Manor Woods Valley
Bishopsworth

Management Plan

Version 4.1 – March 2023

Revision History

Version	Consultee	Date
1.0	Author's first draft	January 2019
1.1	Author's second draft	February 2019
1.2	Author's third draft	March 2019
1.3	Author's fourth draft	12 March 2019
2.0	Updated by author	17 April 2019
2,1	Update by author	7 May 2019
2.2	Updated by author	31 May 2019
2.3	Update by author	2 July 2019
2.4	Update by MWVG	16 September 2019
3.0	Major update by author	1 December 2019
4.0	Major update by author	December 2022
4.1	Continued updated by author	March 2023

1) Introduction

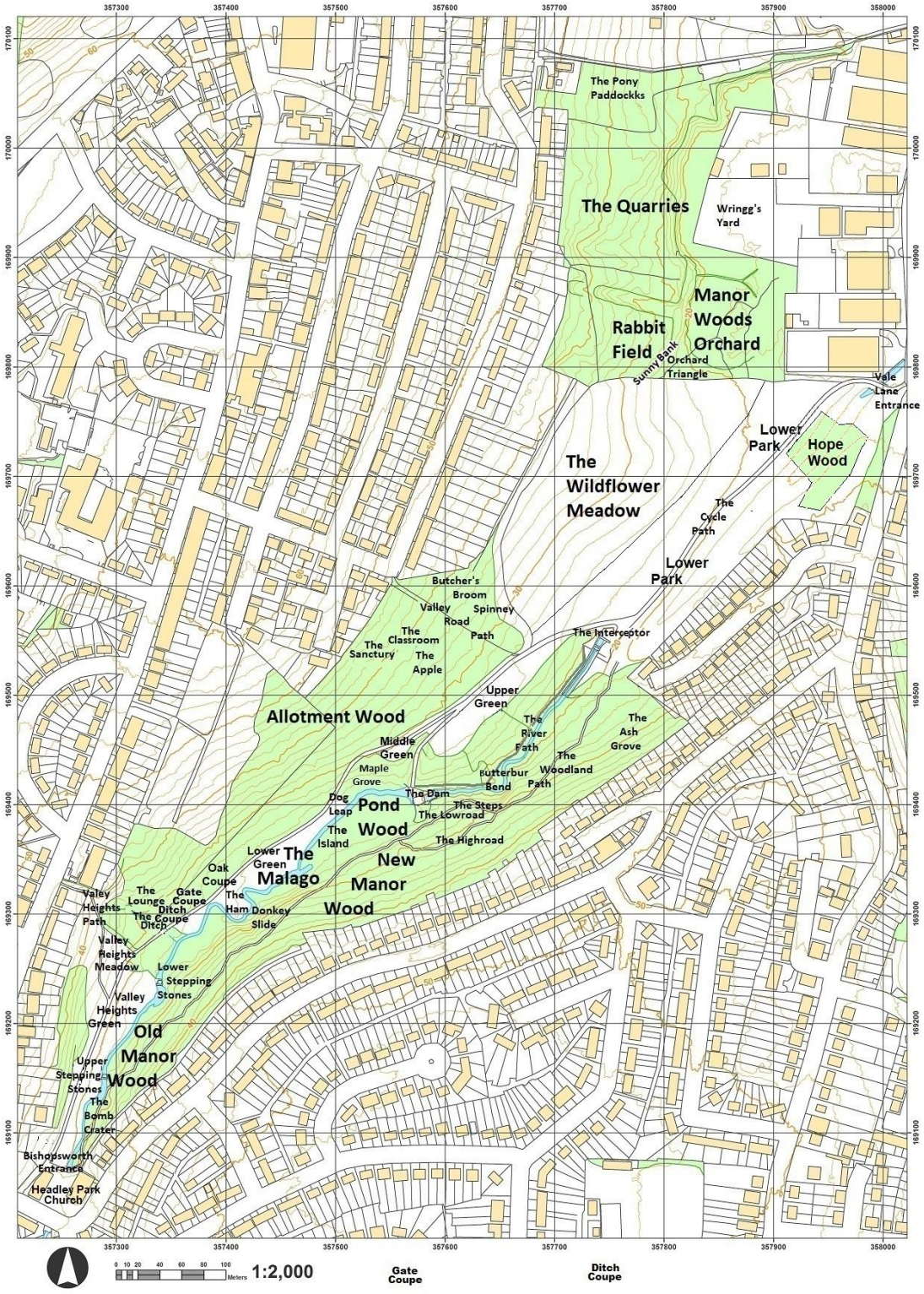
For the purpose of this document Manor Woods Valley is defined as the area identified as Manor Woods Valley on the base map used on the BRERC (Bristol Regional Environmental Records Centre) Online Recording website. The site stretches from Bishopsworth entrance in the southwest to the green-lane/footpath between Vale Lane and the television mast in the northeast.

The extent of Manor Woods Valley – outlined in dark green

All of the area is contained within Malago Valley SNCI (Site of Nature Conservation Interest) and Bishopsworth and Malago Conservation Area.

The majority of the area is contained within Manor Woods LNR (Local Nature Reserve). The LNR excludes Manor Woods Orchard and The Quarries at the northern end of Manor Woods Valley.

To aid identification, features within Manor Woods Valley have been given names.



The names of locations within Manor Woods Valley

2) Aims

Manor Woods Valley contains a number of discrete habitats, all of which require some form of management. It is recognised that the nature of habitats can, and usually do, change with time. This change can be driven by a number of factors, both natural and anthropomorphic. The aim of

management on this site is not to prevent or stop change, but to direct it in such a way that one or more habitats don't come to dominate the site and that the existing habitats are improved in quality and quantity where their importance outweighs that of other habitats.

This management plan considers each of the habitats separately, but recognises managing one habitat invariably impacts on one of more other habitats.

Unless stated otherwise the main agents of habitat management are Bristol City Council (BCC), which owns the site, and MWVG (Manor Woods Valley Group). The latter group consists of volunteers (including the author of this Management Plan) who campaign on behalf of the site, propose and carry out management actions on the site and monitor the outcome of all management actions.

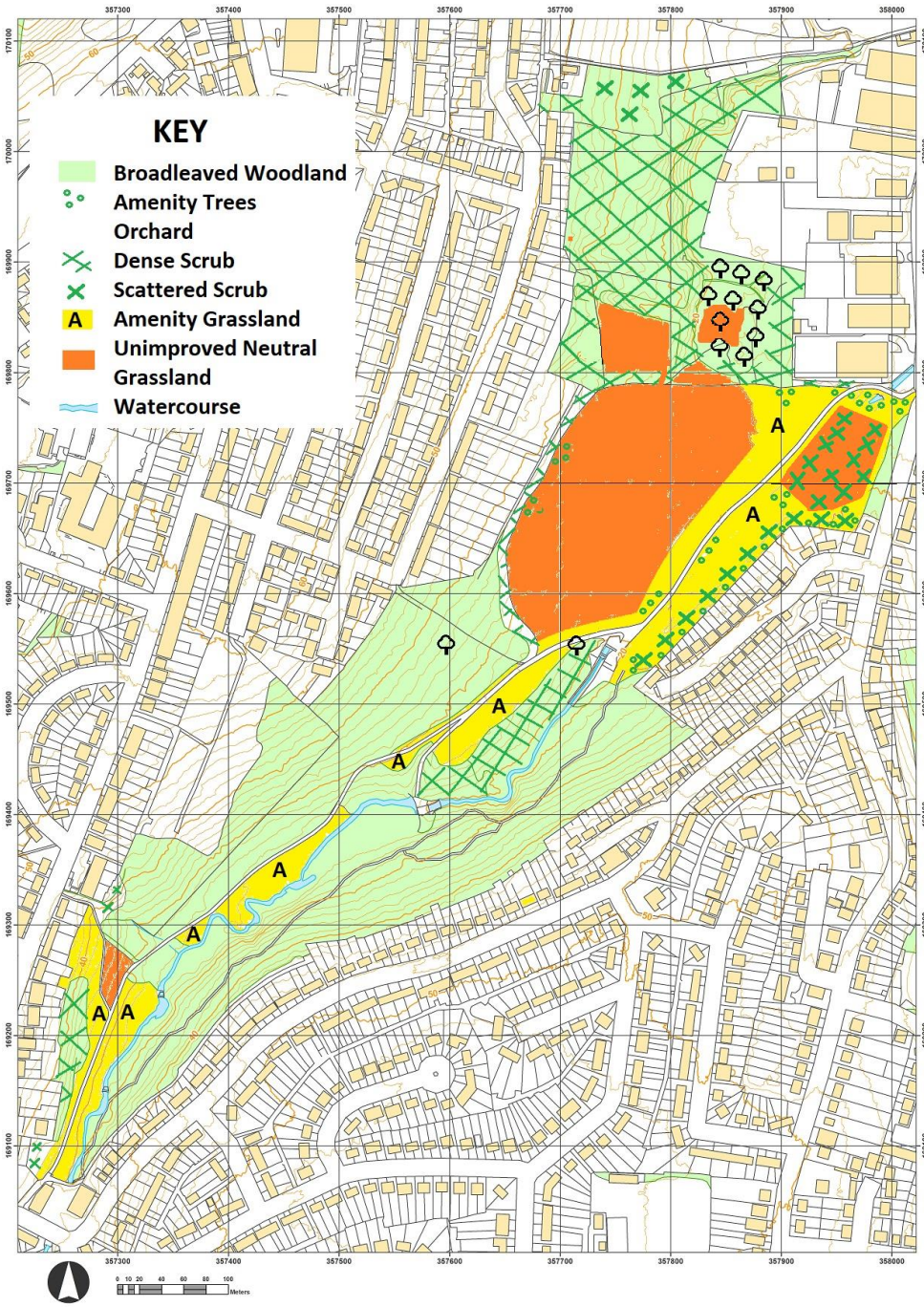
This document does not dwell on the history of the site, the context of the site in relation to other nearby sites or the users of the site; it concentrates on the improvement of the ecology of the site. This document sets out the aims of management of each habitat, the methods to be employed, the timescales involved and how to measure outcomes.

Management actions and aims are classified as short term (within 1 year), medium term (within 2 to 5 years) and long term (more than 5 years).

Contacts have been established with Zion Community Space, The Daily Grind café/bar and Headley Park Church. These provide meeting and toilet facilities within reasonably easy reach of Manor Woods Valley.

3) The Habitats

For the purpose of this Management Plan, habitats in Manor Woods Valley are categorised according to the Phase 1 Habitat categories of broadleaved woodlands, unimproved neutral grasslands, amenity grasslands, orchard, watercourse, scrub (scattered and dense) and amenity trees.



Phase 1 Habitat Map of Manor Woods Valley

3.1 Woodland

There are a variety of woodlands within Manor Woods Valley. They have different histories, species compositions and characters. All of the woodlands are contained within the LNR, SNCI and Conservation Area

Old Manor Wood consists of ancient Pendunculate (English) Oak standard and Hazel coppice woodland. It is identified as Ancient Semi-Natural Woodland. From the early Middle Ages until the late nineteen century most

woods in lowland England were coppiced. In this traditional method of managing woodland the coppice stools were cut at intervals, typically every 5-20 years, to produce a crop of poles for which there was a wide range of uses. The long history of coppicing has profoundly influenced the plants and animals now found in many semi-natural woods. Coppicing creates conditions suitable for many plants, insects and birds but it is particularly important to those requiring very open woodland habitats. The decline in coppicing has resulted in serious losses of habitat for certain open-woodland species. The future survival of some butterflies, for example, may depend on the return to more traditional methods of managing woodland. Coppicing is being revived on many woodland nature reserves.

The Old Manor Wood is not designated as Ancient Woodland in the Ancient Woodlands (England) inventory database. The inventory identifies over 52,000 ancient woodland sites in England. Ancient woodland is identified using presence or absence of woods from old maps, information about the wood's name, shape, internal boundaries, its location relative to other features, ground survey, and aerial photography. As Manor Wood is clearly shown on the tithe map of 1840 and named on maps dating to 1898, at which time it was shown as containing full grown trees, and may be able to trace it’s provenance to Domesday, its omission from the database should be seen as an oversight. A small Oak and Hazel copse to the northeast of Old Manor Wood may be of similar age.

A sequence of changes in the vegetation and its associated animals is set in motion each time a coppice coupe is cut. Typically, in the first summer after cutting, the woodland floor usually has rather sparse vegetation, but by the second summer the ground is carpeted with spring flowers and other plants. The coppice itself is very open in the first three or four years, and this allows species such as Birch and Bramble to establish themselves between the stools. The result can be an almost impenetrable tangle of low foliage, which persists until the coppice canopy closes, usually about five or eight years after cutting. The increasing shade rapidly eliminates most of the foliage beneath the canopy, which by this time may be over six metres above the ground. Until the next cutting there are little further changes to the structure of the vegetation other than continued growth of the coppice stems. However, if it is left long enough (that is, beyond the normal cutting age), the composition of the underwood may alter as species such as Hazel are overgrown by more strongly growing trees like Ash, Alder and Sycamore. This succession is becoming evident in Old Manor Wood.

The more diverse and abundant ground flora that is encouraged by coppicing tends to lead to a greater range and abundance of invertebrates, which in turn will act as a food source for a range of vertebrates including insectivorous reptiles (e.g., Slow-worms), birds (especially warbles and numerous other species when feeding young), shrews and bats. An increased variety and abundance of birds and small mammals offers improved foraging opportunities for a range of predators including owls, raptors and mustelids.

Old Manor Wood is situated on steep ground. Most of the Hazel stools have not been coppiced for many years, resulting in over-mature stems that have largely stopped flowering and fruiting, and are subject to physical collapse as their tops become too heavy for their anchorage within the stool bases. It is recognised however that at this stage they are attractive to a range of fungi, lichens and invertebrates, and their collapse out of the woodland canopy allows plants to flourish in the small 'pools of light' created.

Old Manor Wood's standard Oaks are mature, with some specimens loosing limbs or developing 'stag heads' (dead tops). Many of the standard Oaks have been damaged by burning at their bases. The form of the trees is mostly straight and upright; indicating that they have grown all their lives in a woodland setting where they have had to compete for light, compared with open-country trees that tend to spread and develop an uneven bushy form.

Sapling and immature Ash, Field Maple and others, occur in the Old Manor Wood. As well as Hazel, there are occasional, immature, Hollies and a single Yew in the shrub-layer. There are no apparent 'mother trees' within Manor Wood Valley for these. Ground vegetation consists mainly of Ivy in the heavily shaded parts, with abundant Ransoms and frequently Lesser Celandine. One patch of Wood Anemone is known. There are not thought to be any naturally occurring native Bluebells in this, or any other woodland, in Manor Woods Valley.

New Manor Wood lies to the northeast of Old Manor Wood. This woodland appears to have developed naturally from abandoned farmland. It does not appear on maps before 1974. The woodland is dominated by Field Maple and Ash with and under-storey dominated by Bramble and Ivy. There is a large stand of attenuated Ash at the northeast end of New Manor Wood. 'Ghost' field hedgerows are preserved in the form of lines of very mature Hazels, over-mature Hawthorns and mature Field Maples.

Ground vegetation in New Manor Wood consists mainly of Ivy in the heavily shaded parts, with abundant Ransoms and frequently Lesser Celandine. Brambles are frequent. Currants, Gooseberries and Raspberries occur. As this is recently formed woodland, the latter three species are likely to have originated from nearby gardens.

A reasonably good path, in need of some repair, runs the length of Old and New Manor Woods. This is regularly used, especially by dog-walkers. Users of this path experience the psychological affect of walking through woodland whilst actually being within a few metres of back-gardens, houses and open parkland. The path lends itself to a circular walking route within Manor Woods Valley.

Pond Wood, off the southern end of new Manor Wood, is a small Willow carr woodland. This woodland formed as the silt-trap pond once present on the Malago, upstream of The Dam (built in 1976), became full of silt by about 1990. The Willows are relatively densely spaced and so attenuated in form. Ground flora on the soft marshy substrate consists of a variety of marginal

and wetland species including Water Mint, Water Forget-me-Not, Great Willowherb and Woody Nightshade.

Allotment Wood became established as a result of natural vegetation succession from war time, ‘Dig for Victory’, allotments that were established on farmland, through rough grassland, to scrub and woodland. The woodland was not mapped as such prior to 1977. Today the woodland consists of mainly dense Hawthorn, Blackthorn, Ash and Hazel, with an understorey dominated by Ivy in its densest parts.

A large Apple tree within Allotment Wood is likely to have originated in the allotment stage of the site’s history. The Apple is not of a named variety, but appears to have originated from the rootstock of a cultivated tree. Other fruit trees may be present within New Wood.

As might be expected from woodland that is so young and that has become established on previously farmed then cultivated ground, the Allotment Wood contains relatively fewer woodland indicator species. To assist establishment of a more varied woodland floral assemblage, Foxgloves and Red Campion were planted in to three coppiced coupes to the southwest of the path to Valley Road in spring 2018. At the same time, Foxgloves were also planted in to a 2016/7 coupe near the south-western end of the wood. This latter coupe was coppiced in 2016/7 and rapidly developed a very dense cover of flowering Ransoms, where only a thin cover of largely vegetative state plants was present before.

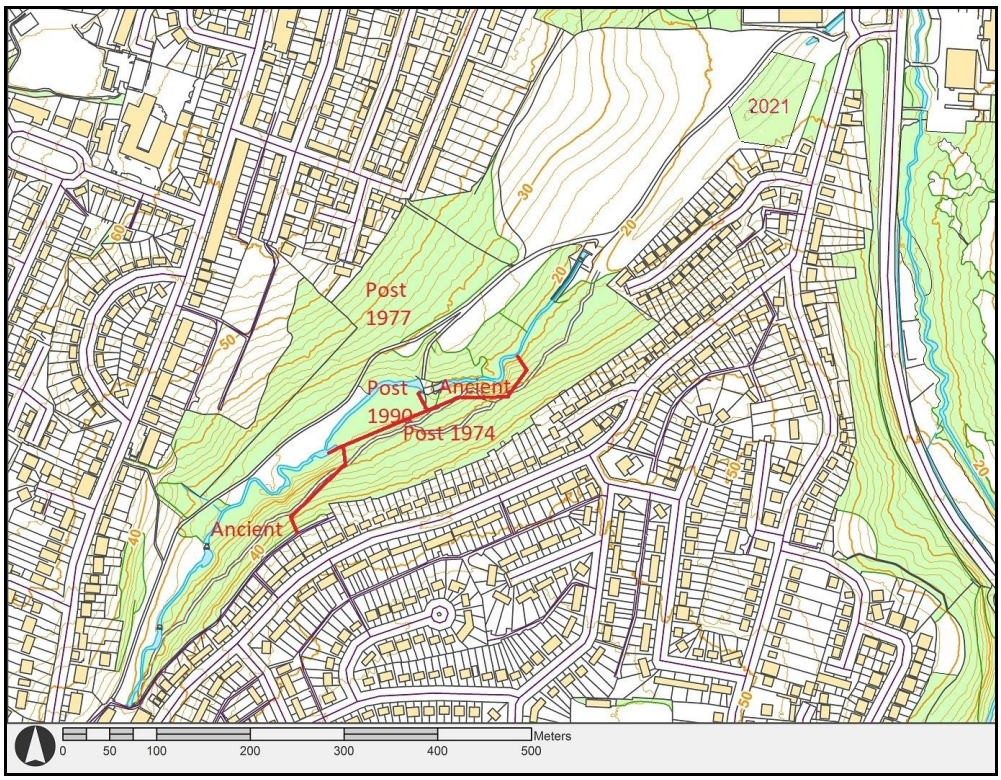
There are unmade and unmarked paths that leads to the Apple tree in Allotment Wood. Regular scrub clearance carried out around this tree has resulted in an open area being created. There is an additional cleared area nearby, named The Classroom. This latter, relatively secluded, location is used by groups working with people with learning or socialisation difficulties, and as a base for work being carried out in the area and Forest School activities. The former groups undertake woodland crafts or woodland working activities, often accompanied by picnic lunches.

Coppicing and scrub clearance at locations along the southern edge of Allotment Wood has encouraged more ground flora with its associated fauna.

Butcher’s Broom Spinney, is situated along the northeast boundary of Allotment Wood. This consists mainly of planted specimens of, for example, Field Maple, Wild Cherry, Rowan and Scots Pine, with remnant stales and tree guards still present. The ground flora in the more shaded western portion of the Spinney is relatively sparse, but includes a small number of Butchers Broom shrubs. The more open eastern end of the Spinney is dominated by Bramble.

There is a relatively small area of planted Field Maples and Hazels between Allotment Wood and the Malago. This is known as Maple Grove. The Field Maples are nearing maturity and the Hazel stools are slightly over mature. Due to the dense canopy, there is very sparse ground cover in the Grove.

Hope Wood was planted with c750 native species whips in February 2021, as part of the BCC One Tree per Child programme. These trees have established very well and are regularly weeded and otherwise maintained by the MWVG. The Charles III Oak was planted in this area in December 2022. This tree was grown in a local garden, from an acorn originating from the Edward VII Oak planted in Harlow in 1902.



Ages of woodlands in Manor Woods Valley

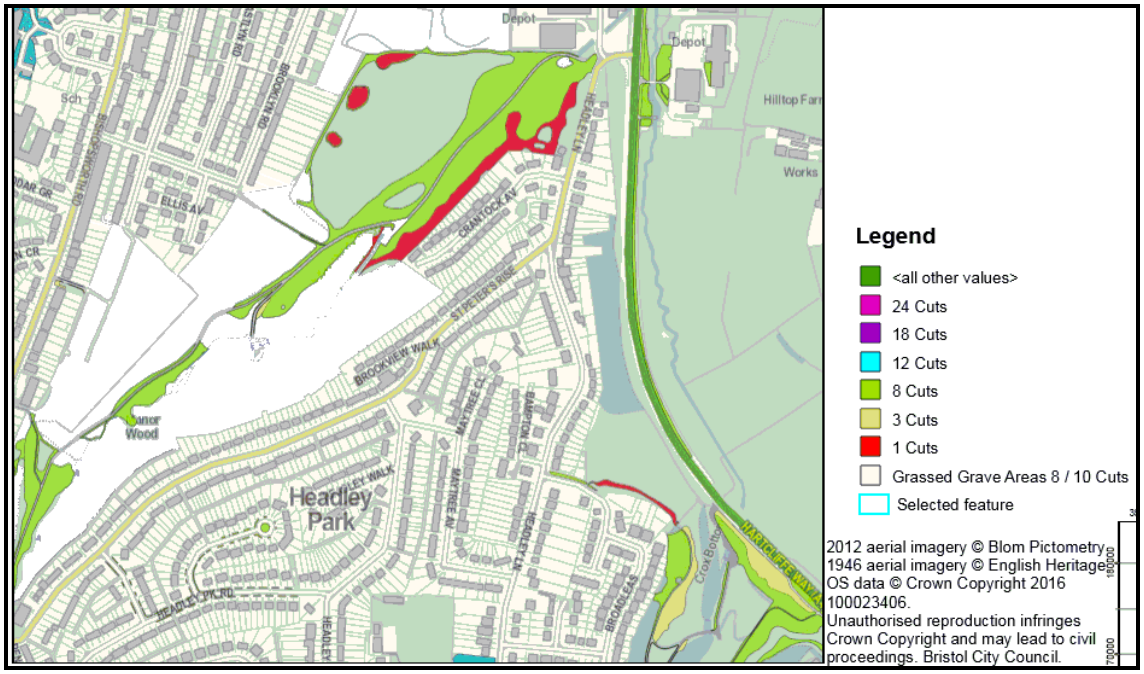
If the woodlands are to reach their full ecological and social function, active management is required. Management in Old Manor Wood could consist mainly of coppicing and removal of some self-sown trees. In New Manor Wood scrub clearance, coppicing and shrub and tree planting would be advantageous.

The majority of trees in New Manor Wood and the more mature trees in Allotment Wood are Ash. It is anticipated that the fungal disease, Ash Die-back, will have a very significant impact on these woodlands and nearby green sites, and even gardens. As it is likely that many trees will be felled by BCC on public safety grounds. BCC/MWVG should produce a strategy to determine if replacement tree planting or allowing and encouraging natural regeneration, or a combination of these two approaches, is most appropriate.

3.2 Grassland

There are essentially two grassland habitats in Manor Wood Valley, amenity grass and unimproved neutral grassland. The two types have different characteristics and management practices.

Amenity grassland occurs alongside the cyclepath in varying widths. There is a large extend of amenity grassland in the Lower Park. This habitat is characterised by its bright green colour and rapid growth during most seasons, its apparent low flora species diversity and its regular mowing regime. BCC's parks department are solely responsible for managing the amenity grassland using their own, locally based, employees and equipment. Their grassland management regime is defined by a published mowing programme. The arisings from mowing are not gathered or removed. The MWVG monitors the mowing of the amenity grassland.



The amenity grassland (bright green and red) mowing programme

Following the planting of Hope Wood in early 2021, mowing was withdrawn from this planted area at the northern end of the Lower Park. In 2022 other areas of the Lower Park parallel with the main path went unmown. Without at least bi-annual mowing, these areas will develop into scrub. This would be advantageous in terms of ecological connectivity along the spine of the site.

There are four (five including Hope Wood) areas of unimproved neutral grassland, namely the Wildflower Meadow, the Rabbit Field, the Orchard Triangle and Valley Heights Meadow.

The Wildflower Meadow is the largest meadow area. It has its origins in an area that was subject to spoil tipping from the excavations associated wit the culverting of the Malago in the mid 1970's. A sympathetic grass cutting regime

introduced by BCC in the 1990s resulted in an abundance of wild flowers hitherto un-seen. The Meadow was first cut for hay in the summer of 2007. A contractor now takes an annual cut of hay from the Meadow. It is understood that in 2018 the Meadow was registered as farmland with the Rural Payments Agency and that subsides received by BCC fund the taking of the hay crop. There may be a threat to the continued annual mowing of this area as a result of BCC budget cut-backs from 2023. Without at annual cut and remove programme, this meadow's floristic, and hence invertebrate, interest (biodiversity) is likely to rapidly decline.

The Rabbit Field is off the western side of the northern boundary of the Wildflower Meadow. It is an ex-landfill site (the precise nature of the landfill is unknown). Once known as a grassy meadow that was home to a population of Rabbits and numerous ant colonies, the area became overgrown when BCC ceased regular management n the 1990's. Brambles took the area over, the Rabbits disappeared and the ant colonies died out. A management regime was re-started in 2017, initially funded by a developer who had translocated Slow-worms to the site. By 2022 the area was returning, with regular management by the MWVG, to rough grassland with abundant wildflowers and with any colonies re-establishing.

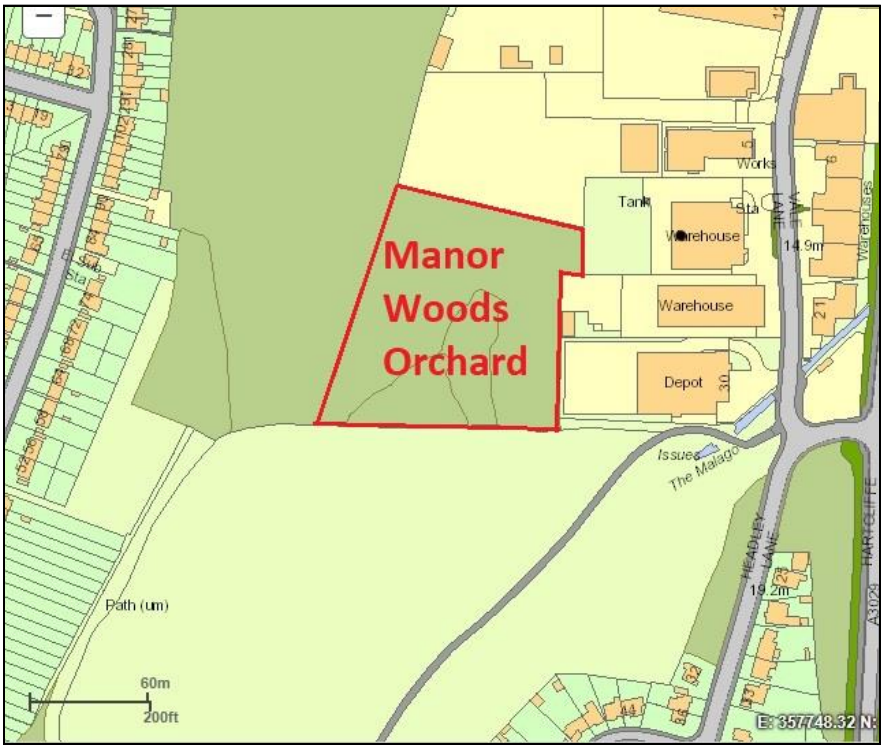
The Orchard Triangle is situated between the eastern end of the northern boundary of the Wildflower Meadow and Manor Woods Orchard. Until the mid-1990's this area was grassy with Bee Orchids and a single Pyramidal Orchid. When BCC ceased mowing this area it quickly became overgrown with dense Brambles. When MVCG, and others, re-commenced management of the area in the mid 2010's the Brambles were quickly cut-back and grassy habitat re-appeared. Bee Orchids reappeared in 2017 and a single Pyramidal Orchid in 2018. Cowslips were introduced in 2018. A selection of pollinator species were introduced as plug plants and bulbs (Snakes Head Fritillaries) in January 2019. The MWVG continues management of re-emerging Brambles, and a highly floriferous rough grassland with many ant hills now predominates.

Valley Heights Meadow is a small triangular area that is recalled by some as being relatively species-rich grassland in previous years. This are does not feature on the BCC mowing schedule and therefore was not mown for a number of years prior to 2018. This lack of mowing encouraged the growth of course grasses, ruderal vegetation and developing scrub. A single autumn cut mowing regime was introduced in autumn 2018, with the arising being raked away by hand. Wildflower seeds and plug plants were sown and planted respectively during the winter of 2018/19. The summer of 2019 saw a proliferation of wildflowers, especially 'arable' related ones. The area is now mown once a year, in autumn, and raked clear. As of 2002, annual wildflowers are less abundant, but meadow grassland species are taking hold.

3.3 Manor Woods Orchard

Manor Woods Orchard is situated to the northeast of Manor Woods Valley. It is not within the LNR, bit does form part of the Malago Valley Site of Nature

Conservation Interest (SNCI) and is within the Bishopsworth and Malago Conservation Area. It contains of number of mature apple and pear trees. By 2016 the area had become totally overgrown with Brambles, such that it was no longer possible to access any of the fruit trees. Bramble clearance re-commenced in 2016, under the auspice of MVCG.



Area defined as Manor Woods Orchard

As the Brambles were cut-back, the extent of Manor Woods Orchard started to be revealed and relatively informal plans made for its future management. In the summer of 2018, a Management Statement was prepared. This document laid out the background to Manor Woods Orchard, its current status, aims and management, and plans for future management. This all-encompassing Management Plan, which goes in to greater detail with regards to management and monitoring practices and protocols to be undertaken in Manor Woods Orchard supersedes the earlier dedicated orchard one.

Manor Woods Orchard is owned by the estates division of BCC, with who management responsibility ultimately rests; however, most day-to-day conservation related works on site are carried out by the MWVG.

Following the cessation of regular mowing by BCC in the mid 2000's, the whole orchard area rapidly became impenetrable due to dense Brambles. The fruit trees became largely hidden by large Elder shrubs, particularly in the northern third of the orchard. Management resumed in 2016 and Elders that were adversely affecting fruit trees were removed during the autumn of 2018.

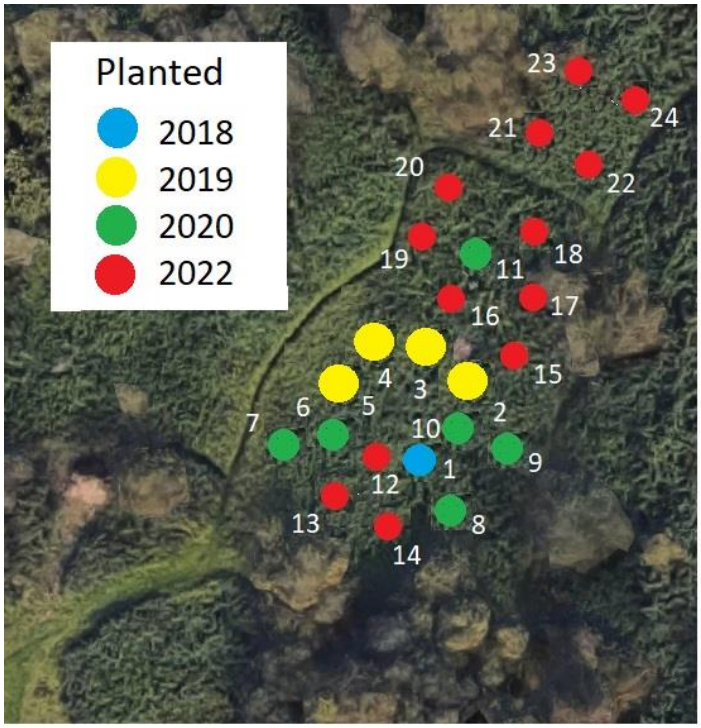
A small wild Prunus (gage) tree, originating from suckers growing on the northwest edge of the Wildflower Meadow was planted in spring 2018.

The main reason for carrying out management work in Manor Woods Orchard is to improve its biodiversity, with community related benefits being an important secondary function. Fruit production per-se is a tertiary gain.

There are 38 mature, tagged, trees, 32 apple and 6 pear, in the orchard. Their approximate locations have been plotted, their sizes measured and ages estimated. The trees have originated from seedlings; most, probably, from apple cores discarded in the final days of the brickwork's operation Fruit trees do not grow 'true to type' from seed. None of the existing mature apple and pear trees are of recognised varieties. They show no regular planting pattern (based on plotted locations) or planting date (based on truck size).

Native fruit trees e.g., apples, pears and plums (incl. gages and damsons) are host to a wide range of lichens, fungi and invertebrates, and their fruit is valuable for a range of invertebrates, birds and mammals; therefore, these trees themselves add biodiversity to an environment. As of 2022, the mature trees are in a generally good state; however, appropriate pruning is likely to be beneficial to the longevity of the trees.

To increase biological diversity and fruit production in Manor Woods Orchard, MWVG commenced a programme of tree planting in spring 2019, when 8 assorted heritage variety trees were planted in a circle in the centre of the area. In a relatively large area such as Manor Woods Orchard, relatively vigorous rootstocks were used as these will produce larger trees that would have a better chance of competing with ground vegetation and have a greater surface area on which to hosts lichens, fungi and invertebrates. Additional trees were planted in 2020, 2021 and 2022. The newly planted fruit trees will be pruned in order to maximise their yields.



#	Tree	Planted
1	Wild Prunus	2018
2	Lord Lambourne Pear	2019
3	Comice Pear	2019
4	Arthur Turner Pear	2019
5	Farleigh Damson	2019
6	Prolific Plum	2020
7	Egremont Russet Apple	2020
8	Victoria Plum	2020
9	James Grieve Apple	2020
10	Apple	2020
11	Cox Apple	2020
12	Czar Plum	2022
13	Old Golden Gage	2022
14	Apple	2022
15	Oullin's Gage	2022
16	Jonagold Apple	2022
17	Victoria Plum	2022
18	Worcster Permain Apple	2022
19	Golden Glow Apricot	2022
20	Prolific Plum	2022
21	Stella Cherry	2022
22	James Grieve Apple	2022
23	Damson	2022
24	Nottingham Medlar	2022

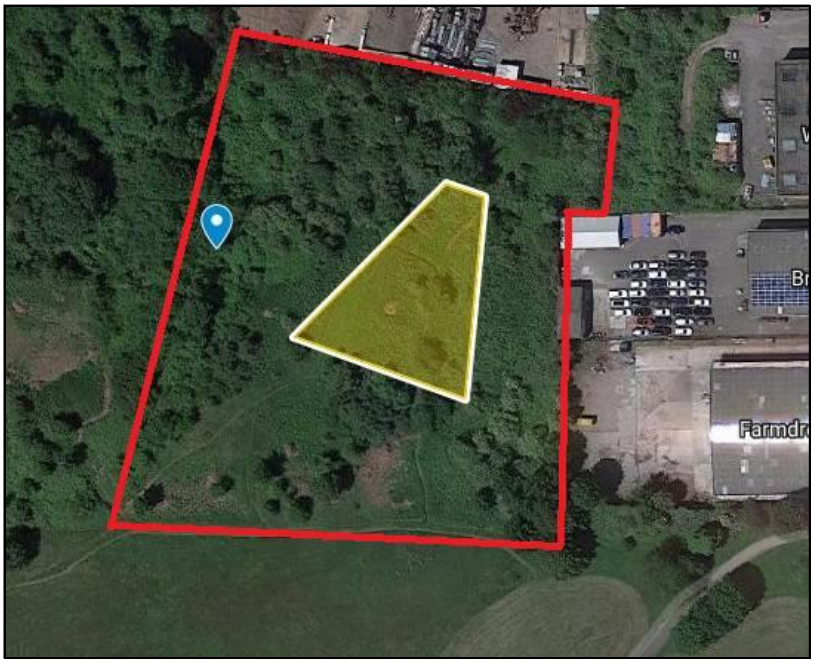
Dates of fruit tree planting in Manor Woods Orchard

Commencing in 2019, on or about 17th January, MWVG organises a wassailing in the orchard. This thanks the trees for their previous crop, awaken them for the new year and scares away evil spirits to ensure a good harvest in the coming year.

Each autumn, commencing in 2020, MWVG harvests quantities of apples from the mature trees. These are processed by the Cotswold Cider Company. In return the Group receives quantities of bottles apple juice, the majority of which is donated to a local foodbank. This may contribute in a small part, to the 'food systems' part of the Bristol Local Plan. The remainder of the juice is drunk during volunteering sessions within Manor Woods Valley. could contribute, in

The botanical diversity of ground flora in Manor Woods Orchard has been, as is being, improved by active management of Brambles and other scrub vegetation, and dense ruderal vegetation. Whilst the ecological benefits of these species are recognised, their potential re-domination of the site needs to be managed. Ample Brambles been preserved and are accessible on the edges of the orchard, and are present in abundance within the larger Manor Woods Valley area.

Botanical diversity has been further increased by seeding. Buglife supported this site as part of their 'Urban Buzz' campaign. The campaign supplied 1 kg of wildflower seed for sowing in spring 2018. They supplied a sixteen species Emorsgate EM10F Tussock mix. Areas of bare soil (2m²) were created and sown with the seeds. Wildflower seeds were also obtained from Avon Wildlife Trust and sown in the Orchard Triangle and Rabbit Field.



Potential seeding area defined by Urban Buzz (white outlined) within the orchard (red outlined)

A more diverse, lower and ‘open’ flora has encouraged a greater range and abundance of invertebrates, which in turn as a food source for a range of vertebrate species.

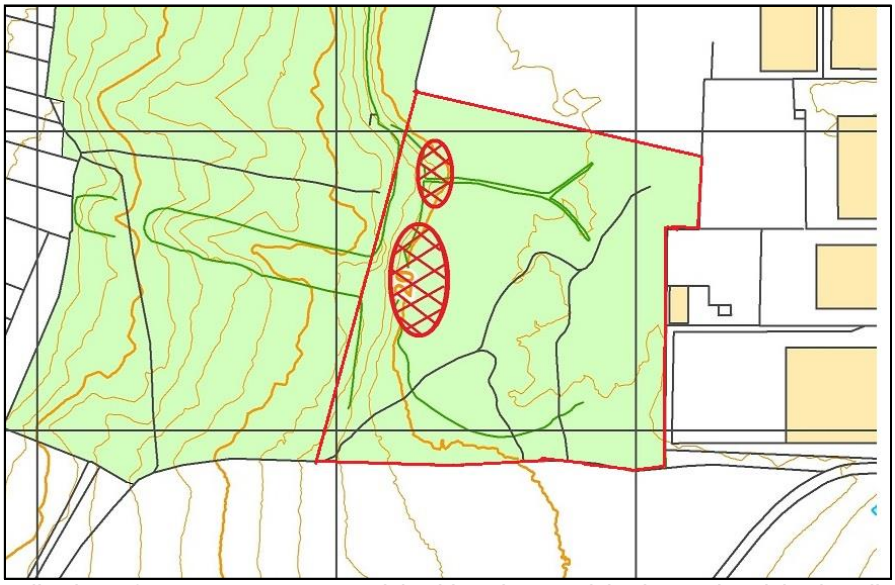
Manor Woods Orchard, including the Orchard Triangle and Sunny Bank, is home to a ‘exceptional’ population of Slow-worms, as determined by survey work carried by Just Ecology. The survey was carried out as part of a translocation exercise, when a number of Slow-worms were bright to the site from a nearby development site, during summer 2017. As part of the translocation exercise, two hibernacula were built, including one on the edge of Manor Woods Orchard. Management of the flora to achieve a habitat, based on a tussocky grassland, benefits Slow-worms and other wildlife species. An increased variety and abundance of birds and small mammals improves foraging opportunities for a range of predators including owls, raptors and mustelids.

Manor Woods Orchard is effectively a Community Orchard. A more attractive appearance and open feel has encouraged more use. A simple bench will be installed in the orchard, possible utilising timber sourced from the woodland in the LNR.

Manor Woods Orchard could be used as an occasional meeting place for the likes of school summer clubs, adult welfare organisations and local conservation groups, and as an educational facility for schools, colleges and universities.

The area around the Hawthorn ‘Rag Tree’ is maintained to facilitate easy access to it.

There are two relatively large patches of Japanese Knotweed in the northwest corner of the orchard. In the late spring of 2018, BCC commenced herbicide treatment of the two patches. MWVG conducts an annual survey of Japanese Knotweed and reports its findings to BCC..



Distribution of Japanese Knotweed (red hatch areas) in the orchard (red outline)

3.3 The Malago

One of the most important environmental features in Manor Woods Valley is the Malago. It brings important ecological variety and benefits to the area, being attractive to aquatic invertebrates and small fish, the birds that feed on these and as a haven for small numbers of over-wintering waterfowl.

The Malago was in a sorry state by the 1970's. It was seen as a suitable receptor for rubbish and heavier debris. Waste engine oil would be deposited in to the stream.

A major flood occurred in 1968. This caused widespread damage and destruction as water spilled out from the river banks, including the Malago. Around 3,000 properties were flooded. One man was swept away to his death in flood water at Parson Street, Bedminster. Following the Great Flood, a large amount of work was done to improve defences and prevent a similar event happening again. This included mechanisms to divert water and increase storm water storage, plus flood defence walls. All those measures have reduced the impact of river flooding.

An interceptor was constructed half way along the Malago in Manor Woods Valley. All of the stream's water is now diverted down a large 3.25m wide culvert and taken underground directly to the New Cut. Only a small amount of local drainage water leaves the Malago Valley at its northeast end, where it joins water from the Pigeon House Stream off-site. The associated works, competed in 1976, involved the canalisation of part of the Malago upstream of the interceptor and the construction of a dam to form a silt trap - The Pond.

The Pond fulfilled its function as a silt-trap admirably. It was dredging in the mid-1990s. By 1999 there were concerns that the pond was an unsightly mixture of silt, flotsam and garbage. The 2007 annual 'Amphibious Garbage Raid' revealed less rubbish in the stream than in some previous years; notably, for the first time since its creation in 1976, the pond was not identified as a separate entity in reports of that year.

In February 2018 a group of Bristol University undergraduates conducted surveys of the Malago within the LNR. They studied BOD (biological oxygen demand), turbidity, chlorophyll, pH, oxygen, conductivity, ammonia, nitrite, nitrate, phosphate, and microplastics within the watercourse. The students found that, in general, the water quality fell within Environment Agency standards, suggesting that the Malago's water quality is very good in terms of ammonia, nitrite, nitrate and phosphate concentration. Previous research, however, has suggested that the water quality may change with rainfall events as pollutants are flushed into the river, this may especially be the case for the Malago since the catchment is surrounded by allotments where fertilisers may be used. E-coli counts from Bristol City Council (2018) suggested that on

numerous occasions in the previous thirteen years; counts exceeded the Environment Agency's recommended 10,000 counts/litre.

There was, evidence of significant microplastic accumulation along the length of the stream, suggesting that microplastics were entering the river in Manor Woods. The students concluded that this is likely to have been due to the large quantity of plastic litter in the valley (this seems unlikely, with plastics being 'mashed-up' on roads upstream of the site being a more likely source).

Nitrite concentration increased in the sediment rich water before the dam, where there is a low oxygen supply. It was suggested that this increase is due to the conversion of nitrate to nitrite in lower oxygen conditions; however, this increase did not degrade the water quality significantly according to Environment Agency standards.

4) Next Steps

The first draft of this Management Plan was reviewed and agreed by all stakeholders.

It will be reviewed and updated regularly, with proposed actions being updated, actions taken recorded then deleted, and new actions described.

Manor Woods Valley Action Plan

Potential Events					
Objective	**Tasks**	**Resource**	**Funding Requirement**	**Time Frame**	**Measure of Success/Comment**
Owl Prowl	Contact Hawk and Owl Trust and arrange	MWVG	?		Owl Prowl taken place
Bat Walk	Contact Avon Bat Group and arrange	MWVG	?		Bat walk taken place
Fungi Foray	Establish who to contact and arrange	MWVG	?		
Picnic Day	Arrange, promote and manage	MWVG	None		Picnic Day completed
Contribute to Festival of Nature - Conduct a Bio-blitz	Research, arrange, promote and conduct Bio-blitz	MWVG	None		Contribution made in Summer 2020

Across MWV					
Objective	**Tasks**	**Resource**	**Funding Requirement**	**Time Frame**	**Measure of Success**
Work with local schools to promote and use MWV for educational purposes	Talk with local schools	MWVG	None	On-going	Contacts with Parsons Street and St Peters Schools already established. Contact(s) with Bedminster Down School desired.
Promote and use MWV for health benefit purposes e.g. Wellbeing Walks	Devise and promote walks	MWVG (CW)	None	On-going	Several walks already completed
Increase MWVG membership	Maintain FB page Engage with public in MWV	MWVG (PL-H/MG	None	On-going	Email address list is increasing
Advertise volunteering opportunities	Install posters before work sessions and put on FB	MWVG (MG/PL-H)	Low	On-going	Posters and FB are in use
Ensure that any planning applications appertaining to the MWV site are ‘captured’ and, if appropriate, vigorously contested.	Monitor BCC planning web site and local media	MWVG	None	On-going	No planning application that impacts on MWV is missed
Continue to improve the volunteer experience	Establish what other groups do and what can we do	MWVG	?Small	On-going	Volunteer experience has been improved, always more to do

Prevent expansion of Bramble scrub.	Tractor mounted flail cutting. Use of power tools and hand tool 'Bramble bashing' by volunteers	BCC/MWVG	Parks Budget/None	On-going	Scrub is under control.
Clear litter	Litter picking work parties, casual picking whilst doing other work. Issue litter pickers to public	MWVG	Low	On-going	Site is kept essential free of litter
Monitor and document progress of flora change.	Survey flora in detail	MWVG (PL-H/Students	None	On-going	Surveys conducted and reported
Survey invertebrates.	Survey inverts in detail. Specific group surveys e.g. B'flies, dragonflies, bees	Students/MWVG	None	On-going	Surveys conducted and reported
Monitor/census breeding and wintering birds.	Survey birds in detail.	MWVG (PL-H)/Students	None	On-going	Surveys conducted and reported
Survey mammals.	Survey mammals in detail.	MWVG (PL-H/Students	None	On-going	Surveys conducted and reported
Devise student projects	Identify questions to answer	MWVG/Students	None	On-going	Projects devised and agreed
Survey fungi & lichen.	Survey fungi and lichen in detail	Students/MWVG	None	Short term	Surveys conducted and reported

Make MWV entrances more accessible	Seek CIL funding	MWVG/BCC	High	Medium-term	Entrances improved
Install public artwork	Research, Commission/devise/ produce public artwork	MWVG	Medium-High	Long-term	Art works installed

Woodland					
Objective	**Tasks**	**Resource**	**Funding Requirement**	**Time Frame**	**Measure of Success**
Clear fly-tipping from southeast edge of Old Manor Wood	Work with BCC & Bristol Waste	BCC/(Bristol Waste)/MWVG	Third party budgets	Medium term	Waste cleared
Prevent further fly-tipping along southeast edge of Old Manor Wood	Work with partners/cameras/ leaflets/fences/gates	BCC/Bristol Waste/MWVG	Third party budgets	Medium term	Waste doesn't re-appear
Agree management priorities, methodologies and responsibilities for Old Manor Wood.	Determine possible management strategies, liaise with BCC/AWTFoA//users	MWVG/BCC	None	Medium term	Agreed management strategy is in place
Agree management priorities, methodologies and responsibilities for New Manor Wood, Allotment Wood, Pond Wood	Determine possible management strategies, liaise with BCC/AWT/FoA/users	MWVG/(BCC)	None	Medium term	Agreed management strategy is in place
Get Old Manor Wood designated as Ancient Woodland	Find out how to do/who to liaise with (?BCC, ?NE, ?MAGIC)	MWVG (PL-H)	None	Medium term	Manor Wood is shown as Ancient Woodland on MAGIC
Seek funding to renew the footpath through Old and New Manor Woods	Determine cost – seek and speak to contractors. Determine potential funders. Apply for funding.	MWVG	None	Medium term	Funding is identified and secured

Renew footpath through Old and New Manor Woods once funding acquired	Instruct contractors, monitor contractors	MWVG	High	Medium term	Footpath is renewed and opened

Orchard					
Objective	**Tasks**	**Resource**	**Funding Requirement**	**Time Frame**	**Measure of Success**
Manage Brambles and ruderals as necessary.	Cu-back as required	MWVG	None	On-going	Tussocky grassland and wildflowers growing
Wassailing event in the Orchard	Arrange annual wassail (music, activities, promotion)	MWVG	None	Annually	Event carried out each January
Apple Day in the Orchard	Arrange annual apple harvest day	MWVG	None	Annually	Event carried out each October
Improve and increase optimal reptile habitat	Clear encroaching Blackthorn scrub from Sunny Bank and manage Orchard Triangle through cut and carry.	MWVG	None	Annually	Bank significantly cleared of scrub
Control Japanese Knotweed	Monitor Japanese Knotweed and report back to BCC	MWVG	Parks Budget	Annually until control is achieved	No Japanese Knotweed re-growth is evident

Grasslands					
Objective	**Tasks**	**Resource**	**Funding Requirement**	**Time Frame**	**Measure of Success**
Ensure the Wildflower Meadow is cut annually for hay.	Contractors take hay from Wildflower Meadow	BCC	High	On-going	Hay-cut taken each year
Ensure other wildflower areas are cut at least annually	Cut smaller wildflower meadows using power/hand tools	MWVG	None	On-going	Annual cut takes place and arisings removed
Mow amenity grassland according to programme	BCC contractors/staff adhere to mowing schedule.	BCC	High (Parks budget)	On-going	Amenity grass regularly mown

The Malago					
Objective	**Tasks**	**Resource**	**Funding Requirement**	**Time Frame**	**Measure of Success**
Clear scrub from banks of Malago using tractor mounted flail cutting and use of power tools and hand tool 'Bramble bashing' by volunteers	BCC/MWVG/YR	Parks Budget/None	On-going	Area of scrub is reduced	Tractor mounted flail cutting. Use of power tools and hand tool 'Bramble bashing' by volunteers
Ensure that the Riverside Path remains passable	Cut back scrub as required	MWVG/YR	None	Ongoing	Path open to users at all times
Monitor/census aquatic flora and fauna in the middle-Malago.	Survey aquatic flora and fauna in detail. Specific group surveys e.g. aquatic inverts, dragonflies, fish, wintering birds	Students	None	Autumn 2019 – ongoing	Surveys conducted and reported