



# **Troopers Hill**

## **Local Nature Reserve**

### **Management and Action Plan**

#### **April 2004 to March 2009**



**Approved Document June 2004**

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

  
Signed

9/6/2004  
Date

Susan Acton-Campbell  
Chair  
for Friends of Troopers Hill

  
Signed

9th June 2004  
Date

Peter Wilkinson  
Bristol Parks  
for Bristol City Council



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## **1.0 Introduction**

### **Troopers Hill**

- 1.1 Troopers Hill, St George, Bristol, is a Local Nature Reserve on a hillside that has been quarried and mined in the past.

Troopers Hill contains a fascinating mix of history, wild plants and animals.

- 1.2 With heather and broom, rocky crags, spoil heaps and gullies, and stunning views, Troopers Hill is one of the most spectacular wildlife spots in the city.



*A view of the City of Bristol from Troopers Hill*

### **Geology**

- 1.3 Troopers Hill's geology is unusual in Bristol. Most of the city lies on carboniferous limestone, but Troopers Hill is dominated by pennant sandstone. In places, the sandstone can be seen on the surface, both as natural outcrops and old quarry faces.
- 1.4 The sandstone has resulted in acid soils, which are rare in Bristol. This has encouraged a wealth of plants to flourish, that are found nowhere else in the City.

### **Heathland**

- 1.5 Ling and bell heather, more commonly found in places like Exmoor and Dartmoor, thrive on the acid soils on Troopers Hill. Look out for their purple flowers in late summer.

### **Grassland**

- 1.6 The grassland on Troopers Hill is unique to Bristol. Only plants that tolerate the acid soils survive. Look out for heath bedstraw and sheeps sorrel. The grassland is also home to three different types of grasshopper including the mottled grasshopper which is rare in the city.

## **1.0 Introduction (Continued)**

### **Woodland and Scrub**

- 1.7 The lower slopes and richer soils on Troopers Hill are covered in scrubby areas and woodland. Trees and shrubs present include hawthorn, silver birch, oak, apple, broom and gorse.
- 1.8 The broom (for which Troopers Hill is the best site in the city) and gorse are easily recognised by their attractive yellow flowers. The woodland and scrub are alive with birds including woodpeckers, blackcaps, whitethroats and jays. The scrub is also home to the dark-bush cricket.

### **Insects**

- 1.9 Troopers Hill is also alive with butterflies in the summer. Common blues, holly blues, small coppers and the beautiful brimstone have all been seen this year. Unfortunately the rare grayling for which the site was once well known has not been seen since the mid nineties.
- 1.10 In addition to butterflies there are many smaller less noticeable invertebrates on Troopers Hill and for many of these it is the most important site of its type in the Bristol region. There are a large number local rarities and even an endangered species, the mining bee, *Nomada guttulata*. This and other more common mining bees nest in the areas of erosion on the hill making these areas of bare ground one of the most important habitats on the site.

### **History**

- 1.11 Troopers Hill has a fascinating history that has shaped its appearance today. The famous chimney was built to take fumes from industrial works at the bottom of the hill and may date from as early as the eighteenth century. The Friends of Troopers Hill have incorporated the chimney, with its characteristic lean to the west, into their logo.
- 1.12 Troopers Hill was also quarried for pennant sandstone and mined for coal, fire clay and iron at various times in its past. Quarrying for pennant sandstone is thought to have started in medieval times and continued to the twentieth century.
- 1.13 Several deep coalmines run under the hill and a small amount of open-cast mining was done on the hill in the early 1900s. But, throughout its history, Troopers Hill has remained open land. On a 1610 map of Kingswood it is marked as Harris Hill, while old newspaper reports indicate that donkeys were kept on Troopers Hill in the nineteenth century, and as a result the Hill was known as Donkey Island.

## **1.0 Introduction (Continued)**

### **Local Nature Reserves**

- 1.14 Local Nature Reserves (or 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.
- 1.15 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.
- 1.16 Troopers Hill was designated as a Local Nature Reserve by Bristol City Council in 1995 in recognition of the wide range of wildlife present on the hill and its importance as a unique habitat in the Bristol area due to the presence of acidic soils.

### **Management and Action Plan**

- 1.17 This Management and Action Plan has been prepared jointly by Bristol Parks and Friends of Troopers Hill to ensure that Troopers Hill 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 a survey in 2002/2003 and through open meetings of the Friends of Troopers Hill.
- 1.18 The Plan sets out in detail the actions and tasks that will be carried out by Bristol Parks and the Friends of Troopers Hill to manage and enhance the environment of the Reserve over the next five years (April 2004 to March 2009).
- 1.19 No major changes are planned. It is intended that at the end of the five years the hill should look very much as it does now. Actions will concentrate on maintaining the existing mix of habitats and enhancing the facilities for quiet recreation, such as by improving access, providing benches and additional interpretation of the site. Troopers Hill is a Nature Reserve, not a formal park and it will be maintained as such.
- 1.20 Although the adjacent Malvern Rd Open Space is not part of the Local Nature Reserve it is considered to be part of Troopers Hill by the majority of the public and is the most frequented access route. Given the importance of this area to the impression given to the public of the site overall, it must be considered in any improvements made to the site. It has therefore been decided to incorporate its management within the scope this plan. A consultation process on the future of this area is included for the first year.

## **1.0 Introduction (Continued)**

- 1.21 Further information on the Reserve, the Friends of Troopers Hill 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.
- 1.22 Section 7 sets out the specific tasks identified to meet the objectives in the form of Schedules A to G, with associated maps to illustrate the locations of specific areas. Schedule H contains a summary together with estimated costs and anticipated funding source.
- 1.23 The plan is intended to be a flexible living document Throughout the 5 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 The Friends of Troopers Hill 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.



*Troopers Hill February 2004*

## **2.0 Friends of Troopers Hill**

- 2.1 In December 2003 the Friends of Troopers Hill was formed with the support and assistance of Bristol City Council's Local Nature Reserve Officer, Sally Oldfield.
- 2.2 The group's aims include working with the Council to preserve and enhance the environment of the hill, to bring about improvements, such as better access, and to provide information on the wildlife and history of the site. 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, the Friends of Troopers Hill does not charge membership fees and does not have a formal membership. Meetings and events are open to everyone with an interest in Troopers Hill or its surroundings. The group maintains a mailing list that currently includes over 80 households.
- 2.4 A copy of The Friends of Troopers Hill Constitution is included at Appendix II.
- 2.5 The Friends of Troopers Hill will fund the activities detailed in this Plan through grants from various funding bodies, donations, fund raising and through the use of voluntary labour.
- 2.6 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 Council's Local Nature Reserve Officer and Community 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).
- 2.7 Regular Newsletters are produced and distributed as widely as possible to keep the community informed and the group has a web site at



*Work Party 6<sup>th</sup> March 2004*

[www.troopers-hill.org.uk](http://www.troopers-hill.org.uk).

## **2.0 Friends of Troopers Hill (Continued)**

- 2.8 The Friends of Troopers Hill are also developing contacts with other community groups through the St George Partnership. The St George Partnership Times is also used to publicise Group events and meetings.
- 2.9 In addition efforts will be made to involve local schools and youth groups in practical tasks and through projects on the wildlife and history of the hill.



*Spring Clean 3<sup>rd</sup> April 2004*

### **3.0 Bristol Parks**

- 3.1 As owners of the site, Bristol City Council 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 Community Parks Manager for East Bristol (currently Gary Ratcliffe) and the Local Nature Reserve Officer (currently Sally Oldfield) who have joint responsibility for the site. The Reserve will be managed in consultation with the Friends of Troopers Hill.
- 3.3 The Local Nature Reserve Officer will provide information and advice to the public and the Friends of Troopers Hill 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 to be carried out on Work Parties will be agreed between the Local Nature Reserve Officer and the Friends of Troopers Hill Work Party Organiser.
- 3.4 The role of Local Nature Reserve Officer was created in September 2002 with a three-year duration to September 2005 (year 2 of this plan); the post is 75% lottery funded through English Nature. Acting in this role Sally Oldfield has raised the public profile of the Reserve and encouraged community involvement through the establishment of the Friends of Troopers Hill. Both Bristol Parks and the Friends of Troopers Hill consider this role to be vital to the successful implementation of this Management Plan. It would therefore be desirable for the appointment to be extended to cover at the whole of the five-year period and all efforts will be made to secure the necessary funding.
- 3.5 The Community Parks Manager will work with the Friends of Troopers Hill Work Party Organiser 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.
- 3.6 Members of the Friends of Troopers Hill are regular users of the site and will report any incidences of damage or vandalism to the Community Parks Manager to allow a rapid response to incidents.



*Sally Oldfield*

## **4.0 Troopers Hill Local Nature Reserve**

### **4.1 Site Details**

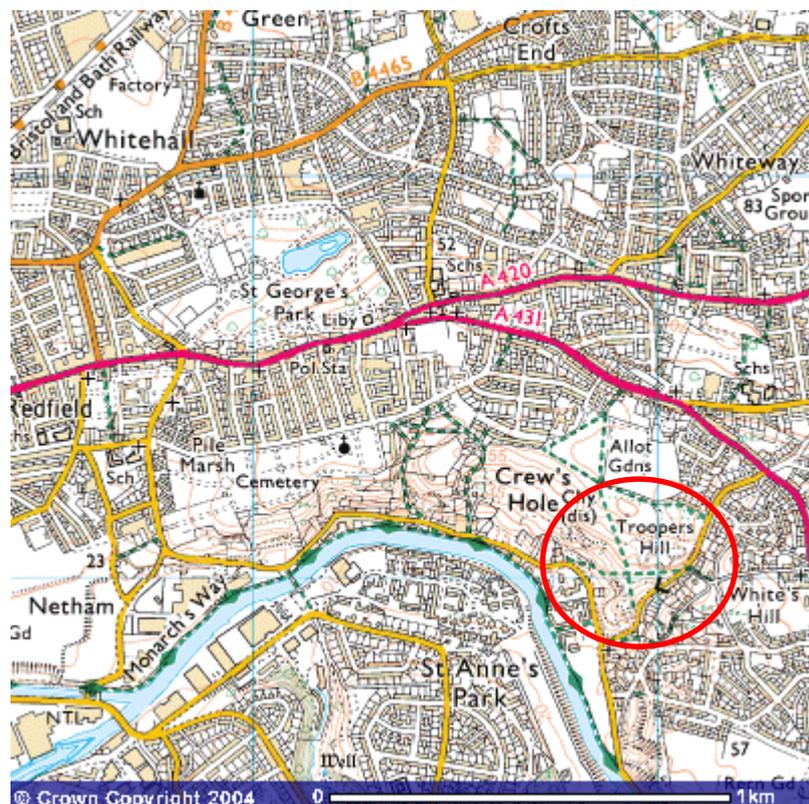
This Section is largely reproduced from the Management Plan produced in March 1999 for Bristol City Council by Wessex Ecological Consultancy. The details have been brought up to date and further information from David Gibbs Invertebrate Survey of the year 2000 has been incorporated.

#### **4.1.1 Name**

Troopers Hill Local Nature Reserve.

#### **4.1.2 Location**

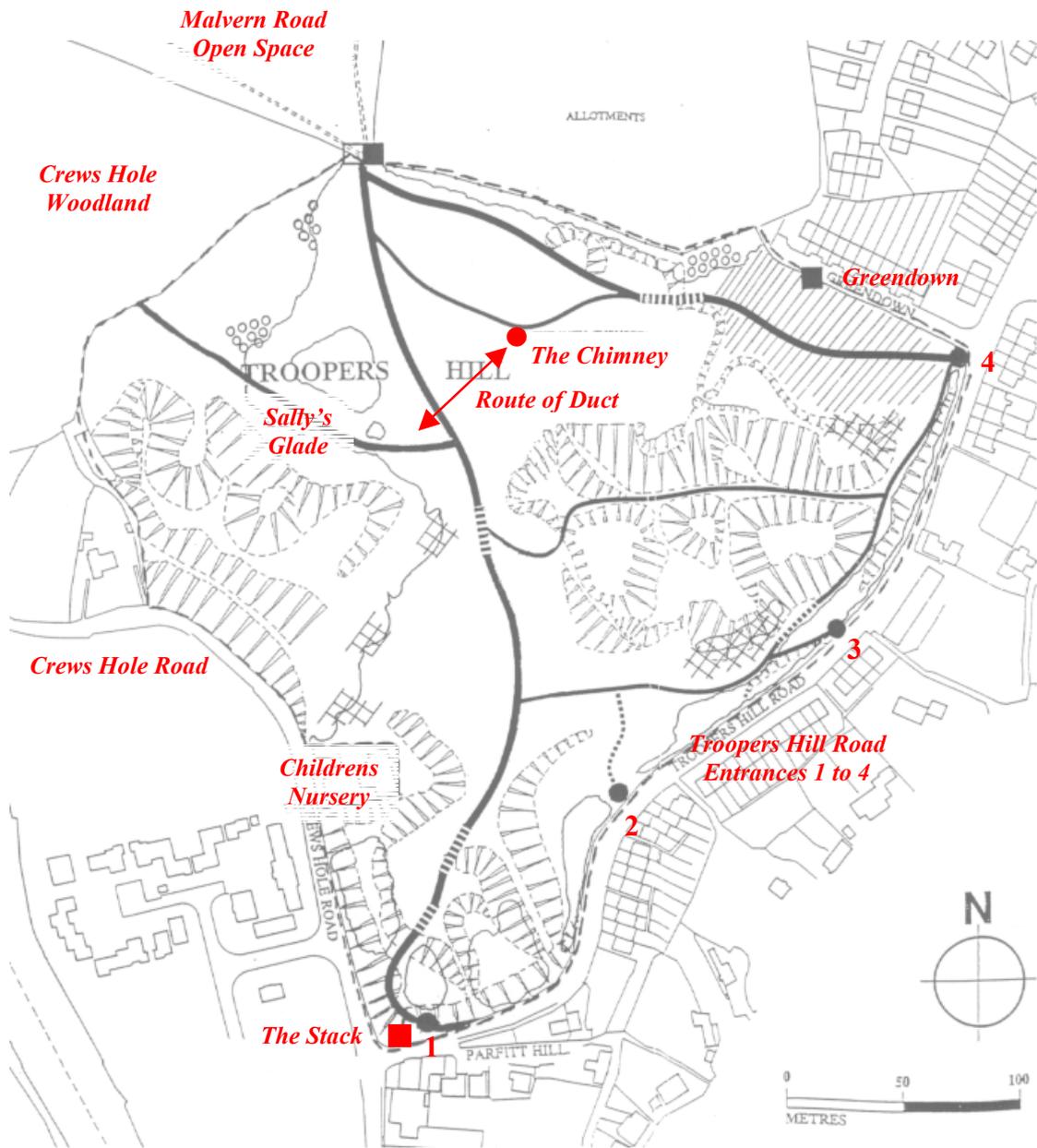
Central grid reference ST 628 371. The site lies in Eastern Bristol and overlooks the River Avon to the south-west. It is part of a cluster of important wildlife sites which includes Dundridge Wood, Crews Hole, Eastwood Farm and the River Avon itself. Together these sites form a wildlife corridor linking the city to wildlife sites further east along the River Avon.



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

Bristol City Council.

4.1.4 Site Plan



#### **4.1.5 Conservation Status**

The site is a Local Nature Reserve (designated in 1995) and a Site of Nature Conservation Importance in recognition of its importance for wildlife in the context of the former county of Avon. The chimney and the line of an associated tunnel are Grade 2 listed structures.

#### **4.1.7 Area**

8.4 hectares (21 acres).

#### **4.1.8 Nature of Legal Interest**

The freehold of the site was purchased by Bristol City Council in 1956 from a private owner.

#### **4.2 Access**

4.2.1 The access policy at Troopers Hill is to allow free pedestrian access to the whole site and to encourage quiet enjoyment of the site and its wildlife.

4.2.2 Access to the site is open and unrestricted to pedestrians. The main access points to the site are from Troopers Hill Road, the corner of Troopers Hill Road and Greendown, and at the north-western corner of the site. Two definitive footpaths cross the site and there are a number of informal footpaths. A surfaced path circles the hill top and there are several other well used routes across the site.

#### **4.3 History**

4.3.1 The name Troopers Hill may have come from the civil war when the Parliamentarians are believed to have camped on the hill before taking Bristol from the Royalists in September 1646. Another suggestion is that it may have been a corruption of the name Trubody. A 1610 map of Kingswood names the hill as Harris Hill, the name Troopers Hill was used on the 1845 tithe map.

4.3.2 Industrial activity was intensive on and around Troopers Hill in the nineteenth century and in the early years of the twentieth century and has had a profound influence on the appearance and ecology of the site.

4.3.3 Quarrying for pennant sandstone to supply building material is thought to have started during the middle ages and continued sporadically into the twentieth century. These quarries are responsible for features such as the gully which runs through the hill and stone terracing on the southern edge of the site. Coal, fireclay and iron have also been mined. In the nineteenth century tramways were constructed in order to export the quarried stone from the site.

### **4.3 History (continued)**

4.3.4 There are several deep coalmines, with entrances off the site, running under Troopers Hill. Small scale open cast coal mining was attempted on the hill in the late 1890s and early 1900s but was unsuccessful. Material which appears to be coal spoil from this mining is present in the centre of the site but J Cornwell in his Bristol Coalmining Archives (1989) considers this material to be a result of the outcropping of natural coal seams.

4.3.5 The most prominent legacy of this industrial past on Troopers Hill is the chimney. This was used for venting gases from works located at the bottom of Troopers Hill and is shown on the 1890 Ordnance Survey map. The date of construction is not known and nor is the nature of the original works for which it was built. It could have been constructed for the eighteenth century copper smelting works in the Crews Hole valley, which provided copper for Bristol's brass industry. A chemical plant, pottery factory and fireclay works have also been suggested. It is believed to have been taken into use by Butlers Tar Works after the original works closed and is known to have been disused by 1969. A tunnel or duct once linked the chimney with this works and its line can be made out in places as a slight depression in the ground.



*The Stack*

4.3.6 The structure at the foot of the hill 'the stack' is believed to have been associated with the coalmining in the area. The black blocks used in its construction are made from slag from copper smelting and are found in walls throughout the area.

4.3.7 The site has remained as open land throughout its history and some agricultural land use probably coexisted throughout with the industrial activities. In the nineteenth century donkeys are known to have been kept on the hill and it was known locally as Donkey Island.

4.3.8 No management work is known to have been carried out between the 1930s and 1991.

4.3.9 Conservation management commenced in 1991 when a series of capital works was implemented. The primary objective of these works was to prevent and reverse damage caused by erosion. The main measures undertaken were resurfacing of existing main paths; provision of a perimeter fence to prevent access by cars and motorbikes; and restoration of areas of erosion through temporary fencing and reseedling. In 1992 Landmark Environmental Consultants drew up a Management Plan on behalf of Bristol Development Corporation, who at the time were the planning authority for the area.

### **4.3 History (continued)**

- 4.3.10 Subsequent to the production of that management plan two interpretative boards were installed and there was a litter removal day involving local people. Footpath maintenance and improvement has been carried out. A biennial programme of photographic and vegetation monitoring, which has concentrated on the distribution of heath species on the site, was commenced in 1994 and continues. Following recommendations made in these reports small scale scrub removal has been undertaken. An annual hay cut has been taken from a small area of tall grassland in the north-eastern corner of the site.
- 4.3.11 Natural events have also had an influence on the ecology of Troopers Hill in recent years. In 1995 dry summer weather allowed a serious grass fire to sweep across the hill, with significant short-term effects on the vegetation. Long-term effects of the fire have been largely beneficial, in controlling scrub encroachment and regenerating areas of heath and grassland. Heavy rainfall in the summer of 1997 led to a flood which washed away sections of footpath, necessitating their repair.

### **4.4 Physical**

- 4.4.1 The highest point on Troopers Hill is 254 feet above sea level. The Hill is made up of pennant sandstone interbedded with small seams of mudstones, fireclays and coal. In places the coal seams outcrop on the surface of the hill. These rocks have weathered to produce thin free-draining acidic soils.
- 4.4.2 Much of the site has developed extremely thin and impoverished soils. The site as a whole is very exposed but gullies and depressions on the site give extremely sheltered conditions in places.

### **4.5 Flora**

- 4.5.1 The most extensive vegetation type on the hill is acidic grassland. Frequent grasses here include common bent (*Agrostis canina*), sheep's fescue (*Festuca ovina*) red fescue (*Festuca rubra*) and wavy hair-grass (*Deschampsia flexuosa*). Frequent herbs in these areas include sheep's sorrel (*Rumex acetosella*), mouse-ear hawkweed (*Pilosella officinalis*) and buckshorn plantain (*Plantago coronopus*).
- 4.5.2 Around rock outcrops and, where erosion has occurred the sward is thinner and more broken mosses (including *Polytrichum* spp) and various *Cladonia* lichens are frequent and higher plant species present include early hair-grass (*Aira praecox*), thyme-leaved sandwort (*Arenaria serpyllifolia*) and small mouse-ear chickweed (*Cerastium semidecandrum*). In several areas scattered plants of ling (*Calluna vulgaris*) and bell heather (*Erica cinerea*) are found in this grassland sward and in places their growth becomes dense enough to form heathland.

## 4.5 Flora (continued)

- 4.5.3 In a few areas where the soil is deeper or has been enriched taller grassland is present. This taller grassland is dominated by cocksfoot (*Dactylis glomerata*) and supports a variety of herbs including black knapweed (*Centaurea nigra*) and meadow vetchling (*Lathyrus pratensis*).



*Broom*

- 4.5.4 Light scrub is scattered across the site and is especially frequent along the west facing slope of the hill. This light scrub is dominated by broom (*Cytisus scoparius*) and bramble (*Rubus fruticosus* agg). Herbaceous plants associated with this scrub include wood sage (*Teucrium scorodonium*), golden rod (*Solidago virgaurea*), imperforate St John's wort (*Hypericum maculatum*) and wild carrot (*Daucus carota*).

- 4.5.4 Dense scrub grows along the south-east facing slope of the hill along Troopers Hill Road and also along the western edge of the site where it forms the boundary of Crew's Hole woodland. This scrub is dominated by hawthorn (*Crataegus monogyna*) but along the western edge of the site in particular it also includes silver birch (*Betula pendula*), goat willow (*Salix caprea*) and oak species (*Quercus robur*, *Quercus petraea* and the introduced *Quercus cerris*). Two patches of the introduced Japanese knotweed (*Reynoutria japonica*) are present on the edge of the scrub and this has spread extensively through the adjacent woodland.

## 4.6 Fauna

- 4.6.1 The fauna of the site has been less well surveyed than the flora has. Casual records of birds present have been made during other surveys. Few bird species have been seen on the grassland areas, although meadow pipits are often present outside the breeding season and kestrel often hunt over the site. The scrub areas support a larger range of birds. Species regularly present during the summer include willow warbler, whitethroat, long-tailed tit, greenfinch and bullfinch. A nightingale was heard singing for a few days during the spring of 1998.
- 4.6.2 Other species of vertebrate recorded on the site include badger (an active sett on the slope above Troopers Hill Road) and common lizard and slow worm. The level of badger activity on the site appears to have increased since 1998.

#### **4.6 Fauna (continued)**

- 4.6.1 David Gibbs' survey of 2000, supported by his own data from preceding years, demonstrated the great importance of Troopers Hill for all types of invertebrates and calls for further investigations and research to be carried out.
- 4.6.2 A total of 137 invertebrate species were identified in 2000 (see Appendix V for full list), which is considered to be surprisingly high for such a small isolated site. Of these 13 proved to be of Nationally Scarce or Red Data Book status. Red Data Book Categories are RDB1 - endangered, RDB2 - vulnerable and RDB3 – rare, while Nationally Scarce species are also sub divided into categories Na & Nb. The table over the page lists these 13 species and gives a brief description, of most interest is perhaps *Nomada guttulata* which is classified as RDB1 and is therefore considered to be in danger of extinction from Britain.



- 4.6.3 Many of the bees mentioned are mining bees and there are also other more common mining bees on the hill. These can be seen on sunny days in Spring and summer in the areas of bare earth on Troopers Hill, these areas of erosion (see above photo) therefore form one of the most important habitats on the hill.
- 4.6.4 Many of the rarer bees are also parasites of other bees, cleptoparasites are bees that invade other bee's nests so that their young can feed on the food provided by the host bees for their own young. Brood parasites are similar but also eat the host's eggs or larvae. Both therefore act in a similar way to cuckoos and hence many are referred to as cuckoo-bees. Parasites of this type always have to exist in smaller numbers than their hosts so it is not surprising that these feature in this list of scarce invertebrates.

#### 4.6 Fauna (continued)

##### 4.6.5 Table of Nationally Scarce and RDB Invertebrates Recorded in 2000

<i>Species</i>	<i>Description</i>	<i>Status</i>
Cryptocephalus aureolus	Beautiful brilliant green leaf-beetle, likes open grassy places.	Nb
Philanthus triangulum	The bee-wolf is a large, spectacular black and yellow wasp, it frequents warm sunny areas on light, well drained soil where it digs nests up to 1m in length.	RDB2
Andrena humilis	A medium sized brown mining bee lacking conspicuous features. Nests in hard sand or stiff soil in sunny locations and a strong colony was established on Troopers Hill in 2000.	Nb
Andrena labiata	A fairly small mining bee easily recognised by the broad red band across the abdomen. Nests in sandy banks exposed to the sun, flying from late April to late June.	Na
Sphecodes crassus	A small black and red cuckoo-bee having a requirement for area of bare soil where they can dig their nests. It is a cleptoparasite of the mining bee genus Lasioglossum.	Nb
Sphecodes reticulatus	Another black and red cuckoo-bee and is again a cleptoparasite of mining bees, although the specific hosts are not known, this species is very scarce.	Na
Nomada fucata	This is a black, yellow and red nomad bee which has recently recovered in numbers. This is a cleptoparasite of the mining bee Andrena flavipes and a very strong colony was seen on Troopers Hill in 2000.	Na
Nomada guttulata	A small black and red nomad-bee with small yellow spots, this has always been a great rarity in Britain and is now considered to be endangered. Prior to being found on Troopers Hill it had never been recorded in Somerset or Gloucestershire and in the west all records were close to the south coast. Usually found on sandy heathland, coastal cliffs and gravel pits, it is a cleptoparasite of the mining bee Andrea labitata (see above).	RDB1
Nomada integra	A largely black and dark red nomad bee without any yellow spots, this one is a cleptoparasite of Andrena humilis.	Na
Nomada. lathburiana	A black, red and yellow wasp-mimicking nomad bee which is a brood parasite of the mining bee Andrena cineraria which is abundant at Troopers Hill.	RDB3
Chorisops nagatomii	A small metallic green and yellow soldier fly.	N
Bombylius discolor	The dotted beefly is a robust furry insect with conspicuous spots on the wings. This fly is a cleptoparasite of mining bees, its host on Troopers Hill is probably Andrena flavipes. Troopers Hill holds one of the strongest colonies of this species in the region.	Nb
Micropeza lateralis	A long, slender stilt-legged fly.	N

#### **4.6 Fauna (continued)**

- 4.6.6 Prior to David Gibbs' survey, insect recording had concentrated on the site's butterflies. Grayling (*Hipparchia semele*) was first seen on the site in 1985 and was recorded in most subsequent years until 1994 but unfortunately has not been seen since. Other species of grassland butterfly which have been recorded include common blue (*Polyommatus icarus*), small copper (*Lycaenophlaeas*) and small heath (*Coenonymphapamphilus*). The only other group of insects for which there were reasonably complete records were grasshoppers and bush-crickets. The grasshoppers present include a large population of mottled grasshopper (*Myreomattix maculatus*).

#### **4.7 Biological Evaluation**

- 4.7.1 The site supports the only substantial area of acidic grassland and heath in Bristol and the best developed surviving example in the former County of Avon. Since acidic soils are uncommon in the area 25 of the plant species recorded here are included in the list of Notable Plant Species in the former County of Avon, although they may be much more common in other parts of the country where acidic soils are frequent.

- 4.7.2 These species are:

Common bent	<i>Agrostis canina</i>
Silvery hair-grass	<i>Aira caryophyllea</i>
Early hair-grass	<i>Airapraccox</i>
Thyme-leaved sandwort	<i>Arenaria serpyllifolia</i> ssp <i>leptoclados</i>
Ling	<i>Calluna vulgaris</i>
Small mouse-ear chickweed	<i>Cerastium semidecandrum</i>
Heath grass	<i>Danthonia decumbens</i>
Wavy hair-grass	<i>Deschamp staflexuosa</i>
Bell heather	<i>Erica cinerea</i>
Blide fleabane	<i>Erigeron acer</i>
Fennel	<i>Foeniculum vulgare</i> (probabaly introduced)
Heath bedstraw	<i>Galium saxatile</i>
Soft grass	<i>Holcus mollis</i>
Imperforate St John's wort	<i>Hypericum maculatwn</i>
Bitter vetch	<i>Lathyrus linifoltus</i>
Narrow-leaved everlasting pea	<i>Lathyrus sylvestris</i>
Heath woodrush	<i>Luzula multiflora</i>
Buckshom plantain	<i>Plantago coronopus</i>
Sessile oak	<i>Quercuspetraea</i>
Sheep's sorrel	<i>Rumex acetosella</i>
Golden rod	<i>Solidago virgaurea</i>
Least trefoil	<i>Trifolium micranthum</i>
Common corn salad	<i>Valertanella locusta</i>
Squirrel's tail fescue	<i>Vulpia bromoides</i>
Rats tail fescue	<i>Vulpia myuros</i>

#### **4.7 Biological Evaluation (continued)**

- 4.7.3 In addition White's Flora of Bristol (1912) lists several other notable plant species which have not been recorded at the site in recent years. These include knotted clover (*Trifolium striatum*), birdsfoot (*Ornithopus perpusittus*) and sand spurrey (*Spergularia rubra*).
- 4.7.4 Given the small size and isolation of this site its conservation significance for invertebrates is really quite extraordinary. The only sites so far investigated which have proved to be better than Troopers Hill are very large more diverse sites, often abutting other good areas in the wider countryside. If we had sufficient information to score all the species according to their rarity Troopers Hill would probably come out as the most important site of its type in the Bristol region. This is not only because of the large number local rarities including some new county records but the presence of an endangered species, *Nomada guttulata*, massively increases its importance. Not even the spectacularly productive Dolebury Warren has any species so rare. Records from previous years only serve to confirm these conclusions.
- 4.7.5 The colony of mottled grasshopper on Troopers Hill is probably the largest in Bristol and this is a County Notable Species.
- 4.7.6 Badgers are protected by law and are scarce in Bristol.
- 4.7.7 The majority of the notable species found on the site are dependent on acidic grassland. Several of the plant species require a broken sward with bare soil or rock and this bare ground is also extremely valuable for solitary bee species, bee flies, mottled grasshopper and other insects. The mixture of scrub, heath, both tall and short grassland and bare ground, with a wide variety of aspects and degrees of shelter, together with a generally south facing aspect, means that Troopers Hill is very valuable for invertebrates as a whole. The scrub supports fewer notable plant species but it is likely that further recording would reveal additional invertebrate interest associated with the scrub. Troopers Hill also benefited from becoming enclosed by housing at a time before widespread pesticide use so isolating the fauna from the effects of industrial farming.
- 4.7.8 The site is one of the most important for nature conservation in Bristol and makes a large contribution to the biodiversity of the city. It is also of strategic importance as part of a network of sites forming a wildlife corridor along the River Avon.

## **4.8 Public Use**

4.8.1 Troopers Hill is very well used for informal recreation. Many people walk, and walk dogs, on the hill both on the formal paths and elsewhere on the site. Cycling is discouraged but does take place. It is a popular informal play area for children.

4.8.2 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. The response to the formation of the Friends of Troopers Hill has also been encouraging.



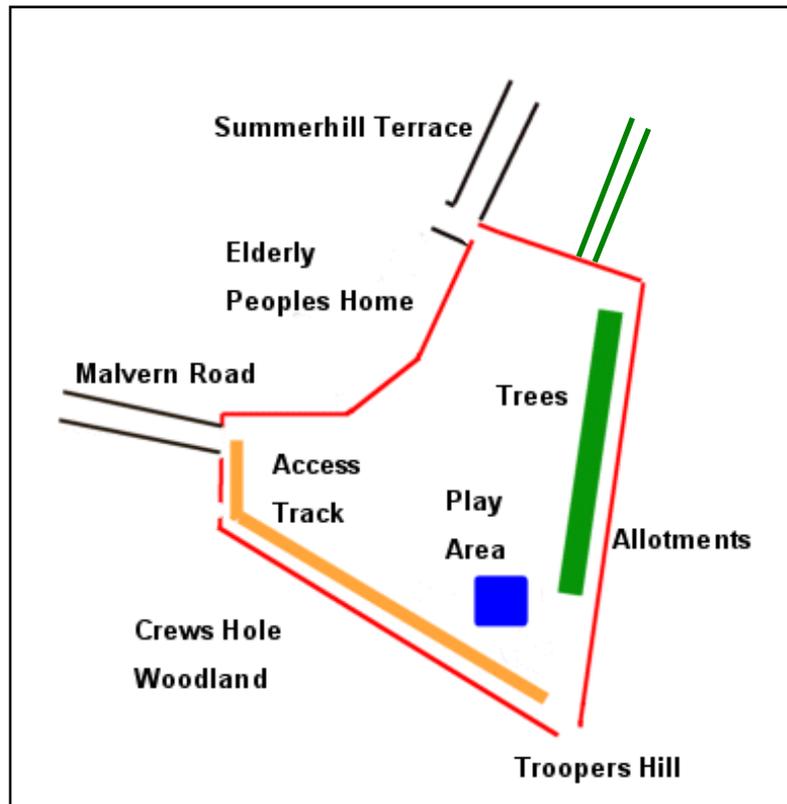
*Dawn Chorus Walk 24 April 2004*

4.8.3 There are two interpretative sign boards on the hill, however these are out of date and one has been vandalised. In 1995 Bristol City Council published a site leaflet, again this is now out of date. There has been some minor vandalism on the site and littering and dog fouling both occur, in May 2004 one of the two seats on the hill was destroyed by fire.

4.8.4 The Rangers Service organised a series of guided walks across the site during the summer of 1998, however no further events took place until the start of the Wildspace Project in 2003. The Local Nature Reserve Officer organised a nature walk in summer 2003 and a dawn chorus walk in April 2004, both of which were well attended. An informal history meeting organised by the Friends of Troopers Hill also attracted a large turnout. Further events and talks are planned to encourage public use and appreciation of the site.

## **5.0 Malvern Road Open Space**

- 5.1 Malvern Road Open Space is an open area of grassland to the north west of Troopers Hill Local Nature Reserve. Access to Troopers Hill for the majority of the population of St George is achieved through crossing this area on foot.
- 5.2 Site Plan



- 5.3 Malvern Road Open Space is the area bounded in red on the above plan, access is from Summerhill Terrace or Malvern Road. At Summerhill Terrace concrete bollards prevent access by motorcars but not motorcycles. At Malvern Road there is a contractor's access gate leading to the access track and a further access gate onto the Local Nature Reserve. Each side of the gate is a wooden fence with a gap to allow pedestrian access. The gate and fence are both in need of repair. At the south-west corner there is access to Crews Hole Woodland through a kissing gate and to the north there is a footpath which provides access to Summerhill Road (A431) at the historic milestone.
- 5.4 The play area is very dilapidated, with only a swing and a slide remaining.
- 5.5 Maintenance of the site over recent years has been restricted to grass mowing.
- 5.6 There are currently two dog bins, one near the entrance to Troopers Hill and one at the Summerhill Terrace entrance which is very seldom used.

## **6.0 Aims and Objectives**

### **6.1 Overall Objectives**

The aim of this Management and Action Plan is to ensure that Troopers Hill Local Nature Reserve is maintained as a nature reserve, of benefit to both *wildlife* and *people*.

### **6.2 Wildlife Objectives**

- To maintain and where possible enhance the quality and extent of acidic grassland and heath, including its associated bare earth, on the site.
- To maintain areas of scrub on the site, especially scrub such as broom, which is dependent on an acidic substrate.

### **6.3 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 involvement in the site, to encourage active involvement in the management of the site and increased appreciation of its wildlife and history.

### **6.4 Management Rationale for Wildlife**

#### **General**

- 6.4.1 Management of the wildlife on the site to achieve the above aims is not anticipated to require major intervention. It is anticipated that much of the required work can be carried out by volunteers at Friends of Troopers Hill Work Parties.
- 6.4.2 The management will for the most part consist of the control of existing plant species to encourage the spread of other naturally occurring species. No new planting will be carried out on the Nature Reserve (with the possible exception of a hedge to replace the Greendown fence).
- 6.4.3 Action will be taken for the eradication of Japanese Knotweed and any other invasive plant life or disease found to be present. The eradication of Japanese Knotweed will require the use of specialist contractors using an approved herbicide and repeated applications will be required over a number of years.

## **6.4 Management Rationale for Wildlife (continued)**

### **Grassland and Heath**

6.4.4 Troopers Hill is unusual in that on the whole its grassland has not required management in order to maintain its nature conservation interest. This is probably due to two factors:

- The soil is extremely infertile and free-draining and this prevents or inhibits the growth of rank grassland species and scrub.
- Trampling by members of the public favours the plant and insect species of short and sparse grassland for which the site is valuable.

6.4.5 A small area has more fertile soil and the grassland here has required an annual hay cut in order to prevent its being dominated by rank grasses and its botanical diversity declining. This will continue.

6.4.6 The photographic monitoring programme has revealed that most of the areas of heath on the site are stable or are increasing. Small scale scrub clearance has been recommended in a number of areas where heathland or grassland is being encroached upon. Where this has been carried out it has been successful in promoting a more extensive and more vigorous growth of heath species.

### **Scrub**

6.4.7 Some further scrub clearance to create more heathland will be carried out. When scrub clearance is carried out goat willow and silver birch will be retained since these species are of particular value for invertebrates.



*Broom and Silver Birch*

6.4.8 Management of scrub has not been carried out except where scrub has been removed from areas of heath. The fire of 1995 had a profound influence on scrub on parts of the hill. In places broom scrub has been replaced by bramble and bracken but in other places broom scrub is regenerating; elsewhere grassland or heath has regenerated on areas where scrub was burnt off. The fire had some beneficial effects but fires will be discouraged, although it is recognised that they are likely to occur in the future.

#### **6.4 Management Rationale for Wildlife (continued)**

- 6.4.9 Where areas of bramble are encroaching on broom scrub the bramble will be cleared, this is an activity particularly suited to volunteer work parties, rather than being carried out by contractors. The spread of bracken will also be controlled.
- 6.4.10 The scrub around the badger sett will be left unmanaged in order to avoid disturbance to these animals and any clearance in other areas will be carried outside the bird nesting season. Elsewhere, small areas of scrub will be cut on a rotation in order to promote new growth. This will provide habitat of value to birds and invertebrates.
- 6.4.11 In the area adjacent to Crews Hole Woodland the scrub has developed into immature woodland. Trees and scrub will be cleared from selected areas here to create new glades in accordance with the recommendations in the 2000 Invertebrate Survey.

#### **Monitoring and Survey**

- 6.4.12 It is important, especially in the absence of regular large-scale management, that features of ecological value on the site are monitored. The established programme of photographic vegetation monitoring will be continued. Funding will be sought for further ecological surveys, including regular butterfly monitoring and a botanical survey, and the use of the Reserve for academic research will be actively encouraged in order to establish the presence of notable species, their distribution on the site and their management needs.

#### **6.5 Management Rationale for People**

- 6.5.1 There are few conflicts between public use of the site and its nature conservation interest and trampling plays a, important role in maintaining short grassland. Areas of bare earth provide vital habitats for bees, for which the site is very important. However, maintenance of, and improvement to, the site's footpath network is required in order to control excessive erosion.
- 6.5.2 Access by cars or motorbikes or by large numbers of bicycles would have an adverse impact on the site's nature conservation importance. The fences on the perimeter of the site will be maintained so that such access is prevented.
- 6.5.3 Currently it is not possible to access the Nature Reserve by wheelchair and access with child buggies is difficult. Gates will be provided that allow such access and the paths across Malvern Rd Open Space and to the chimney will be improved. New benches will be installed to enhance people's enjoyment of the site. It is also intended to improve access from Crews Hole Road.
- 6.5.4 Litter is a problem on the site, especially around footpaths. It is unsightly and suppresses the growth of vegetation and will be regularly removed.

**6.5 Management Rationale for People (continued)**

- 6.5.5 Dog mess is a constant source of complaint and is also a health hazard. Additional dog bins will be installed and action taken to encourage their use.
- 6.5.6 Greater awareness of the site's ecological importance and history amongst the public can increase their enjoyment of the site and restrict any potential areas of conflict over the use or management of the site. The notice boards at the site will be replaced with new notice boards, additional interpretation will be provided on the site and the information leaflet will be revised and re-published.
- 6.5.7 Educational projects involving schools and youth groups will also be encouraged and the Friends of Troopers Hill together with the Local Nature Reserves Officer will organise talks and walks to enhance public knowledge and awareness of the site.



## **7.0 Schedules of Work to be Carried Out**

- 7.1 The following Schedules and maps A to G set out the list of tasks that it is intended will be carried out over the next five years.
- 7.2 Schedule H summarises all the tasks set out in Schedules A to G and includes a budget costing and the proposed source of funding.
- 7.3 Funding and carrying out these tasks is the joint responsibility of Bristol Parks and the Friends of Troopers Hill as signatories to this plan. Each task will however have a lead backer and these are also indicated in Schedule H.
- 7.4 It is acknowledged that this is an ambitious plan, especially since the Friends of Troopers Hill is a newly formed group. However, the plan is intended to be flexible and it is anticipated that while it will be necessary to postpone some tasks to later years, particular funding opportunities may allow other tasks to be completed at an earlier date.
- 7.5 The plan will be reviewed each year with the views of local people, members of the Friends of Troopers Hill and other interested bodies being taken into account. Please contact The Friends of Troopers Hill 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.
- 7.6 The plan will be considered a success if it achieves its primary aims, regardless of the progress in completing the individual tasks set out here.

## **Schedule A – Ongoing Wildlife Tasks**

- A1 Eradication of Japanese Knotweed – Treatment required twice per year

*This work is to be carried out by specialist contractors in accordance with Bristol City Council's policy to eradicate this pernicious weed. There are large areas of knotweed in the woodland on the western side of the Nature Reserve.*

- A2 Hay Cut – Annually in late summer

*The area of tall grassland in the north-eastern corner of the site is to be cut annually and the cuttings removed as hay. This area has more fertile soil than the remainder of the reserve and if not cut will become dominated by rank grasses and its biodiversity will decline.*

- A3 Clearance of Bramble from Areas of Broom and Heather – All year

*Bramble and hawthorn scrub are to be removed from the areas of broom, with the three areas shown on the map being the focus for the first year. Other areas will also be tackled in later years in accordance with recommendations from the biennial monitoring (see A7).*

*Areas of bramble where birds might nest will only be cut from October to early March.*

- A4 Clearance of Scrub from Heathland

*Some small scale scrub clearance/control will be carried out where this is encroaching on areas of heathland, again in accordance with the recommendations from the biennial monitoring (see A7). When scrub clearance is carried out goat willow and silver birch will be retained since these species are of particular value for invertebrates.*

- A5 Clear Small Areas of Scrub – December/January

*Areas of scrub as shown on the map are to be cut down in a five yearly rotation in order to promote young scrub growth. No work will be carried out in the vicinity of badger setts.*

## **Schedule A – Ongoing Wildlife Tasks (Continued)**

A6 Reduce Area of Bracken – June and August

*The area of bracken will be reduced by cutting at June and August work parties. Work will concentrate on a 5m wide strip at the edge of the area and 3m each side of the informal path. Cutting at this time of year weakens the rhizomes since the energy used in growing is not then replaced by sugars produced by mature fronds. This method of treatment is accordance with BTCV recommendations.*

A7 Vegetation Photographic Monitoring – August in 2004, 2006 & 2008

*This programme of monitoring the site will be continued and the results used to measure the success of the management regime. Any actions recommended will be incorporated into the annual review of this plan.*

A8 Invertebrate Surveys and Butterfly Transects – April to September

*Further surveys are required to monitor the rare species found to be present at the time of the 2000 invertebrate survey and to confirm or otherwise the suspected loss of the Grayling Butterfly from the site. The results of these surveys will be used to help decide on the priorities for management of heath and scrub. Troopers Hill will be suggested to academic institutions and other bodies as a subject for research that could include these surveys. A butterfly transect will be carried during the summer of 2004 by a Bath University student.*

A9 Botanical Surveys – As appropriate for the species to be surveyed

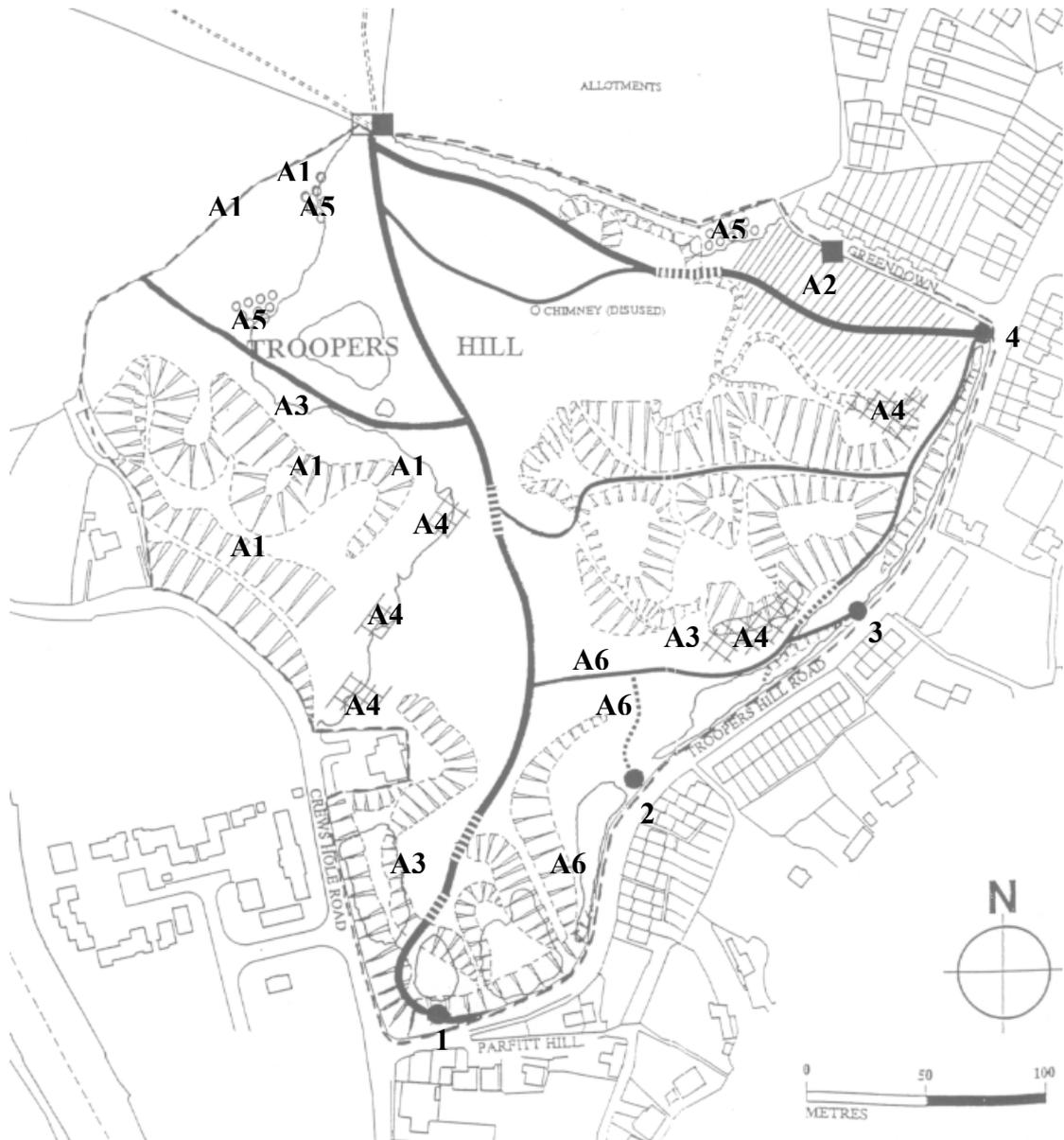
*Surveys of flora of all types will also be encouraged and again academic institutions and other bodies will be approached and the use of Troopers Hill suggested for research. A bryophyte survey was carried out in March 2004 by a specialist working with the Bristol and Regional Environmental Records Centre (BRERC).*

A10 Mowing of Grass, Malvern Road Open Space – As required in growing season.

*Consideration should be given to allowing certain areas of grass to grow and be cut for hay once or twice per year (see C15).*

**Map A – Ongoing Wildlife Tasks**

A10



## **Schedule B – Ongoing People Tasks**

- B1 Health and Safety Audit – Annually or as required.

*Bristol Parks will carry out Health and Safety Audits and risk assessments of the site at least once per year. 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. The Friends of Troopers Hill will receive copies of these audits and will report any circumstances brought to their attention that may affect the safety of the site.*

- B2 Maintenance of Definitive Footpath Surface – As required

*The two definitive footpaths were surfaced in 1991 as part of a series of capital works to prevent and reverse damage caused by erosion. The surface of these paths will be regularly inspected and maintained in an acceptable condition to encourage use of the site.*

- B3 Clear Back Vegetation from Footpaths – Twice per year (June, August)

*Substantial lengths of the paths are bounded by woodland and scrub including bramble and become impassable if this is not regularly cut back. Contracts will be placed for designated lengths of paths setting suitable standards for the width to be cleared.*

- B4 Cutting Vegetation from Footpaths – As required April to September

*Minor work cutting mainly brambles is required between contractor's visits and to informal paths not covered by the contracts. This work will be undertaken at work parties by Friends of Troopers Hill Volunteers.*

- B5 Maintenance of the Boundary Fence – As required

*The boundary fence to both Troopers Hill and Malvern Road Open Space needs to be maintained to prevent motorcycle access. Sections of the fence may require replacement where the posts have rotted.*

*A particular problem area is along Troopers Hill road where the fence has been damaged by the activity of badgers. This area will be reviewed and consideration given to the fence being repositioned or removed altogether.*

## **Schedule B – Ongoing People Tasks (Continued)**

**B6 Maintenance of Pedestrian Access Gates – As required**

*Kissing gates have been installed at the four pedestrian access points from Troopers Hill Road (probably in 1991) to allow pedestrian access while preventing use of the site by motorbikes. These will be regularly inspected and repaired as necessary to prevent future motorcycle use. In particular the gateposts need inspection for signs that they are rotting through at ground level.*

*At the access from the Open Space, a chicane was formed using fence posts and rails, this was broken down just before Christmas 2003 and temporary repairs were made. This gate could be removed completely once fencing is provided to the Summerhill Terrace access to the Open Space (see C10) and the fence at Malvern Rd is made secure (C11). The temporary arrangement will therefore be maintained until this is achieved.*

**B7 Maintenance of Dog Bins – Three times per week**

*This will be carried out as part of the contract covering all Bristol dog 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 Community Parks Manager and Friends of Troopers Hill to assess whether any additional bins are required. Two new bins will be installed in Year 1 (C4 & C6).*

**B8 Maintenance of Existing Seats – As required**

*The two existing seats will be regularly be inspected and repaired/replaced as necessary. Unfortunately one of these was destroyed by fire in May 2004.*

**B9 Inspection of Structures – Annual visual inspection**

*Two structures exist on the site, the well known chimney on top of the hill and the 'stack' at the corner of Troopers Hill Road and Crews Hole Road.*

*Extensive repointing of the chimney was carried out three years ago and it is not anticipated that any further work will be required in the period covered by this plan.*

*The stack has not however had any work carried on it for several years, except for the removal of loose stones from the top as an emergency measure in response to a call from a resident that a stone had fallen. These stones were apparently pushed into the chimney. Two sides of the base of the structure are obscured by brambles and cannot therefore be inspected in detail but appear to be in good condition.*

### **Schedule B – Ongoing People Tasks (Continued)**

B10 Maintenance of Structures – As required following surveys

*Work to the top of the stack will be required in Year 1 – see C7*

B11 Removal of Hazardous or Large Items of Rubbish – As required

*Friends of Troopers Hill will report any items to the Community Parks Manager.*

B12 Response to Incidents of Damage/Vandalism – As required

*Friends of Troopers Hill will report any damage to the Community Parks Manager.*

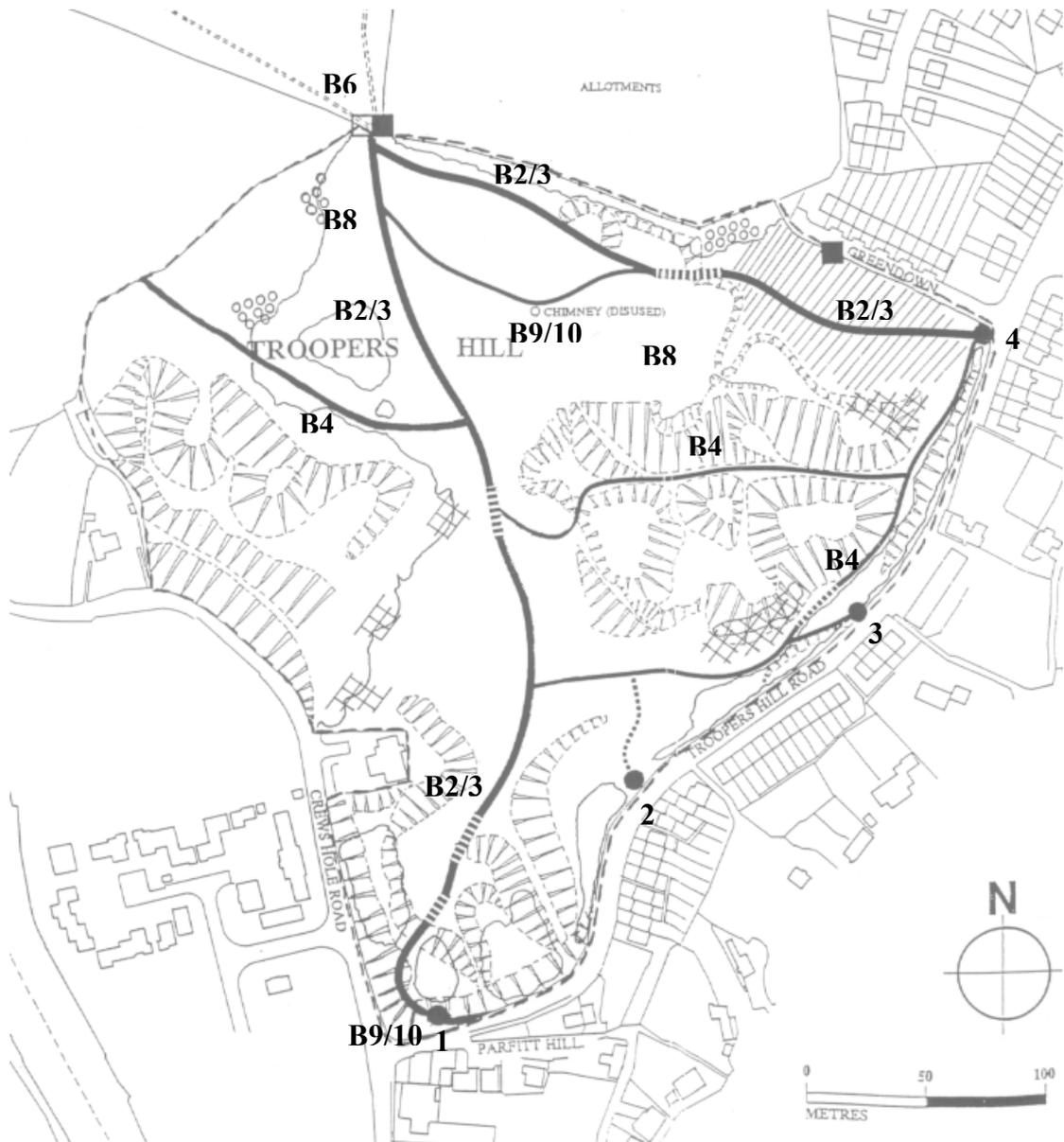
*Minor repairs will be carried out by work parties where possible. An example is the replacement of broken fence rails carried out along Green Down in December 2003.*

*A further risk assessment of the site will be undertaken if necessary after any major incidents.*

B13 Litter picking – Every 3 or 4 months

*A major ‘Spring Clean’ will be held each April in which local schools and youth groups will be invited to participate. The area covered may be extended into the adjacent Crews Hole Woodland if sufficient people participate.*

**Map B – Ongoing People Tasks**



## **Schedule C – Year 1 – April 2004 to March 2005**

### **Wildlife Tasks**

- C1 Establish Friends of Troopers Hill Tool Store – Funded by Awards for All

*Tools will be purchased to carry out the ongoing wildlife tasks detailed in Schedule A and other tasks as appropriate by volunteers at Work Parties.*

- C2 Health & Safety and 1st Aid Training/Equipment – Funded by Awards for All

*At least one first aider and one person with appropriate health and safety training is required on each Work Party.*

### **People Tasks**

- C3 Repairs to steps on Definitive Footpath

*A number of the steps to the footpath have been eroded over time such that the rise at individual steps presents a risk of injury, particularly to people descending the steps. In addition erosion is now being caused at the side of the steps due to people taking the easier route on the hill slope.*

- C4 Provision of Dog Bin at Greendown/Troopers Hill Road – Installed May 2004

*The presence of dog mess on the site was highlighted in the 2002/3 survey as the major source of concern to users of the site. As well as being unpleasant it presents a major health hazard, particularly to young children. A recent phenomenon is dog owners bagging the dog mess, presumably to clear paths but then throwing the plastic bags into the scrub.*

*This new dog bin will supplement the two existing dog bins at Malvern Road Open Space.*

- C5 Repositioning of Dog Bin from Summerhill Terrace

*The existing dog bin at the Summerhill Terrace entrance to Malvern Road Open Space is rarely used; consideration will be given to moving this to a location on the Reserve.*

- C6 Provision of Second Additional Dog Bin – location to be agreed

*Dog owners will be consulted as to the most beneficial location for this second new dog bin.*

## **Year 1 – April 2004 to March 2005 (Continued)**

### **People Tasks (Continued)**

C7 Inspection and Repairs to stack

*An inspection of the top section of the stack will be carried out and the necessary remedial works undertaken (see also B9).*

C8 Clear Steps from No 2 Entrance – Completed March 2004

*These steps had become overgrown with bracken and bramble to the extent to which they are almost impassable. An initial clearance of bracken and bramble was required prior to the instigation of the regular cutting (see B4).*

C9 Repairs to Broken Fence Rails

*A number of fence rails along Troopers Hill Road and Crews Hole Road are broken and require replacement.*

C10 Provision of fence at Summerhill Terrace

*The access to the Open Space from Summerhill Terrace is unfenced, with only a row of concrete bollards to prevent vehicle access. There is nothing to prevent motorcycle access on to the area and at Christmas 2003 motorcycles used this route to access Troopers Hill having broken down part of the pedestrian chicane.*

*Fencing will therefore be installed across the Summerhill Terrace entrance to prevent motorcycle access to the whole area, with a kissing gate to provide pedestrian access. Wheelchair access will be provided once the footpaths have been improved (see E3).*

C11 Repairs/improvement to Gate at Malvern Rd

*The vehicle access gate at the end of Malvern Rd is damaged and requires replacement. The new gate design will be in the form of a large kissing gate that will allow wheelchair access. The gate will then also close the existing gap and prevent motorcycle access.*

C12 Installation of 3 New Benches

*Provision of additional benches was one of the most requested improvements for the Reserve in the 2002/2003 survey.*

*It is proposed to install benches without backs (i.e. not seats). Benches to be vandal proof as far as possible, probably steel frames with recycled plastic slats. Locations will be agreed following consultation at Friends of Troopers Hill meetings. Siting of benches on the skyline will be avoided.*

## **Year 1 – April 2004 to March 2005 (Continued)**

### **People Tasks (Continued)**

C13 Installation of Signs at Entrances – Funded by Awards for All

*Signs will be installed at each entrance, suggested wording is shown below, the signs will also include contact details for Bristol Parks and the Friends of Troopers Hill with appropriate logos.*

**Welcome to**

**TROOPERS HILL**

Local Nature Reserve

Please protect and respect this reserve

- ◆ Enjoy the Views
- ◆ Enjoy the Wildlife
- ◆ Beware of Steep Slopes
- ◆ Please take your litter home
- ◆ Please clean up after your dog
- ◆ No motorcycles
- ◆ No horses

C14 Installation of 2 Notice Boards – Funded by Awards for All

*Vandal proof notice boards will be installed at the entrance from Malvern Road Open Space and the corner of Green Down / Troopers Hill Road. The existing vandalised sign board near the Open Space entrance will be removed at the same time.*

*The notice boards will be used to display posters publicising Friends of Troopers Hill events and information about the Reserve.*

## **Year 1 – April 2004 to March 2005 (Continued)**

### **People Tasks (Continued)**

#### C15 Consultation on the Future of Malvern Rd Open Space

*The existing play area on the Open Space is in a very run down state, the remainder of the area is mown grass, with a few trees. The only surfaced path is from the Malvern Road entrance to the entrance on to Troopers Hill. The 2002/2003 survey was not intended to cover this area but ‘the poor play area’ still rated as one the main things people disliked about the hill and as one of the reasons people did not visit the site.*

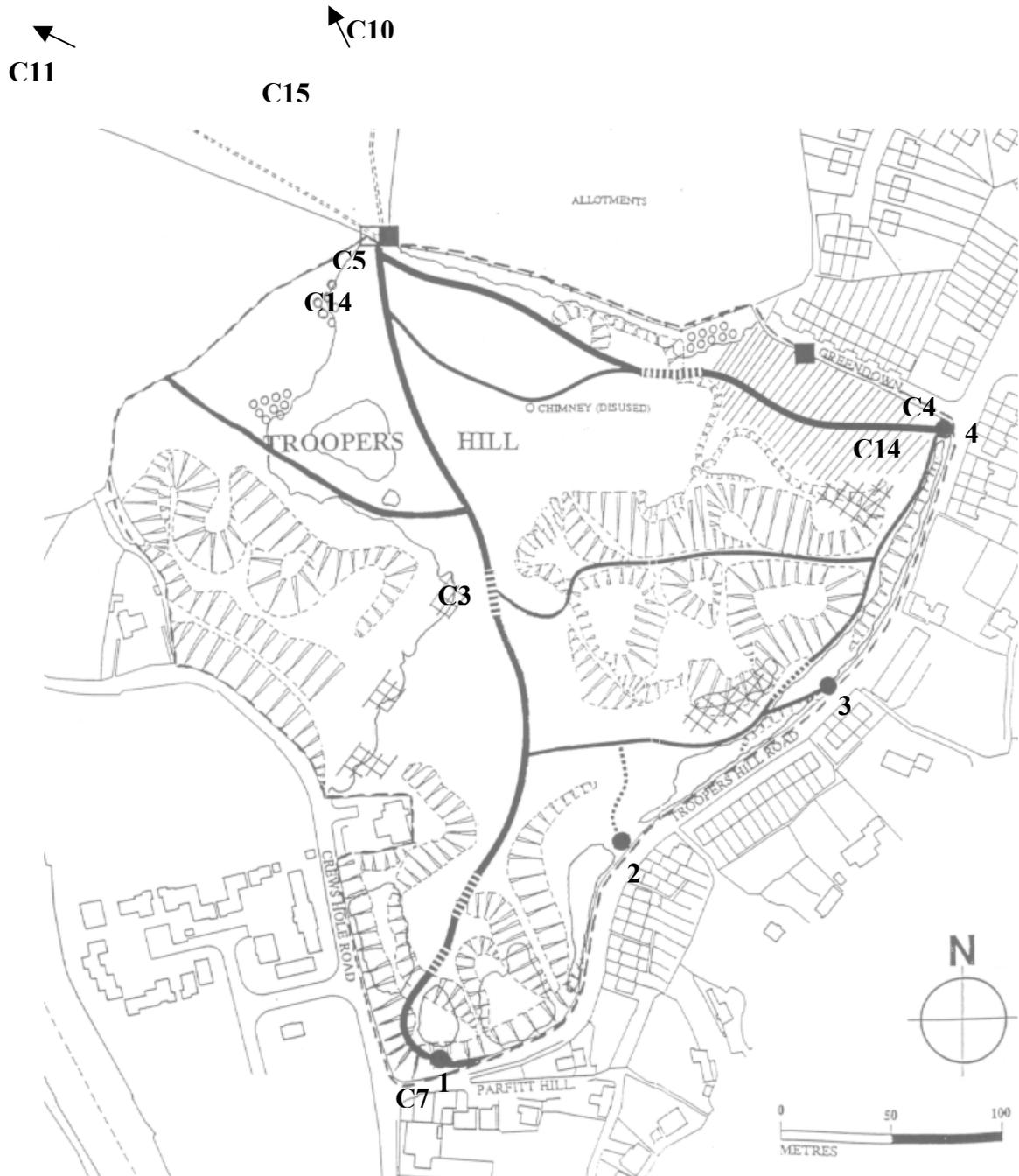
*It is proposed that the Friends of Troopers Hill should carry out a survey of residents surrounding the Open Space (including the adjacent elderly peoples home) to establish people’s views as to whether the play area should remain, and if so what type of play equipment should be provided and what age range it should be aimed at. Other questions would consider the provisions of paths, additional tree planting, wildflower/bulb planting, whether areas of grass should be hay cut and whether football pitches should be marked out.*

*The results of this survey will be incorporated into future revisions of this management plan.*

#### C16 ‘Interpretive History Project’ – Funded by English Nature’s Wildspace!

*Funding is in place for this project, it is anticipated that the end result will be the installation of some form of structure or art work to illustrate the history of the site.*

**Map C – Year 1 – April 2004 to March 2005**



## **Schedule D – Year 2 – April 2005 to March 2006**

### **Wildlife Tasks**

Ongoing Tasks Only – See Schedule A

### **People Tasks**

#### **D1 Site Interpretation**

*The two current information sign boards will be replaced with a single new board in the area of the chimney and/or alternative forms of interpretation elsewhere on the Reserve. Information will be given on the different types of wildlife: badgers, deer, butterflies, broom etc. This will supplement the history interpretation provided through the Year 1 History Project.*

*It is proposed that a local landscape artist will be involved in the design and that local schools could also become involved. Other sites in the area will be visited to gather ideas for consideration.*

#### **D2 Installation of wheelchair access from Open Space**

*Provided motorcycle access to the Open Space has been prevented (C10 & C11), it will be possible to completely remove the gate and fence between the Open Space and the Hill to allow unrestricted wheelchair access. Footpath improvements will also be carried in the area of the current gate and consideration will be given to providing disabled parking spaces.*

#### **D3 Installation of access for child buggies at Greendown**

*Provision of wheelchair access to the top of the Hill will also encourage use of the Hill by parents with child buggies. The path to the corner of Greendown and Troopers Hill Road although having several steps is suitable for use with these buggies, however, anyone doing so at present would have great difficulty in getting out onto the road.*

*The kissing gate at this entrance will therefore be modified to allow easier access, while still preventing motorcycle access.*

## **Year 2 – April 2005 to March 2006 (Continued)**

### **People Tasks (Continued)**

**D4 Improve area around seats and benches**

*The area around the existing two seats is becoming very eroded, to the point where the seats are now too high above the ground.*

*Two options are being considered, either creating a stoned area around the benches or repositioning the seats to allow the existing areas to recover. The bench destroyed in May 2004 may therefore be replaced in a different location.*

**D5 Repairs to existing steps on informal paths**

*The steps will be inspected in the Spring and repairs carried out as necessary to top up the steps where they have eroded and replace rotted timber.*

**D6 Clear area around Stack**

*The area around the stack requires clearing to allow it to be surveyed, this area will then require tidying and possibly fencing.*

**D7 Paths Through Woodland**

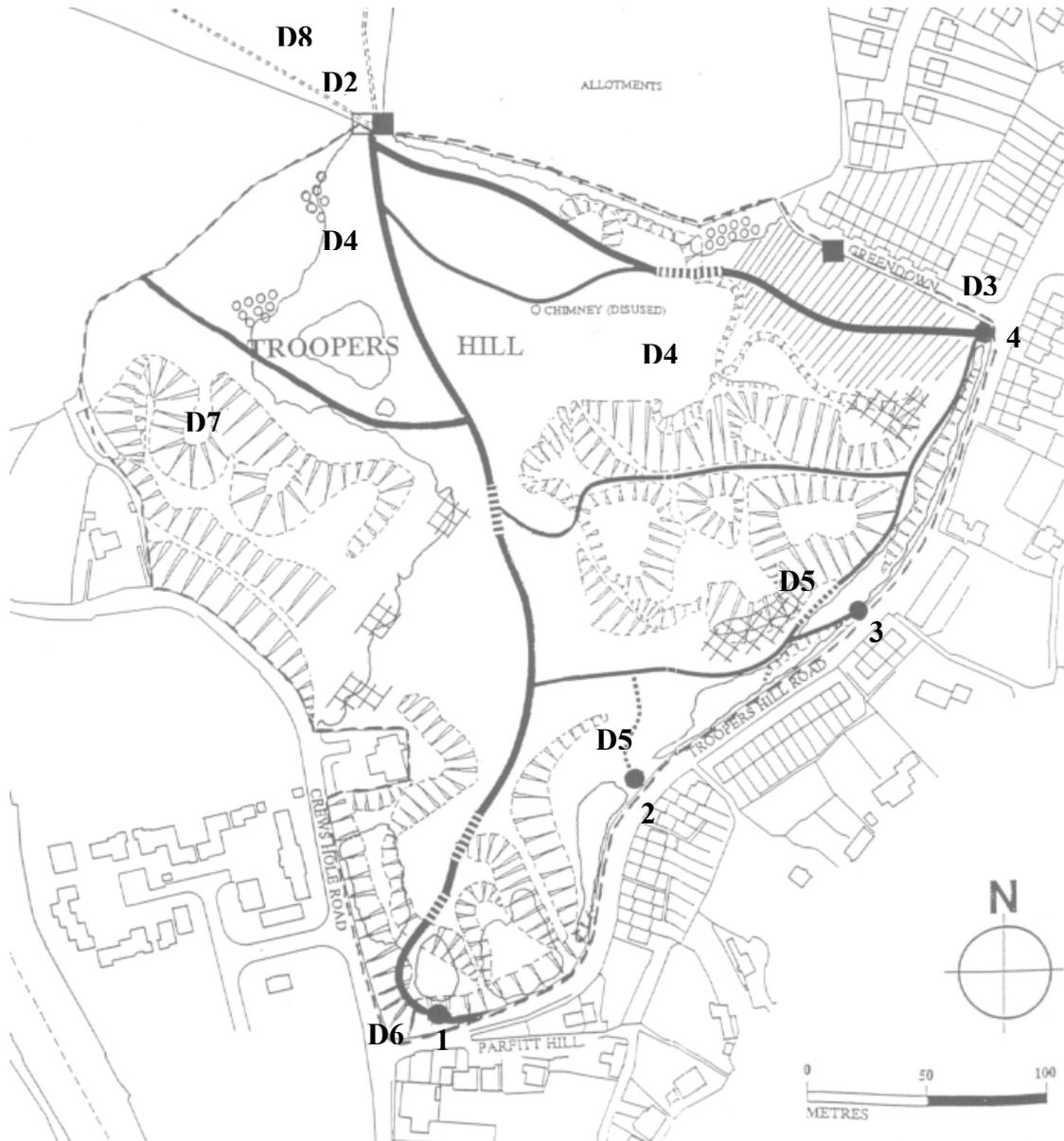
*New paths will be cut to improve access to the woodland area on the western side of the Nature Reserve and to link to paths in Crews Hole Woodland. Paths through this area are shown on older plans of the site.*

*This work will be carried out in the winter to avoid disturbing nesting birds.*

**D8 Provision of New Play Area, Malvern Road Open Space**

*Depending on the results of the consultation (see C15) the Friends of Troopers Hill will apply for grant money to install a new play area.*

**Map D – Year 2 – April 2005 to March 2006**



## **Schedule E – Year 3 – April 2006 to March 2007**

### **Wildlife Tasks**

- E1 Tree/Wildflower planting, Malvern Rd Open Space

*Depending on the results of the consultation (see C15) additional trees and/or wildflowers will be planted in Malvern road Open space.*

### **People Tasks**

- E2 Consultation on Improvements at Entrances to Troopers Hill Road

*At all these entrances the steps lead directly on to the road, presenting a danger, particularly to children. There is no pavement. Discussions will be held with the Highways Dept to find ways of improving the safety, possibly by installing wider verges with new kerbs. The entrance nearest to Crews Hole Road is of particular concern. Due to the need to agree any works with the Highways Dept. it is anticipated that any work agreed will be carried out in year 4.*

- E3 New Path and Wheelchair access from Summerhill Terrace

*To further improve access to the Hill for wheelchair users and parents with child buggies a surfaced path is proposed, together with wheelchair access in the new fence to Summerhill Terrace, (see A17).*

*The route of the path will depend the outcome of the consultation (see C15).*

- E4 Installation of Interpretation Near Specific Features

*Further interpretation (see also D1) will be installed to highlight specific features such as the chimney and the stack and to give details of their history.*

- E5 Provision of Further Benches

*Further benches will be provided, numbers and locations to be agreed following reactions from the public to those installed in Year 1 (see C12). Numbers will be limited to avoid spoiling the natural appearance of the site.*

- E6 Provision of Seats in Malvern Rd Open Space

*Seats to be provided near the play area, the existing two seats from the Nature Reserve may be used, these would then be replaced with benches.*

**Year 3 – April 2006 to March 2007(Continued)**

**People Tasks (Continued)**

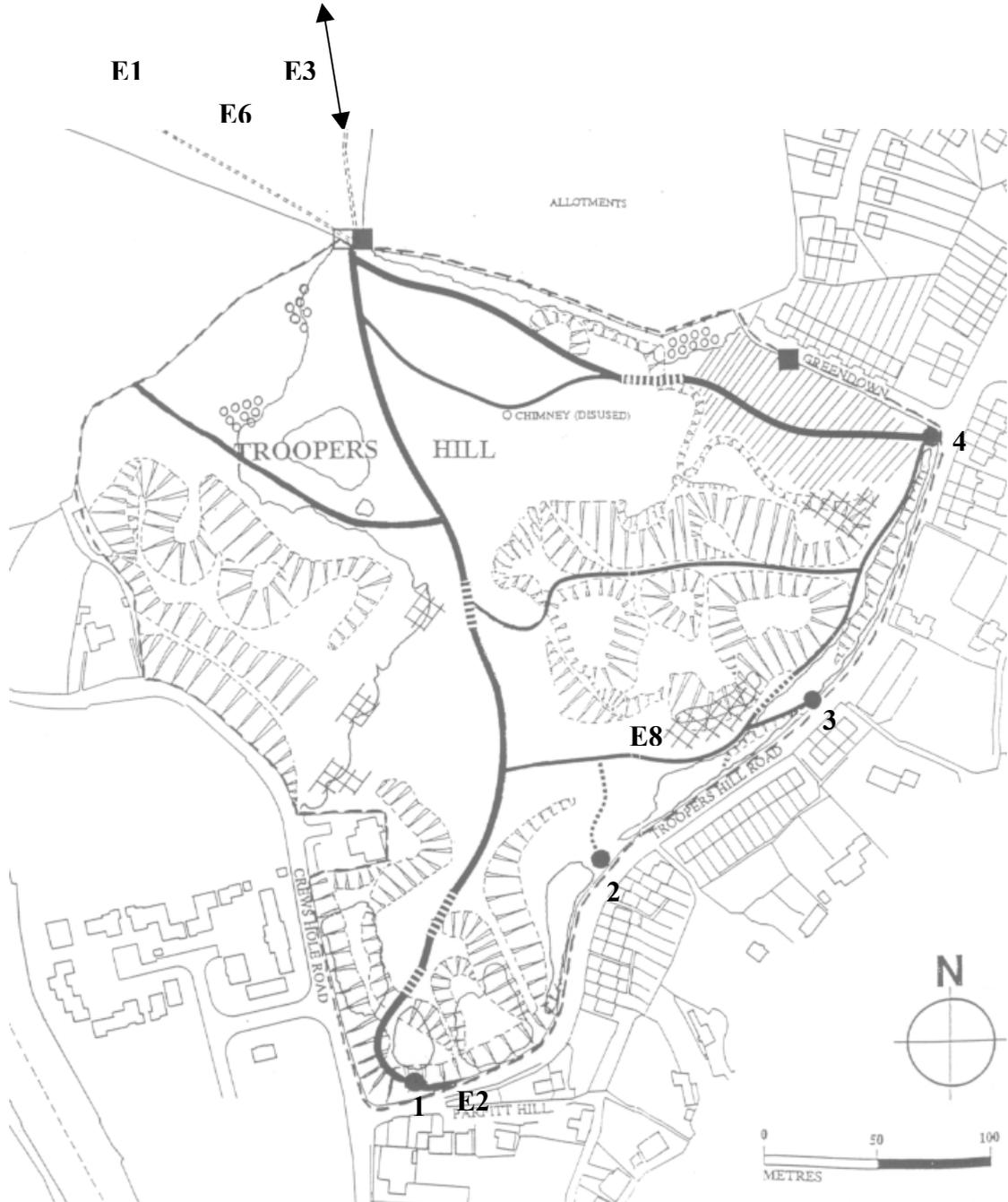
E7 Install Direction Signs

*Pedestrian direction signs will be provided from the A431 and the Avon Trail/Crews Hole Road to highlight the existence of the Hill. Signs on the highway will be of the brown tourist sign type with appropriate symbols.*

E8 Selective improvements to informal paths

*Where the informal paths are particularly muddy or narrow, improvements will be made.*

**Map E – Year 3 – April 2006 to March 2007**



## **Schedule F – Year 4 – April 2007 to March 2008**

### **Wildlife Tasks**

- F1 Plant Hedge at Green Down (following consultation)

*Subject to receiving approval from the Greendown residents, it is proposed to plant a hawthorn/blackthorn hedge inside the existing fence along Greendown.*

*In the long term this hedge could be laid and form a more attractive replacement for the fence.*

### **People Tasks**

- F2 Improvements to Entrances from Troopers Hill Road

*Following discussions with the Highways Dept in Year 3 (E2) any agreed improvements will be carried out in this year. Consideration will also be given to improving the access route from the Avon Trail and Crews Hole Road.*

- F3 New Steps from No 2 Entrance

*The steps from the second Troopers Hill entrance lead away from any route to the top of the hill and the chimney. As a result erosion has been caused on the direct route by people scrambling up the bank and the steps are little used.*

*It is proposed to establish a new path, including steps as necessary, heading towards the top of the hill from the top of the existing steps.*

- F4 Upgrade Path from Open Space to Chimney

*Following on from the provision of a path for wheelchair users across Malvern road Open Space in Year 3 the path to the area of the chimney will be upgraded.*

**Map F – Year 4 – April 2007 to March 2008**



## **Schedule G – Year 5 – April 2008 to March 2009**

### **Wildlife Tasks**

#### G1 Create Additional Glades

*The 2000 Invertebrate Survey recommended the creation of additional glade areas in the existing scrub to create further areas beneficial to invertebrates.*

*A further survey is proposed. Glades should be created in areas recommended by this later survey.*

### **People Tasks**

#### G2 Installation of Interpretive View Point

*This is envisaged as a major new feature for the Hill. It should indicate all points of interest that can be seen from the hill and give historical information. The design could possibly be the subject of a competition in local schools. The materials used for construction should be associated with the Hill e.g.. pennant sandstone and slag blocks from the copper smelting of the eighteenth century. The design will complement other interpretive features on the hill.*

#### G3 Possible Fence Replacement

*The existing fence around the hill was installed around 1991, by 2009 it is anticipated that it will be nearing the end of its useful life, in particular the fence posts are likely to be rotting through at ground level.*

*It is likely therefore that large sections of the fence will require replacement.*

#### G4 Residents Survey

*Following five years of activities by the Friends of Troopers Hill a further survey on at least the scale of the 2002/2003 survey should be carried out to assess the success of the group and establish priorities for the next 5 years to March 2014.*

**Map G – Year 5 – April 2008 to March 2009**



### **Schedule H – Summary, Costing and Funding**

<b>Item</b>	<b>Description</b>	<b>Lead Backer</b>	<b>Estimated Cost</b>	<b>Proposed Funding</b>
<b>Ongoing Wildlife Tasks</b>				
A1	Eradication of Japanese Knotweed – Treatment required twice per year	Community Parks Manager	£1,000	BCC
A2	Hay Cut – Annually in late summer	CPM		BCC
A3	Clearance of Bramble from Areas of Broom and Heather – All year	Local Nature Reserve Officer	Volunteer Labour	
A4	Clearance of Scrub from Heathland	LNRO	Volunteer Labour	
A5	Clear Small Areas of Scrub – December/January	LNRO	Volunteer Labour	
A6	Reduce Area of Bracken – June and August	LNRO	Volunteer Labour	
A7	Vegetation Photographic Monitoring – August in 2004, 2006 & 2008	LNRO	£500	BCC
A8	Invertebrate Surveys and Butterfly Transects – April to September	LNRO	Academic Research	
A9	Botanical Surveys – As appropriate for the species to be surveyed	LNRO	Academic Research	
A10	Mowing of Grass, Malvern Road Open Space – As required.	CPM	£996	BCC
<b>Ongoing People Tasks</b>				
B1	Health and Safety Audit – Annually or as required.	CPM	N/A	BCC
B2	Maintenance of Definitive Footpath Surface – As required	CPM	Response	BCC
B3	Clear Back Vegetation from Footpaths – Twice per year (June, August)	CPM		BCC
B4	Cut back Vegetation from ‘Informal’ Footpaths – As required April to September	Friends of Troopers Hill	Volunteer Labour	
B5	Maintenance of the Boundary Fence – As required	CPM	Response	BCC
B6	Maintenance of Pedestrian Access Gates – As required	CPM	Response	BCC
B7	Maintenance of Dog Bins – Three times per week	CPM	£48/bin	BCC
B8	Maintenance of Existing Seats – As required	CPM	Response	BCC
B9	Inspection of Structures – Annual visual inspection	CPM	N/A	BCC

**Schedule H – Summary, Costing and Funding (Continued)**

Item	Description	Lead Backer	Estimated Cost	Proposed Funding
<b>Ongoing People Tasks (Continued)</b>				
B10	Maintenance of Structures – As required following surveys	CPM	Response	BCC
B11	Removal of Hazardous or Large Items of Rubbish – As required	CPM	Response	BCC
B12	Response to Incidents of Damage/Vandalism – As required	CPM	Response	BCC
B13	Litter picking – Every 3 or 4 months	FoTH	Volunteer Labour	
<b>Year 1 – April 2004 to March 2005</b>				
<b>Wildlife Tasks</b>				
C1	Establish Friends of Troopers Hill Tool Store	FoTH	£921	Grant 1
C2	Health and Safety and First Aid Training and Equipment	FoTH	£428	Grant 1
<b>People Tasks</b>				
C3	Repairs to steps on Definitive Footpath	CPM	£500	BCC
C4	Provision of Dog Bin at Greendown/Troopers Hill Road Entrance	CPM	£250	BCC
C5	Repositioning of Dog Bin from Summerhill Terrace	CPM	£80	BCC
C6	Provision of Second Additional Dog Bin – location to be agreed	CPM	£250	BCC
C7	Inspection and Repairs to stack	CPM	Response	BCC
C8	Clear Steps from No 2 Entrance	FoTH	Complete	
C9	Repairs to Broken Fence Rails	CPM	Response	BCC
C10	Provision of fence at Summerhill Terrace	CPM	£1,800	BCC
C11	Repairs/improvement to Gate at Malvern Rd	FoTH	£820	Grant 2
C12	Installation of 3 New Benches	FoTH	£900	Grant 2
C13	Installation of Signs at Entrances	FoTH	£1,220	Grant1
C14	Installation of 2 Notice Boards	FoTH		
C15	Consultation on the Future of Malvern Rd Open Space	FoTH	Volunteer Labour	
C16	‘Interpretive History Project’	LNRO	£1,500	Wildspace!

**Schedule H – Summary, Costing and Funding (Continued)**

Item	Description	Lead Backer	Estimated Cost	Proposed Funding
<b>Year 2 – April 2005 to March 2006</b>				
<b>People Tasks</b>				
D1	Site Interpretation	FoTH		Grant 3
D2	Installation of wheelchair access from Open Space	CPM		BCC
D3	Installation of access for child buggies at Greendown	FoTH		Fund Raising
D4	Improve area around seats and benches	FoTH		Grant 2
D5	Repairs to existing steps on informal paths	FoTH	Volunteer Labour	
D6	Clear area around Stack	CPM	£750	BCC
D7	Paths Through Woodland	FoTH	Volunteer Labour	
D8	Provision of New Play Area, Malvern Road Open Space	FoTH		Grant 4
<b>Year 3 – April 2006 to March 2007</b>				
<b>Wildlife Tasks</b>				
E1	Tree/Wildflower planting, Malvern Rd Open Space	FoTH		Fund Raising
<b>People Tasks</b>				
E2	Consultation on Improvements at Entrances to Troopers Hill Road -	LNRO		Grant 5
E3	New Path and Wheelchair access from Summerhill Terrace	FoTH		Grant 6
E4	Installation of Interpretation Near Specific Features	FoTH		Grant 7
E5	Provision of Further Benches	FoTH		Grant 6
E6	Provision of Seats in Malvern Rd Open Space	FoTH		Grant 6
E7	Install Direction Signs	LNRO		BCC
E8	Selective improvements to informal paths	FoTH	Volunteer Labour	

**Schedule H – Summary, Costing and Funding (Continued)**

Item	Description	Lead Backer	Estimated Cost	Proposed Funding
<b>Year 4 – April 2007 to March 2008</b>				
<b>Wildlife Tasks</b>				
F1	Plant Hedge at Green Down (following consultation)	FoTH		Fund Raising
<b>People Tasks</b>				
F2	Improvements to Troopers Hill Road Entrances	LNRO		Grant 5
F3	New Steps from No 2 Entrance	FoTH		Fund Raising
F4	Upgrade Path from Open Space to Chimney	FoTH		Grant 6
<b>Year 5 – April 2008 to March 2009</b>				
<b>Wildlife Tasks</b>				
G1	Create Additional Glades	LNRO		Volunteer Labour
<b>People Tasks</b>				
G2	Installation of Interpretive View Point	FoTH		Fund Raising
G3	Possible Fence Replacement	CPM		BCC
G4	Residents Survey	FoTH		Volunteer Labour

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

- i This Management and Action Plan has been developed from the previous management plans for Troopers Hill by Bristol Parks and the Friends of Troopers Hill through a process of public consultation.
- ii The primary source of public views is the Visitor Survey 2002/3 carried out as part of the Bristol Wildspace Project by Sally Oldfield. This survey of approximately 1000 households surrounding the site elicited 192 replies.
- iii The information from this survey has been supplemented by the views expressed at the meetings held to form the Friends of Troopers Hill and also at meetings of the group since its formation.
- iv Two reports have been produced for the Council in recent years that set out proposals for the management of the Hill to protect and enhance the natural environment. These reports are supported by both the Friends of Troopers Hill and Bristol Parks and have therefore been incorporated into this document which forms an update to the 1999 plan:
  - Troopers Hill Local Nature Reserve Management Plan - March 1999 by Wessex Ecological Consultancy
  - Invertebrate Survey of Troopers Hill Bristol – 2000 by David Gibbs
- v Copies of the reports are available from the Friends of Troopers Hill or Sally Oldfield at Bristol City Council.
- vi In addition Wessex Ecological Consultancy have carried out photographic surveys of the Reserve biennially since 1994. Reports on these surveys have included further management recommendations.

## **Appendix II – Constitution of The Friends of Troopers Hill**

**Name of the group:** Friends of Troopers Hill

**Aims:**

The group aims to ensure that Troopers Hill Local Nature Reserve is maintained as a nature reserve, of benefit to both wildlife and people.

To fulfil this aim the group will:

- Liaise with Bristol City Council to ensure a high level of care for Troopers Hill Local Nature Reserve and to have a say in how the site is managed.
- Provide a friendly and welcoming community focus for people interested in Troopers Hill.
- Contribute to making Troopers Hill a safe and inviting place to visit.
- Work to improve understanding and increase respect of Troopers Hill by the local community.
- Contribute to the management of Troopers Hill, including the protection of wildlife habitats, in accordance with the Management Plan for the site, a copy of which will be held by the group.
- Research and collect information relevant to Troopers Hill, for example on the wildlife and history of the site.
- Work with Bristol City Council and other bodies to ensure that the effects on Troopers Hill are considered in any plans or developments for surrounding areas.

**Membership and equality:**

Membership of the group is open to anybody with an interest in Troopers Hill or the surrounding area.

The group will try to make sure this is a reality by ensuring that it is as widely publicised as possible and that it is welcoming to everyone.

**Organisation:**

All meetings are open to all members of the group. Individual members will be elected to the following roles:

Chairperson, who will act as the main contact and spokesperson for the group and who will keep meetings fair, unbiased and on time.

Treasurer, who will be responsible for opening a bank account for the group, holding the cheque book, keeping receipts and a record of all income and expenditure of the group.

Secretary, who will be responsible for organising meetings and taking the minutes.

Membership secretary who will keep a record of all members' contact details.

## **Appendix II – Constitution of The Friends of Troopers Hill (Continued)**

Work Party Organiser, who will liaise with Bristol City Council to agree practical conservation work to be carried out by the group, and who will ensure that all necessary equipment is brought to each work session.

Research Co-ordinator, who will collate information on the history and wildlife of Troopers Hill and who will be responsible for making the information available to all members.

All practical work to be carried out by the group will be agreed and risk assessed by Bristol City Council 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 the group may have several people willing to be leaders).

There will be an Annual General Meeting (AGM) in which the group's finances and activities will be reported on and officers elected. Changes can be made to the constitution at the AGM. Vacant officer roles can be filled at any time of year but they must be ratified and elections held at the next AGM. An individual member may hold up to two officer roles at the same time.

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

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

### **Introduction**

The Friends of Troopers Hill 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**

Troopers Hill 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:

Local Nature Reserve Officer    Sally Oldfield    Tel 0117 922 4429

Community Parks Manager    Gary Ratcliffe    Tel 0117 922 3719

### **Friends of Troopers Hill Organisation**

The Friends of Troopers Hill Works Party Organiser, Rob Acton-Campbell, will be responsible in consultation with the Council's representatives for deciding on tasks to be undertaken and for ensuring that this plan is complied with.

Rob's contact details are:

Address: 3, Corkers Hill, St George Bristol BS5 8DT Tel: 0117 947 5037

For each Work Party a Work Party Leader will be appointed, this could be a member of the Friends of Troopers Hill or a Council employee. This appointment will be approved by the Council's representative. The Work Party Leader shall have attended a course on the Health and Safety aspects of the type of work to be undertaken.

Members of the Friends of Troopers Hill who have undergone training for tasks involving hand tools only are:

Rob Acton-Campbell  
Susan Acton-Campbell  
Sue Fowden  
Carole Edwards  
Norman Spalding  
Virginia Spalding

Each Work Party shall also be attended by a qualified first aider, who shall ensure that a first aid kit and mobile phone are available for use in emergency.

Members of the Friends of Troopers Hill who are qualified first aiders are:

Rob Acton-Campbell	First Aid at Work	Valid to Feb 2007
Andy Wilcox	First Aid at Work	Valid to Aug 2006

## **Appendix III – Health and Safety Plan (Continued)**

### **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 Troopers Hill Work Party Leader, 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**

At the start each Work Party the Work Party Leader shall identify himself 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 Sally Oldfield or Gary Ratcliffe 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 IV– Species List from 1999 Management Plan

### Appendix 1 Plant Species List (Surveys 1985 to 1999)

Sycamore	<i>Acer pseudoplatanus</i>
Yarrow	<i>Achillea millefolium</i>
Ground elder	<i>Aegopodium podagraria</i>
Common bent	<i>Agrostis capillaris</i>
Velvet bent	<i>Agrostis canina</i>
Brown bent	<i>Agrostis vinealis</i>
Silvery hair-grass	<i>Aira caryophyllea</i>
Early hair-grass	<i>Aira praecox</i>
Crow garlic	<i>Allium vineale</i>
Meadow foxtail	<i>Alopecurus pratensis</i>
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Thale cress	<i>Arabidopsis thaliana</i>
Thyme-leaved sandwort	<i>Arenaria serpyllifolia ssp leptoclados</i>
Thyme-leaved sandwort	<i>Arenaria serpyllifolia ssp serpyllifolia</i>
Daisy	<i>Bellis perennis</i>
Silver birch	<i>Betula pendula</i>
Lop grass	<i>Bromus hordaceus</i>
Sterile brome	<i>Bromus sterilis</i>
Buddleia	<i>Buddleja davidii</i>
Ling	<i>Calluna vulgaris</i>
Black knapweed	<i>Centaurea nigra</i>
Centaury	<i>Centaurium erythraea</i>
Red valerian	<i>Centranthus ruber</i>
Common mouse-ear chickweed	<i>Cerastium fontanum</i>
Clustered mouse-ear chickweed	<i>Cerastium glomeratum</i>
Small mouse-ear chickweed	<i>Cerastium semidecandrum</i>
Snow-in-summer	<i>Cerastium tomentosum</i>
Rosebay willowherb	<i>Chamaerion angustifolium</i>
Creeping thistle	<i>Cirsium arvense</i>
Spear thistle	<i>Cirsium vulgare</i>
Hawthorn	<i>Crataegus monogyna</i>
Smooth hawksbeard	<i>Crepis capillaris</i>
Rough hawksbeard	<i>Crepis vesicaria</i>
Crested dog's-tail	<i>Cynosurus cristatus</i>
Broom	<i>Cytisus scoparius</i>
Cocksfoot	<i>Dactylis glomerata</i>
Heath grass	<i>Danthonia decumbens</i>
Tufted hair-grass	<i>Deschampsia caespitosa</i>
Wavy hair-grass	<i>Deschampsia flexuosa</i>
Teasel	<i>Dipsacus fullonum</i>
Male fern	<i>Dryopteris filix-mas</i>
Field horsetail	<i>Equisetum arvense</i>
Bell heather	<i>Erica cinerea</i>
Blue fleabane	<i>Erigeron acer</i>
Spring whitlow grass	<i>Erophila verna</i>
Hemp agrimony	<i>Eupatorium cannabinum</i>
Sheep's fescue	<i>Festuca ovina</i>

**Appendix IV – Species List from 1999 Management Plan  
(Continued)**

Red fescue	<i>Festuca rubra</i>
Fennel	<i>Foeniculum vulgare</i>
Ash	<i>Fraxinus excelsior</i>
Cleavers	<i>Galium aparine</i>
Heath bedstraw	<i>Galium saxatile</i>
Cut-leaved cranesbill	<i>Geranium dissectum</i>
Ivy	<i>Hedera helix</i>
Yorkshire fog	<i>Holcus lantus</i>
Soft grass	<i>Holcus mollis</i>
Wall barley	<i>Hordeum murinum</i>
Meadow barley	<i>Hordeum secalinum</i>
Imperforate St John's wort	<i>Hypericum maculatum</i>
Perforate St John's wort	<i>Hypericum perforatum</i>
Common catsear	<i>Hypochaeris radicata</i>
Laburnum	<i>Laburnum anagyroides</i>
White dead nettle	<i>Lamium album</i>
Bitter vetch	<i>Lathyrus linifolius</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Narrow-leaved everlasting pea	<i>Lathyrus sylvestris</i>
Autumnal hawkbit	<i>Leontodon autumnalis</i>
Ox-eye daisy	<i>Leucanthemum vulgare</i>
Wild privet	<i>Ligustrum vulgare</i>
Perennial rye-grass	<i>Lolium perenne</i>
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Field woodrush	<i>Luzula campestris</i>
Heath woodrush	<i>Luzula multiflora</i>
Apple	<i>Malus domestica</i>
Common mallow	<i>Malva sylvestris</i>
Black medic	<i>Medicago lupulina</i>
Tall melilot	<i>Melilotus altissima</i>
Grape hyacinth	<i>Muscari armeniacum</i>
Timothy	<i>Phleum pratense</i>
Mouse-ear hawkweed	<i>Pilosella officinalis</i>
Buckshorn plantain	<i>Plantago coronopus</i>
Ribwort plantain	<i>Plantago lanceolatus</i>
Ratstail plantain	<i>Plantago major</i>
Annual meadow-grass	<i>Poa annua</i>
Rough-stalked meadow-grass	<i>Poa trivialis</i>
Tormentil	<i>Potentilla erecta</i>
Creeping cinquefoil	<i>Potentilla reptans</i>
Self-heal	<i>Prunella vulgaris</i>
Blackthorn	<i>Prunus spinosa</i>
Bracken	<i>Pteridium aquilinum</i>
Turkey oak	<i>Quercus cerris</i>
Holm oak	<i>Quercus ilex</i>
Sessile oak	<i>Quercus petraea</i>
Pedunculate oak	<i>Quercus robur</i>
Meadow buttercup	<i>Ranunculus acris</i>
Bulbous buttercup	<i>Ranunculus bulbosus</i>

## Appendix IV – Species List from 1999 Management Plan (Continued)

Lesser celandine	<i>Ranunculus ficaria</i>
Creeping buttercup	<i>Ranunculus repens</i>
Japanese knotweed	<i>Reynoutria japonica</i>
Dog rose	<i>Rosa canina</i> agg
Bramble	<i>Rubus fruticosus</i> agg
Sorrel	<i>Rumex acetosa</i>
Sheep's sorrel	<i>Rumex acetosella</i>
Curled dock	<i>Rumex crispus</i>
Broad-leaved dock	<i>Rumex obtusifolius</i>
Wood dock	<i>Rumex sanguineus</i>
Goat willow	<i>Salix caprea</i>
Elder	<i>Sambucus nigra</i>
Rock stonecrop	<i>Sedum reflexum</i>
Common ragwort	<i>Senecio jacobaea</i>
Oxford ragwort	<i>Senecio squalidus</i>
Groundsel	<i>Senecio vulgaris</i>
Golden rod	<i>Solidago virgaurea</i>
Hedge woundwort	<i>Stachys sylvatica</i>
Tansy	<i>Tanacetum vulgare</i>
Wood sage	<i>Teucrium scorodonium</i>
Lesser trefoil	<i>Trifolium dubium</i>
Least trefoil	<i>Trifolium micranthum</i>
Red clover	<i>Trifolium pratense</i>
White clover	<i>Trifolium repens</i>
Coltsfoot	<i>Tussilago farfara</i>
Gorse	<i>Ulex europaeus</i>
Common corn salad	<i>Valerianella locusta</i>
Wall speedwell	<i>Veronica arvensis</i>
Ivy-leaved speedwell	<i>Veronica hederifolia</i>
Field speedwell	<i>Veronica persica</i>
Common vetch	<i>Vicia sativa</i>
Common dog violet	<i>Viola riviniana</i>
Squirrel's tail fescue	<i>Vulpia bromoides</i>
Rat's tail fescue	<i>Vulpia myuros</i>

### Appendix 2 Butterfly Species Recorded (Surveys 1985 - 98)

Small skipper	<i>Thymelicus sylvestris</i>
Large skipper	<i>Ochlodes venata</i>
Clouded yellow	<i>Colias crocea</i>
Brimstone	<i>Gonepteryx rhamni</i>
Large white	<i>Pieris brassicae</i>
Small white	<i>Pieris rapae</i>
Green-veined white	<i>Pieris napi</i>
Orange tip	<i>Anthocharis cardamines</i>
Small copper	<i>Lycaena phlaeas</i>
Common blue	<i>Polyommatus icarus</i>
Holly blue	<i>Celastrina argiolus</i>
Red admiral	<i>Vanessa atalanta</i>

## Appendix IV – Species List from 1999 Management Plan (Continued)

Painted lady	<i>Vanessa cardui</i>
Small tortoiseshell	<i>Aglais urticae</i>
Peacock	<i>Inachis io</i>
Comma	<i>Polygonia c-album</i>
Speckled wood	<i>Pararge aegeria</i>
Marbled white	<i>Melanargia galathea</i>
Grayling	<i>Hipparchia galathea</i>
Gatekeeper	<i>Pyronia tithonus</i>
Meadow brown	<i>Maniola jurtina</i>
Small heath	<i>Coenonympha pamphilus</i>
Ringlet	<i>Aphantopus hyperantus</i>

### Appendix 3 Moth Species Recorded (Casual observations 1994-98)

Long horn moth	<i>Adella reamurella</i>
Silver Y	<i>Autographa gamma</i>
Rush veener	<i>Nomophila noctuella</i>
Grass moth	<i>Agriphila tristella</i>
Grass moth	<i>Agriphila straminella</i>
Grass moth	<i>Agriphila inquitella</i>
Bramble leaf-miner	<i>Stigmella aurella</i>

### Appendix 4 Grasshoppers and Bush-crickets Recorded (Surveys 1994-98)

Mottled grasshopper	<i>Myreomattix maculatus</i>
Field grasshopper	<i>Chorthippus brunneus</i>
Meadow grasshopper	<i>Chorthippus brunneus</i>
Dark bush-cricket	<i>Pholidoptera griseoptera</i>
Speckled bush-cricket	<i>Leptophyes punctatissima</i>

### Appendix 5 Other Insect Species Recorded (Surveys 26th May 1995, 4th May 1998 and casual records)

#### Hymenoptera

<i>Nomada goodeniana</i>	Na Species - occurs in 30 or fewer ten kilometre squares in Britain
<i>Nomada fucata</i>	
<i>Nomada lathburniana</i>	RDB Species - occurs in 15 or fewer ten kilometre squares in Britain
<i>Sphcodes monilicornis</i>	
<i>Lasioglossum parvulum</i>	
<i>Andrena fulva</i>	
<i>Andrena wilkella</i>	
<i>Andrena tibialis</i>	
<i>Andrena pubescens</i>	
<i>Andrena cineraria</i>	
<i>Andrena flavipes</i>	

**Appendix IV – Species List from 1999 Management Plan  
(Continued)**

<i>Andrena humilis</i>	Nb Species - occurs in 31-100 ten kilometre squares in Britain
<u>Hemiptera</u>	
<i>Acanthosoma haemorrhoidale</i> <i>Peritrechus geniculatus</i>	Hawthorn shield bug
<u>Coleoptera</u>	
<i>Cryptocephalus aureolus</i>	Nb species (recorded from 31 to 100 ten-kilometre squares in Britain)
<u>Diptera</u>	
<i>Eristalis tenax</i>	Drone fly
<i>Eristalis pertinax</i>	Drone fly
<i>Platycheirus albimanus</i>	Hoverfly
<i>Episyrphus balteatus</i>	Hoverfly
<i>Epistrophe eligans</i>	Hoverfly
<i>Bombylius major</i>	Dark-edged bee-fly
<i>Bombylius discolor</i>	Dotted bee-fly      Nationally notable species

## **Appendix V – Invertebrate Species List, from 2000 Survey**

**Invertebrate Survey of Troopers Hill, Bristol. Vc34 ST 62 73  
Appendix 1.**

**Annotated Checklist**

**Araneae (spiders)**

Xysticus erraticus (15.6)  
Pisaura mirabilis (17.8)  
Misumena vatia (17.8)  
Araneus diadematus (17.8)

**Odonata (dragonflies)**

Platycnemis pennatus (15.6)

**Orthoptera (grasshoppers and crickets)**

Chorthippus brunneus (17.8)  
Chorthippus paralellus (17.8)  
Myrmetottix maculata (17.8)  
Pholidoptera griseoptera (17.8)  
Leptophyes punctatissima (17.8)

**Dermaptera (earwigs)**

Forficula auricularia (2.5); (17.8)

**Hemiptera (true bugs)**

Piezodorus lituratus (2.5)  
Palomena prasina (17.8)  
Aelia acuminata (17.8)  
Alydus calcaratus **Local** (30.7)

**Lepidoptera (butterflies and moths)**

Nemophora degeerella (11.6)  
Phyllonorycter messaniella (x mine 26.8)  
Phyllonorycter ulmifoliella (x mine 23.8)  
Coleophora deauratella (11.6)  
Coleophora saturatella [**status?, first for W.Glouc.**] (30.7)  
Batia lambdella **county rarity** (16.8)  
Nomophila noctuella (17.8)  
Trophora chlorosata (2.5)  
Aglais urticae (2.5)  
Inachis io (2.5)  
Maniola jurtina (17.8)  
Pararge aegeria (2.5); (17.8)  
Pyronia tithonus (17.8)  
Coenonympha pamphilus (15.6)  
Lycaena phlaeas (2.5); (17.8)  
Polyommatus icarus (17.8)  
Euclidia glyphica (15.6)  
Autographa gamma (17.8)

**Coleoptera (beetles)**

Notiophilus aquaticus (2.5)  
Badister bipustulatus (2.5)  
Amara tibialis **very local** (2.5); (15.6)  
Harpalus puncticeps **local** (16.8)  
Harpalus rufitarsis **second Glos. record** (2.5)  
Metabletus foveatus (2.5)  
Prosternon tessellatum (15.6)  
Scymnus frontalis **very local** (15.6)  
Halyzia 16-guttata (15.6)

## **Appendix V – Invertebrate Species List, from 2000 Survey (Continued)**

Coccinella septempunctata (2.5)  
Meligethes aeneus (2.5)  
Cylindrinotus laevioctostriatus (17.8)  
Cryptocephalus aureolus **Nationally Scarce b** (15.6)  
Bruchidius ater (2.5)  
Strophosoma nebulosum (2.5); (16.8)  
Apion fuscirostre **very local** (2.5); (17.8)  
Apion ulicis (2.5)  
Sitona regensteiniensis (2.5)

**Hymenoptera (bees, wasps, ants etc.)**

Dolerus picipes (2.5)  
Rhodogaster genistae (2.5)  
Hedychridium roseum (30.7)  
Anoplius nigerrimus (30.7); (15.6)  
Vespa germanica (2.5); (30.7)  
Vespa vulgaris (2.5)  
Astatia boops (30.7)  
Tropoxylon medium (16.8)  
Oxybelus uniglumis (30.7)  
Pemphredon lethifer (30.7)  
Ammophila sabulosa (15.6)  
Philanthus triangulum **RDB2** (30.7); (17.8)  
Gorytes quadrifasciatus (30.7)  
Gorytes tumidus (30.7)  
Cerceris arenaria (30.7)  
Cerceris rybyensis (30.7); (16.8)  
Colletes succincta (30.7); (16.8)  
Hylaeus hyalinatus (30.7)  
Andrena angustior (2.5)  
Andrena armata (fulva) (2.5)  
Andrena bicolor (2.5); (15.6)  
Andrena cineraria (2.5)  
Andrena flavipes (2.5); (30.7)  
Andrena haemorrhoea (2.5); (15.6)  
Andrena humilis **Nationally Scarce b** (2.5)  
Andrena labiata **Nationally Scarce a** (2.5)  
Andrena ovatula (2.5)  
Andrena pubescens (2.5)  
Andrena scotica (2.5)  
Andrena wilkella (15.6)  
Lasioglossum calceatum (2.5); (16.8)  
Lasioglossum leucozonium (2.5)  
Lasioglossum punctatissimum (15.6)  
Sphecodes crassus **Nationally Scarce b** (30.7)  
Sphecodes monilicornis (2.5); (15.6); (30.7)  
Sphecodes reticulatus **Nationally Scarce a** (15.6); (16.8)  
Panurgus banksianus (15.6)  
Anthophora bimaculata (30.7)  
Hoplitis claviventris (15.6)  
Megachile willughbiella (15.6)  
Nomada fabriciana (2.5)  
Nomada flava (2.5)  
Nomada flavoguttata (2.5)  
Nomada fucata **Nationally Scarce a** (2.5); (30.7)  
Nomada goodeniana (2.5)  
Nomada guttulata **RDB1 1<sup>st</sup> for Glouc.** (15.6)  
Nomada integra **Nationally Scarce a** (2.5); (15.6)  
Nomada lathburiana **RDB3** (2.5); (15.6)  
Nomada marshamella (2.5)

## Appendix V – Invertebrate Species List, from 2000 Survey (Continued)

Nomada panzeri (2.5)  
Nomada ruficornis (2.5); (15.6)  
Nomada rufipes (30.7)  
Bombus lapidarius (2.5); (15.6); (30.7); (17.8)  
Bombus lucorum (2.5); (17.8)  
Bombus pascourum (2.5); (15.6); (30.7); (17.8)  
Bombus pratorum (2.5)  
Bombus terrestris (2.5); (30.7); (17.8)  
Bombus vestalis (2.5)  
Apis mellifera (2.5)

### Diptera (flies)

Tipula vernalis (2.5)  
Chorisops nagatomii **Nationally Scarce** (16.8)  
Microchrysa polita (15.6)  
Bombylius discolor **Nationally Scarce b** (2.5) 6+ ovipositing females  
Bombylius major (2.5) 3 ovipositing females  
Dysmachus trigonus (2.5)  
Machimus cingulatus (30.7)  
Dioctria baumhaueri **county rarity** (15.6)  
Rhamphomyia tarsata (2.5)  
Epistrophe eligans (2.5)  
Xanthogramma pedissequum (17.8)  
Eristalis pertinax (2.5)  
Eristalis tenax (17.8)  
Myathropa florea (17.8)  
Volucella bombylans (15.6)  
Syrirta pipiens (17.8)  
Thecophora atra (16.8)  
Micropeza lateralis **Nationally Scarce 1<sup>st</sup> for Glos.** (16.8)  
Sphenella marginata (17.8)  
Anomoia purmunda (17.8)  
Tephritis neesii (2.5)  
Tephritis vespertina (2.5); (16.8)  
Leucophora personata (2.5)  
Metopia (argyrocephala?)[female not certainly determinable] (30.7)  
Carcelia lucorum (2.5)  
Eriothrix rufomaculata (17.8)  
Lydella grisescens (16.8)

### Appendix 2

#### Nationally Scarce and RDB species recorded in previous years

Tiphia minuta <b>Nationally Scarce b</b> 1999	Epeolus cruciger <b>Local</b> 1999
Nysson trimaculatus <b>Nationally Scarce b</b> 1999	Bombus ruderarius <b>Local</b> 1999
Colletes succincta <b>Local</b> 1999	Bombus rupestris <b>Nationally Scarce b</b> 1999
Andrena fulvago <b>Nationally Scarce a</b> 1999	Bombylius discolor <b>Nationally Scarce b</b> 1999
Andrena humilis <b>Nationally Scarce b</b> 1998, 1999	Dysmachus trigonus <b>Local</b> 1999
Andrena labiata <b>Nationally Scarce a</b> 1999	Machimus cingulatus <b>Local</b> 1999
Andrena tibialis <b>Nationally Scarce a</b> 1998	
Andrena trimmerana <b>Nationally Scarce b</b> 1999	
Sphecodes crassus <b>Nationally Scarce b</b> 1999	
Coelioxys conoidea <b>Local</b> 1999	
Anthophora bimaculata <b>Local</b> 1999	
Megachile maritima <b>Local</b> 1999	
Nomada fucata <b>Nationally Scarce a</b> 1998, 1999	
Nomada integra <b>Nationally Scarce a</b> 1999	
Nomada lathburiana <b>RDB3</b> 1999	
Nomada sheppardana <b>Local</b> 1999	

For further information on Troopers Hill,  
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of the reserve, please contact:

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