebell produces a fertile hybrid with native bluebell). The bamboo on the western side of the stream is popular and will be left in situ, but a clump on the opposite side will be removed.*



**Photo 5: Wilson's honeysuckle**

**D3 Open up streamside vegetation**

*In order to allow more light to reach the stream and encourage aquatic plant growth, a 25m x 10m block of scrub will be cut down. Two such areas on the northern bank of the stream have been identified. One will be cut in the first year, but not treated; it will eventually grow again and will be monitored for its impact. After two years, and with the agreement of FoBW depending on the perceived impacts, another block of a similar size will be selected for cutting down. By this process i.e. a rotational programme of scrub management, the*

*amount of light reaching the river will increase, which should benefit aquatic plants and animals.*

- D4 Remove selected young/dead sycamore trees x3/4 in number

*There are some such sycamore which provide no ecological or aesthetic purpose and they should be removed.*

- D5 Create 6m uncut buffers around grassland and playing field

*This will provide a more natural 'woodland edge habitat', where woodland grades to scrub and then a tall herb community with long grass. As plant species establish in this region, it will provide nectar, flowers and fruit, a valuable food source for many species of invertebrates, birds and small mammals. Once these areas are mature it will be necessary to introduce management to prevent them scrubbing over completely and developing into secondary woodland. This can be avoided by cutting 20 metre lengths as "scallops" in alternate years. It is unlikely that this will be necessary within the life of this plan, during which time the buffers will be allowed to develop.*



**Photo 6: Playing field, eastern edge**

D6 Step improvements

*The short section of steps from the northern entrance in Lakewood Road in Area 10 need replacing/resetting. This could be a volunteer project.*

D7 Smart trail

*There are currently no plans for a nature trail as such, but there is the potential through the school project being developed by Avon Wildlife Trust to develop a smart trail e.g. it might be possible to use 'QR codes', which enable people to link directly to a relevant website through their mobile phones.*

D8 Coppice young English elms adjacent to path near badger sett

*English elm seems to survive to approximately 15 years around which time it becomes vulnerable to Dutch elm disease. The elms in this vicinity are of that age and therefore to coppice them would both prolong the presence of this species and provide better cover for the badger activity in this area.*

D9 Path repair

*The path lying south-west of the Mound has a few metres' stretch of discontinuity between the surfaced paths at either end. This short section tends to hold water and become very muddy. It should be made good to the quality of the paths at either end.*

D10 Erect bat boxes

*Bat boxes would improve the roosting opportunities for these species. Further boxes, of the woodcrete type made by Schwegler, should be installed, two on a tree trunk to offer bats a change of aspect. Consider approaching Avon Bat Group.*

D11    Review cutting regime with BCC

*In order to improve the botanical composition of a grassland it is necessary to mow it much less frequently than that carried out for short grass (amenity grassland) and to only mow the grass at certain times of the year. The most important time to cut the grass is August, by which time the plants have had the opportunity to grow, produce and shed seed. In this way the flowering potential for the following year is maximised. The wildflower meadow sections of the grassland should be mown only in August and the cuttings completely removed. Please refer to Grassland Management Plan for more detail.*

D12    Key volunteer

*It is an aspiration of FoBW to have a key volunteer who would be able to organise and lead work parties and act as a volunteer site warden. They would be trained in Health and Safety issues such as First Aid, safe tool use and also in leading volunteer work parties. It may be worth using the Green Volunteers website [www.greenvolunteersbristol.co.uk](http://www.greenvolunteersbristol.co.uk) or CSV (Community Service Volunteers) to encourage more volunteers to attend workdays, through which a key volunteer may emerge. Helen Adshead, through BCC's Wild City project, may be able to give some assistance, but her allocated time for Badock's Wood is limited to only two days per year. Justin Smith may be able to provide training to volunteers in woodland management.*

D13    Build pond

*A wildlife pond will be created at the south-eastern end of the grassland. (This was carried out by AWT's Community Team in 2012).*

D14    Grassland monitoring

*This could be achieved on a four-yearly basis by using a grassland monitoring procedure in the more species-rich areas. This can be a simple process but does require some botanical knowledge. It would provide meaningful data for effective monitoring. If the first survey could be carried out in the summer of*

*2012, it would be a very useful means of monitoring the effectiveness of the improved grassland cutting regime.*

#### **Schedule E – Year 2 – April 2013 to March 2014**

##### **E1 Wildflower meadow creation**

*If the grassland could be enhanced to increase its botanical diversity, it would be a significant contribution to local wildlife and also to Bristol and Avon's Biodiversity Action Plans. The natural status would appear to be unimproved neutral grassland (i.e. that growing on soils formed from clay, probably Keuper Marl in this area). Efforts have already been made by FoBW in three separate areas of the grassland with considerable success. These areas could be extended by further meadow creation to create larger areas of wildflower meadow. A firm called Emorsgate Seeds can provide native seed of local relevance. Such a project would require funding, as the approach with the greatest chance of success is to scrape off the top layer of nutrient rich soil, particularly to reduce the levels of nitrate and phosphate, before sowing seed. This is vital if rampant grass growth and tall ruderals such as thistles and docks are not to overwhelm the more valuable herb species. Please see the Grassland Management Plan for further information.*

##### **E2 Seating**

*There are already some seats around the site, particularly the grassland; these are welcomed by visitors and more have been requested. The installation of further 'rustic'-style benches (similar to those at the triangle) would be a popular addition to the woodland and the grassland without compromising the semi-natural appearance of the site. However, it has been expressed during the consultation for this Plan, that the seats should be comfortable, preferably with backs, and of a material that does not hold water (the timber benches tend to be damp most of the time). The actual numbers and locations would need to be agreed.*

##### **E3 Lakewood and Lake Roads Entrances**

*If the "high profile" Lakewood Road entrance to Badock's Wood could be made more welcoming, it is considered that more people would use the wood. The style adopted by Northern Slopes in south Bristol has been mentioned as being very appropriate for here as well. In addition, changing the paint of the railings to a less formal colour than black, removing unsightly posts just inside the entrance, and changing the public footpath sign so that it lets people know they are in Badock's Wood (the sign currently points to Badock's Wood!), may all help to increase the popularity of the Local Nature Reserve. It has also been commented that elderly people find the slope quite slippery, putting them off entering the site, so consideration could be given to the installation of a handrail. A bench not far from this entrance would also mean that elderly people could enjoy the wood without having to walk so far. Such improvements would be likely to be used as there are flats specifically for the elderly just opposite the Lakewood Road entrance. Lake Road entrance has been described as "dark and uninviting".*

E4      Greenway Centre entrance

*A stile has been established here, which was intended to replace and be an improvement on a previous kissing gate-type entrance which was found to be accessible to motor bikes. However, it is rather awkward to negotiate and therefore consideration should be given to replacing it with a more user-friendly stile. It has been commented by local people that they would like to be able to use this access point as a route to the local doctors' surgery and other facilities, so a path would also be welcomed.*

E5      Woodland condition assessment

*As with the Natural England grassland condition assessment process, this is also a fairly easy to use monitoring method likely to provide useful data for continued site monitoring. It would require some training and a certain amount of ecological knowledge.*

**Schedule F – Year 3 – April 2014 to March 2015**

F1      Re-coppice hazel

*A further area of hazel should be coppiced, as described in D1.*

- F2 Weir restoration feasibility study.

*It may be necessary to acquire funding so that this exercise can be undertaken with appropriate expertise.*

- F3 Step improvements

*The set of larger steps in Area 8 has suffered from some earth retraction, leading to the already quite steep risers becoming even steeper. The steps should be re-set and the risers made lower, to accommodate a wider section of the community. This is a large project which probably is more suited to funded contractor work. This is a big project that is likely to require contractor use and funding.*

- F4 Open up a further block of streamside vegetation

*This will only be carried out if monitoring of the effects of D3 shows that it is valuable.*

#### **Schedule G – Year 4 – April 2015 to March 2016**

- G1 Pollard or coppice mature sycamore

*Opening up certain areas of the woodland by partial removal of timber would help to increase light to the ground flora and also help to reduce the abundance of the very invasive sycamore seedlings.*

- G2 Trees H&S check

*Of particular concern are any trees from which branches could fall onto paths or boundaries. A check was made by BCC in January 2012. This check led to the following tree works (to be carried out in winter 2012) - felling seven trees (six of which were dead), monolithing two trees, reducing one tree,*

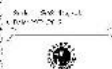


*removing dead wood from the surfaced paths, and having a 'Picus' test carried out on one large beech to establish the extent of decay in the trunk.*

**Schedule H – Year 5 – April 2016 to March 2017**

H1 Lakewood Road - eastern entrance

*This path is on a fairly steep incline and can become quite treacherous to use, especially in wet weather. Consideration should be given to improving its surface.*



**SWT**  
ecological consultancy

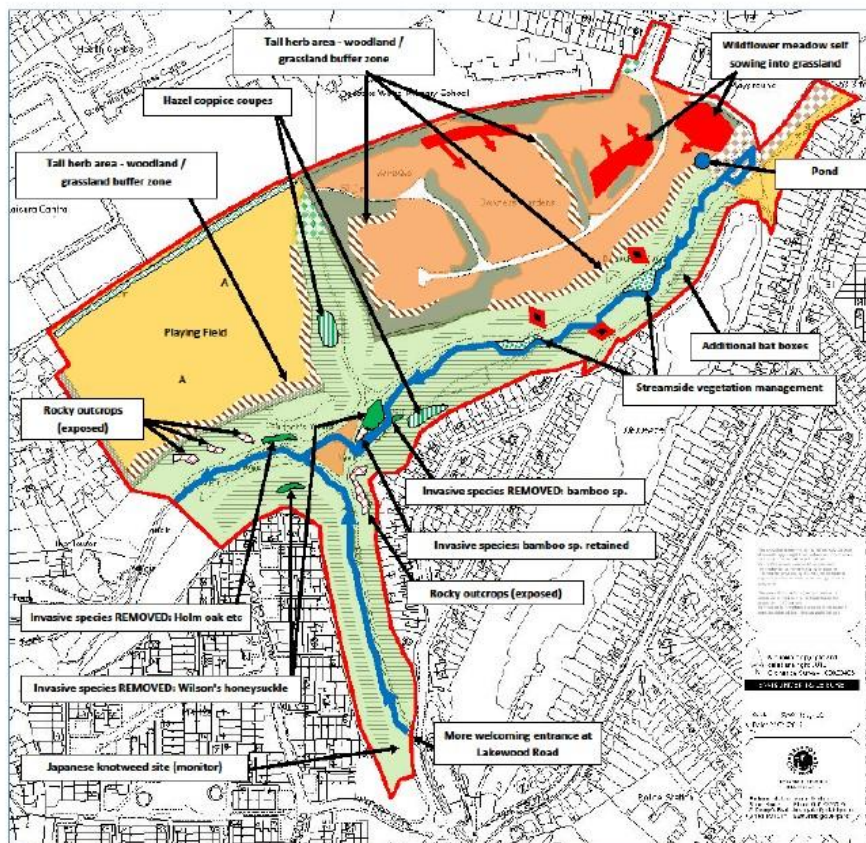
12 Sycamore Road, Staines, Middlesex TW20 0YU  
Tel: 01753 67771 Fax: 01753 67772 [www.swit.co.uk](http://www.swit.co.uk)

Client: Friends of Badocks Wood

Title: Badocks Wood Habitat Map  
Date: 01/02/2012  
Drawn: PH  
Job Ref: AWT112

Figure 1. Existing State

100m



Legend	Habitat type
	Broad-leaved semi-natural woodland
	Scrub woodland
	Scrub woodland / tall herb mosaic
	Tree planting (more than 5 years)
	Recent tree planting (less than 5 years)
	Tall herbs
	Severely improved neutral grassland
	Poor/semi-improved grassland
	Amenity grassland
	Species-rich field layer
	Planted wildflower meadow to self seed adjacent grassland
	Introduced shrub
	Hedge
	Running water
	Standing open water
	Rocky outcrops
	Steps (improved)
	Site boundary

AWT ecological consultancy

32 Wootton Bassett Road, Stroud, Glos, GL8 1LN  
 Tel: 01292 617773 Fax: 01292 617775 www.awt-ecological.org.uk

Client: Friends of Badock's Wood

Title: Badocks Wood Habitat Map  
 Drawn: PH  
 Job Ref: AWT112  
 Figure 2: Desired State

100m

N

## ***Appendix I – Sources and Consultation***

- i This Management and Action Plan has been developed from the previous management plan for Badock's Wood by the Friends of Badock's Wood in partnership with Bristol Parks, British Trust for Conservation Volunteers and the Forest of Avon (Badock's Wood Community Management Plan 2005-2009). The Friends of Badock's Wood have had a strong input.
- ii The primary source of public views is the Stakeholder Meeting carried out at the Greenway Centre on January 26th 2012. This meeting was widely publicised among at least 30 organisations and 22 people attended the meeting (of these, four were members of FoBW).
- iii The information from these sources was supplemented by the views expressed at meetings of the Friends of Badock's Wood Steering Group held on 25 November and 6 December 2011, and a site visit on 6 January 2012.
- iv Further information was gathered in the form of a questionnaire carried out by AWT Ecological Consultancy in the woodland itself, when passers by were asked a series of questions about how they use the site. (Please see Appendix 4).
- v Several reports have been produced for Badock's Wood which provide an indication of the importance of the site for different species groups and also help to inform improved management. They are:-
  - Badock's Wood plant list (Callanan and Ramsden May 2011);
  - Soil Analysis Results (Lancrop Laboratories 2010);
  - Botanical Survey of Grassland (Wessex Ecological Consultancy 2009);
  - Badger Survey (Badger Consultancy 2009);
  - Small Mammal Survey (Quinn, P 2009);
  - The Invertebrates of Badock's Wood (Smith AG 2008);
  - Magic Meadow event (Higgins 2007);
  - Notes on Second Area of Meadow (Oldfield 2007);
  - RIGS assessment (Stonebridge 2006);

- Botanical list of new meadow (Houston 2006);
- Geology and Geomorphology at Badock's Wood (Stonebridge 2006);
- Fungus Foray (Justin Smith 18/11/2006);
- Badock's Wood SNCI (Bristol City Council SNCI Audit 2006);
- Fungus Foray report (in Badock's Wood Newsletter Spring No 1 2004);
- Flowers of the Wood (Rosemary Burton in Badock's Wood Newsletter No 2 Autumn 2004);
- Bristol City Council Woodland Survey, Badock's Wood (BRERC 2003);
- Archaeological Landscape Study of Bowness Gardens and Badock's Wood (Bristol and Region Archaeological Services 2001);
- Botanical Survey (BRERC 1993);
- Seed list for third meadow area (not dated).

vi      Copies of the reports are available from the Friends of Badock's Wood, Bristol City Council and BRERC.

## **Appendix II – Constitution of The Friends of Badock's Wood**

Name of Group: Friends of Badock's Wood

### **Aims and Objectives:**

The Group aims to ensure that the Badock's Wood Local Nature Reserve (LNR) is maintained and protected as a nature reserve for the mutual benefit of both wildlife and people. To fulfil these aims, the Group will:

Liaise with Bristol City Council's Parks Department to ensure a high level of care for The Badock's Wood LNR and to have a positive input into how the site is managed

Provide opportunities for involvement by as many individuals as possible, particularly local residents, by way of promoting "woodland events"

Provide a friendly and welcoming community focus for people interested in the preservation of Badock's Wood as a community asset

Contribute to making Badock's Wood a safe and inviting place to visit

Encourage more considerate behaviour and greater respect for Badock's Wood by the local community

Contribute to the management of Badock's Wood, including the protection of any wildlife habitats and to promote the importance of urban green spaces

Research and collect information relevant to the wildlife and history of Badock's Wood

Work with Bristol City Council and other bodies (such as BTCV, Natural England, English Heritage, Environment Agency, Wessex Water) to ensure that the effects on Badock's Wood are fully considered in any plans or developments for the surrounding areas.

### **Membership and Equality:**

The Group is non political and Membership is open to anybody with an interest in Badock's Wood or the immediate surrounding area.

The Group will achieve this objective by ensuring that membership is as widely

publicised as possible and promote the fact that membership is open to everyone.

**Organisation:**

All Meetings are open to all Members of the Group. Individual Members will be elected to the following posts:

**Chairman** – who will act as the main contact and spokesman for the Group and will also keep Meetings fair, unbiased and on time.

**Vice-Chairman** – who will stand-in for the Chair, as and when necessary.

**Treasurer** – who will be responsible for maintaining a bank account for the Group, holding the cheque book, keeping receipts and a record of all income/expenditure for the Group. Two signatures will be required on any cheques issued by the Group.

**Secretary** – who will be responsible for arranging Meetings, circulating Meeting's Agendas and Minutes/Notes and maintaining a record of all Members' contact details.

**Minutes Secretary** – who will be responsible for taking Minutes/Notes at Meetings.

**Projects Leader** – who will be the focus for liaison with outside Agencies regarding funding applications for any major projects and to take the lead on progressing these applications to their eventual conclusion.

In time, as the Group evolves, it may be organisationally efficient to create the following additional posts, as and when deemed necessary:

**Work Party Organiser** – who will liaise with Bristol City Council to agree any practical conservation/maintenance work to be undertaken by the Group and who will also ensure that all necessary equipment is mobilised for each work session.

**Research Co-ordinator** – who will collate information on the history of Badock's Wood and who will also be responsible for making the information available to Members and other interested parties.

All practical work to be carried out by the Group will be agreed and risk-assessed by Bristol City Council in order to meet the conditions of the Council's Public Liability Insurance. Each Work Party will have a Leader trained in the safe use of tools (the Leader will not necessarily be the Work Party Organiser as it is expected that the Group will have several people willing to be Leaders).

There will be an Annual General Meeting (AGM) at which the Group's finances and activities will be reported and officers elected. Changes to the Constitution can be made at the AGM. Vacant Officer's posts can be filled at any time during the year but any such vacancies must be ratified and elections held at the next AGM. Any individual may hold up to two elected posts concurrently.

The AGM will be held in March/early April each year, following due Notice of 14 days.

As far as possible, decisions will be reached by consensus rather than by voting.

In addition to *ad hoc* workdays, the Group will hold Ordinary Meetings as necessary – probably up to 6 times a year. There will be standing invitations to Bristol City Council's Parks Department, Avon & Somerset Constabulary and Ground4Change (formally The Trymside Project) to attend these meetings.



### **Appendix III – Health and Safety Plan**

#### **Introduction**

The Friends of Badock's Wood are committed to ensuring that all works are carried out safely and with minimum risk to both volunteers and the public.

This Plan describes the specific arrangements that will be made to ensure that this is achieved.

#### **Co-ordination and Consultation with Bristol City Council**

Badock's Wood is owned by Bristol City Council and all works will be carried out with the Council's knowledge and consent.

The principle contacts within the Council are:

Assistant Area Parks Manager - Jerry Cole [jerry.cole@bristol.gov.uk](mailto:jerry.cole@bristol.gov.uk)  
Tel. 0117 9031813

#### **Friends of Badock's Wood Organisation**

#### **Risk Assessments**

The Council will carry out risk assessments for all activities on the site in accordance with its own procedures.

The content of these assessments will be discussed with the Friends of Badock's Wood, who will also be given copies.

The Work Party Leader will be responsible for carrying out any further risk assessments relating to the specific tasks and the specific work locations that they

consider necessary. Copies of these assessments will be passed to the Council prior to works commencing.

### **Work Party Leaders Duties (when/if one is appointed)**

At the start each Work Party the Work Party Leader shall identify themselves and brief all those attending on the following:

- The identity of the qualified first aider;
- The tasks to be undertaken;
- The risk assessments and the control measures to be implemented;
- The use of any tools supplied for use at the Work Party (Tool talks);
- The procedure in event of accidents.

The Work Party Leader shall ensure that everyone has understood the information given and ensure that the attendance sheet is signed.

The Work Party Leader will also ensure that everyone has completed a Work Party Registration Form. This form asks for emergency contact details for each person and for details of any medical conditions that might be relevant to that person's participation.

### **Procedure in event of accidents**

In the event of any accident the Work Party Leader's first priority is to ensure that any necessary first aid treatment is given and the emergency services contacted if necessary.

If hospital treatment is not required but the person is unable to continue working then that person should be accompanied home.

In the event of hospital treatment being necessary the person given as an emergency contact or a relative must be informed.

All accidents must be reported to the Assistant Area Parks Manager at the earliest opportunity and entered in the Council's accident book.

Any major accidents should be reported to the HSE Incident Centre:

**Telephone** - 0845 3009923 or via their web site (<http://www.riddor.gov.uk/>)

## **Appendix 4 - 2012 Consultation**

### **Community Consultation for Badock's Wood Community Input Management Plan renewal**

#### **AIMS**

##### Questionnaire

- to initially engage people who use Badock's Wood and encourage thought and discussions on current state of the site and possible future enhancements;
- to find out how people use the wood;
- to publicise forthcoming Stakeholder meeting;
- to document responses to influence both proposed future management and attitudes to proposed management.
- 

##### Public Stakeholder meeting

- to engage attendees on principles of habitat management and encourage discussion on how these could be applied to Badock's Wood;
- to inform attendees of proposals of habitat management;
- to gain and document feedback on the above to inform habitat management proposals.

#### **METHOD**

Two **on-site questionnaires** of people walking / cycling through Badock's Wood:

- Friday 20 January 2012, 12 noon to 2:30pm
- Monday 23 January 2012, 9:30am to 11:30am

Twenty two people were asked set questions, with additional discussions initiated by interviewer as appropriate depending upon responses.

##### **Public Stakeholder meeting**

- Thursday 26 January 2012, 7:30pm to 9:30pm, Greenway Centre, Southmead

Posters advertising the meeting were displayed at 21 local locations, including entrances to Badock's Wood, libraries and newsagents.

The meeting consisted of a Powerpoint presentation of photographs of Badock's Wood, showing all habitats and examples of proposed habitat management areas. Attendees were encouraged to and actively participated in discussions.

Twenty two people attended.

(Note - some, but not all, of those attending the meeting were those interviewed for the questionnaire)

A **Guided Walk** was held on Sunday 19 March 2012 1400-1600hrs. Eighteen people attended of whom approximately five people had already attended the Stakeholder Meeting. A further two people were already Friends of Badock's Wood.

## **OUTCOMES**

From responses to the **questionnaire**, of those that expressed an opinion, all stated that they greatly valued Badock's Wood and were keen for it not to change. Most were attracted to the woods to walk their dog(s).

### **Summary of responses to questionnaire, stakeholder meeting, guided walk**

Habitat management - although there was a desire for the wood to retain its current condition, there was little negative feedback to management proposals. It should be noted that the large buffers from woodland to grassland were thought by some to be both problematical (with regard to football pitches) and may affect the enjoyment of walking around the edges of and through the grassland. Therefore it is emphasised that paths will be cut through the grassland to follow current "desire lines". Also, the presence of non-native invasive species was often not recognised as an issue for habitat management. When reasons and explanations were given as to the benefits for wildlife of non-native removal, this type of habitat management was generally accepted. This is mentioned here because one proposal is to remove the Wilson's Honeysuckle from the prominent position of the central 'triangle' area of the woodland. The benefits for wildlife of its removal may have to be highlighted to users of the wood.

The desire for more seating was highlighted.

Other comments included concerns with litter, the quality of the water in both the Trym and its tributary, accessibility of some paths, and the need for more bins. A great deal of praise was given to the current Park Keeper, and there is a recognition of the recent improvements and general 'friendliness' of the wood.

A comment that the stile behind Greenway Centre should be replaced with a kissing gate and that a path should be there has been incorporated into the Management Plan.

The Management Plan proposals were explained at various relevant locations during the guided walk around the site. There was much discussion generated and overall a consensus was expressed in favour of the proposals.

For further information on  
Badock's Wood, or to give your  
views on the management of the  
reserve, please contact:

**Jerry Cole - Assistant Area Parks  
Manager**

Blaise Nursery  
Kingsweston Road  
Lawrence Weston  
BRISTOL  
BS11 0XF

Tel: 0117 9031813

Fax: 0117 9031406

**Frances Robertson**

Secretary, Friends of Badock's Wood  
Email: [fobwsecretary@yahoo.co.uk](mailto:fobwsecretary@yahoo.co.uk)  
[www.fobw.org.uk](http://www.fobw.org.uk)

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