A Phase One and National Vegetation Classification assessment to determine the age and vegetation structure of the new woodland present at the site of the historical war allotments of Manor Wood Valley, Bishopsworth.

June 2018

(Google Maps, 2018)

CONTENTS

0.5 ACKNOWLEDGEMENTS

The assessment undertaken for this report would like to acknowledge the input of the Malago Valley Conservation Group; particularly Martin Grant and Peter Hancocks for their support during this survey.

1.0 INTRODUCTION

1.1 Statement of Intent

As part of conservation efforts being put into place by the Malago Valley Conservation Group, this assessment has been commissioned to specifically address the data deficient historical war allotments present at the north-western edge of Manor Woods Valley.

1.2 Rationale/ Survey Questions

An initial site visit was conducted with a member of the Malago Valley Conservation Group. From this visit it was decided an assessment of the allotments would be key, as for much of the manor wood reserve there is a lack of any data recordings. The rationale for this assessment then became one of establishing a baseline understanding of the species and habitat types present at Manor Woods Valley. Asking the questions, what are the dominant species? And can the age of the established woodland be estimated through the use of national vegetation classification & phase one habitat surveying? (For site maps and illustrations please see Appendix I).

2.0 BACKGROUND

2.1 Site History

Manor Woods Valley has a long and complex history. The site is mentioned in the Domesday manuscript of 1086 and also has been used historically as part of the war effort in that it was part of the 'Dig for Victory' campaign which saw the topography change drastically with the creation of allotments for food production. This coupled with increased demand for housing has seen the valley decrease in size over recorded history (Hancocks, P, 2018). At present the site is mainly used in a recreational sense, it is utilised by walkers both human and dog, pathways have been established throughout the valley to minimize the

impact of foot traffic and many of the conservation actions taken here are enacted by a local friends of group, whilst some of the bigger tasks are carried out by Bristol City Council.

3.0 METHODOLOGY

3.1 Techniques

For the purpose of this assessment, a phase one habitat survey has been combined with a NVC survey to establish a baseline dataset for the Manor Woods Valley historical allotment site from which the type of habitat can be classified.

3.2 *Phase one habitat survey.*

A standard phase one survey method was adhered to as described in the 2010 revision of the Nature Conservancy Councils guide circa 1990. (Joint Nature Conservation Committee, 2010) A fairly broad brush approach has been taken here, identifying the main types of habitat from visible dominant species. Target notes have been utilised to define key/notable habitat features.

3.3 *National Vegetation Classification survey.*

A standard NVC method was adhered to as described in the National Vegetation Classification User Handbook (Rodwell, 2006). Records of percentage cover were taken for the dominant flora species at defined spatial integers. Excluded from this survey was the identification of bryophytes and lichens.

3.4

The standardised methods for both techniques have been adhered to for the purpose of consistency ensuring that any future work is/can be fit alongside the data from this report. Data from the NVC survey was analysed using TableFit ecological software (Centre for Ecology and Hydrology, 2016).

4.0 RESULTS

4.1 Phase one habitat survey map

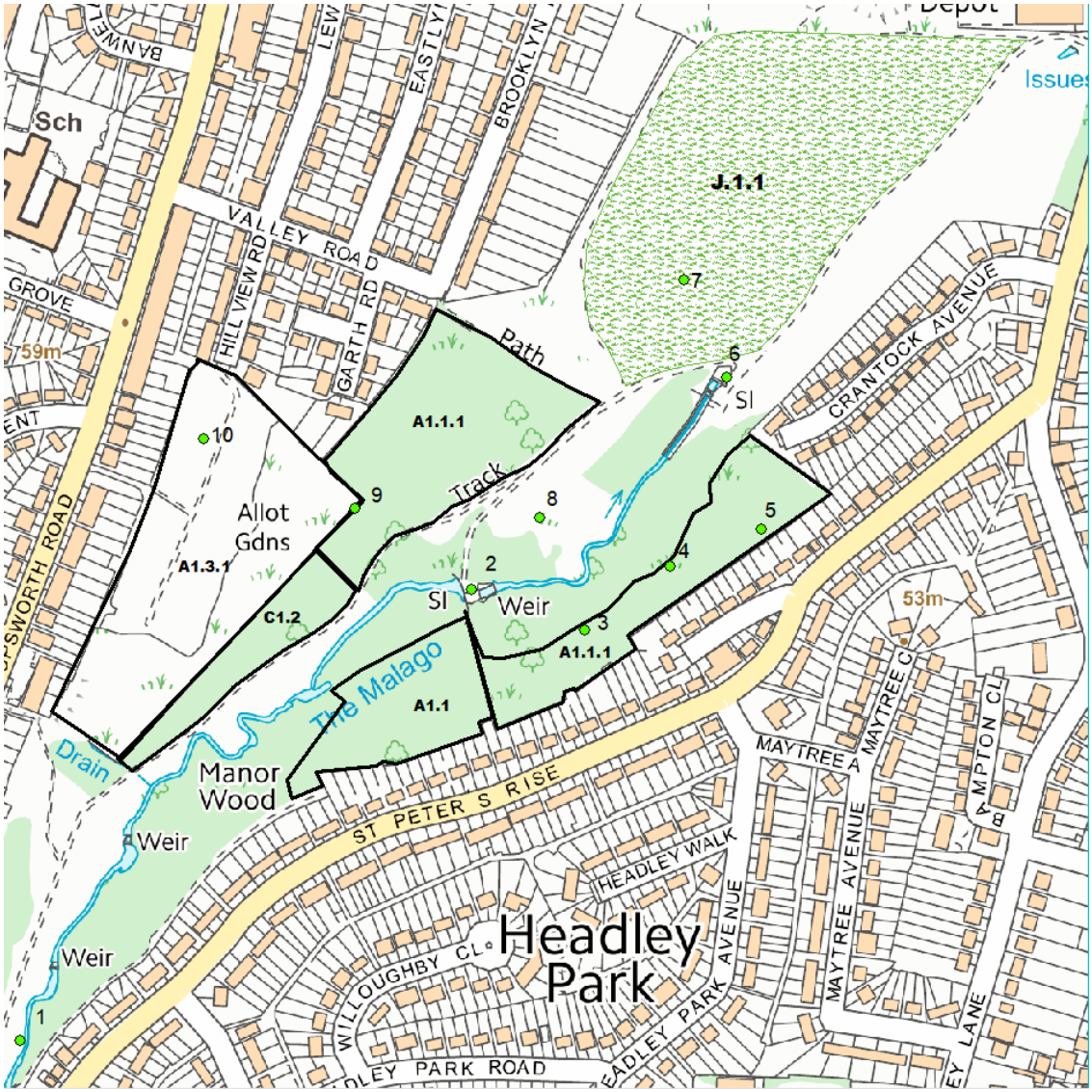

Figure One: Phase one survey map of Manor Wood

Target Notes: 1. Fly tipping evidence present in river. 2. Soft Mud/ Silt Accumulation. 3. Coppicing of Hazel and Selective felling of trees to create open spaces in the canopy & creation of habitat for insects via dead hedges. 4. Species of currants/fern present which are absent at site entrance 5. Evidence of a younger woodland becomes apparent as you move through the site. 6. Artificial river intercept to prevent flooding. 7. Amenity grassland, improved for agriculture. Seeded as a hay meadow.

8. Bracken has overgrown and dominates the woodland areas along the pathway.

9. Bracken covers much of the allotment border and has claimed a substantial amount of ground cover.

10. Site of historical war allotments.

4.2 TableFit Analysis

Habitat Code	Designation	Community Percentage Match

W 8E	*Geranium robertianum* sub-community	65
W 8F	*Allium ursinum* sub-community	63
W 10E	*Acer pseudoplatanus – Oxalis acetosella* sub-community	48
W 12A	*Fagus sylvatica – Mercurialis perennis* Woodland	42

Table one: TableFit Analysis of NVC data.

5.0 OBSERVATIONS

5.1 Noteworthy habitat features

It should be noted that at the time of survey access to the allotments was restricted mostly to openings that have been cut/placed into the woodland. The woodland is situated on a gradual upward incline, one result of which is the vegetation is segregated into visible 'layers'. Foremost, nearer to the public throughway, a dense layer of bracken restricts access to much of the woodland, into which openings give access to the vegetation behind. Upon entry to the allotments site, a distinct smell of garlic is noticeable, a characteristic of ramsons found in this initial layer. Moving further into the allotments, there are patches of bare ground sparsely distributed across the area as well as distinctive ferns such as the broad buckler/ hartstongue and male fern being found as part of the ground cover species. As for the tree species in the survey area, for the most part these appear relativity young in age. A distinct lack of veteran trees/stumps i.e. oak, and evidence of early stage colonization from species such as field and sycamore maples, ash and elm suggest that the woodland itself is arguably in early development stages. (For a complete list of Identified species please see Appendix I)

6.0 DISCUSSION

6.1 NVC and Phase One Results

For the purpose of this assessment the phase one habitat survey was used to give an overview regarding the state of Manor Wood itself as a whole and to identify any obvious causes for concern. The site faces a number of threats, namely pollution; fly tipping, plastic

dumping (especially at the site of the intercept) and dog fowling are evident throughout the site with evidence to suggest this is having an effect on the composition of the soils in the valley with increasing levels of micro plastic in the stream (Taylor, *et al.,* 2018). It is clear that Manor Wood is subject to paradoxical levels of management with some areas seeing regular interventions e.g. the amenity grassland at the site boundary which is cut regularly for hay and others such as the allotments which bracken has been allowed to claim expanses of the woodland edge through non-management. The results of this survey classify the wood under semi-improved either A1.1/1.1.1/1.3.1 or J.1.1/1.2 in relation to the amenity grassland The area has seen improvements and plantations take place over its history and therefore can be classified as semi-natural woodland. (Joint Nature Conservation Committee, 2010). Results from the NVC survey indicate several potential communities with acceptable levels of fitness (see table one). TableFit analysis suggests that the habitat type with the best level of fit being W8E (*Fraxinus excelsio - Acer campestre Mercurialis* perennis) with a sub community of *Geranium robertianum.* Hall *et al.,* (2004) describe W8 woodland as covering most of Southern Britain, with the sub community of E being distributed across parts of the south west which Manor Woods falls within. The sub communities in this designation are classified by the composition of the tree and shrub layer with one of the defining characteristics of W8E being *Acer campestre* (Whitbread and Kirby, 1992) which was found to be abundant throughout this 'new woodland'. Manor Woods has been subject to countless selection pressures over recent history, the demand for housing has seen the frequency of urban areas, occurrence of infrastructure (e.g. roads, buildings and artificial structures) and disturbance of land become common practice with expanses of this woodland being encroached on year after year. (Please see Appendix I for historical land map) Knowing that in living history the site had been used as part of the 'dig for victory' campaign, it is therefore evident that significant disturbance for cultivation and agricultural use has taken place (Hancocks, P, 2018).

The factors mentioned here are all known to be a cause in the decline of ancient woodland (Hill *et al.,* 2005). This would fit with the theory that much of manor wood can no longer be described as ancient woodland, with this in Great Britain being acknowledged as continuous cover since 1600 (Goldberg, *et al.,* 2007), it is in fact much more likely that the woodland observed at the north-western boundary of the site is substantially younger in its

development given the structure, absence of veteran trees and the known history of the site.

Whilst not included in the survey of the allotments, evidence of a much older strip of woodland can been seen at the site entrance, the structure here was vastly different. Standard and coppice management is evident throughout and the land has steep embankments which may have prevented some agricultural use that the allotment site was subject to. A number of veteran and dead trees can also be found here which suggests the woodland has characteristics of ancient woodland. This strip of woodland may provide refuge and habitat for a number of characteristic species i.e. Lichens that would otherwise not be able to survive (Peterken, G.F, 1983). Interestingly throughout the North West woodland (allotments) there were a number of species which detest disturbance, e.g. Buckler/Harts-tongue fern. Certain species can be used to determine if a site has been continuous woodland for a pre-determined length of time (Webb and Goodenough, 2018). The presence of these species within the allotments fits with the 'abandonment' timescale post world war, and indicates that the woodland has been relatively undisturbed for a number of years. In relation to the initial research question, the communities of plants found at the allotment site coupled with the fact that the 'new woodland' only started to appear in maps from 1977 onwards (Hancocks, P, 2018) shortly after the allotments were abandoned, it would be reasonable to suggest that this woodland can be estimated to be around 40-60 years old. It should however be considered that this may be an underestimation, as in terms of cartography the woodland would only have been documented once it started to become pronounced and not necessarily picked up during its initial development.

7.0 SUMMARY/ CONCLUDING REMARKS

7.1 Key Findings

- NVC community with the best level of fit was W8E
- Many relics of ancient woodland can be found at the allotment site
- The dominant species found at the site of survey were;

  Acer campestre, Acer pseudoplatanus, Asplenium scolopendrium, Corylus avellana, Dryopteris dilatata, Fraxinus excelsior Hedera helix, Ulmus minor.

- Absence of veteran trees/stumps and evidence of early stage colonization by a variety of species indicate the woodland itself is in an early development period.
- Management of Bracken along the edges of woodland needs to be completed as soon as possible as to avoid having to reclaim the land at cost in the future.

7.2 Conclusion

This survey represents a baseline dataset for the new woodland which has developed on the site of the historic war allotments. The land has been subject to high levels of disturbance in the past followed by a period of time where it has abandoned and thus has been reclaimed by nature. This report provides evidence which supports the theory that this is a developing woodland, its unique characteristics and diverse range of floral species found in this woodland have the potential to provide suitable habitat for many species of invertebrates, small mammals and birds. Manor wood itself may also possess the ability to act as a stepping stone/ wildlife corridor for species dispersing through the area as it provides connectivity to other green spaces around it. Future studies will need to be undertaken to fully understand the potential of Manor Wood as part of an ecological network, and long term monitoring procedures should be established to monitor spatial/diversity trends for the foreseeable future.

8.0 RECCOMENDATIONS

8.1 Looking forward

- At the time of this assessment, invertebrate/mammal species were omitted from the study; perhaps a future study could look into the species diversity to identify key units within the valley.

- Bryophytes and Lichens were also omitted from this NVC, many of which can be indicators of ancient woodland. A future study could look into the diversity/structure of these to further assess woodland age within the valley.
- Where access permits; further NVC assessment should be carried out within the allotment sites to better understand the woodland structure/ functions.
- Establishment of a centralized database would serve as a valuable means of keeping records of the species diversity within the valley; allowing data from any future studies to be fit alongside a historical data to detect spatial/temporal changes in the woodland structure.
- The Manor Woods reserve would benefit from an established management plan; allowing conservation efforts/resources to be guided/efficiently managed. This should be considered as a priority and ensure it shares a collective vision for the site.

9.0 REFERENCES

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2.6118462,1239m/data=!3m1!1e3!4m5!3m4!1s0x48718c1608eef9f7:0xad902055c790e039!8m2!3d51.4244217!4d-2.6083049 [accessed on 27 June 2018

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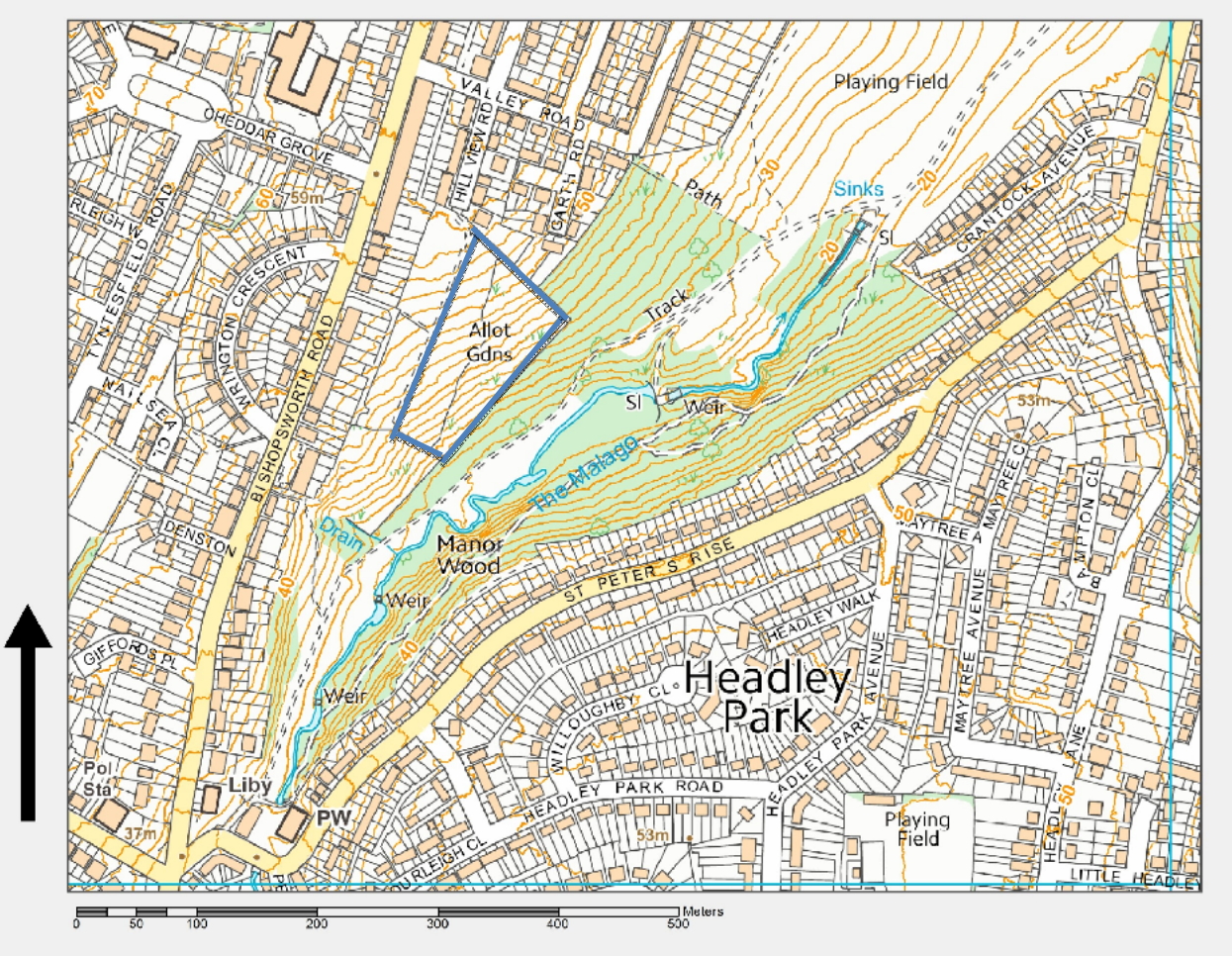
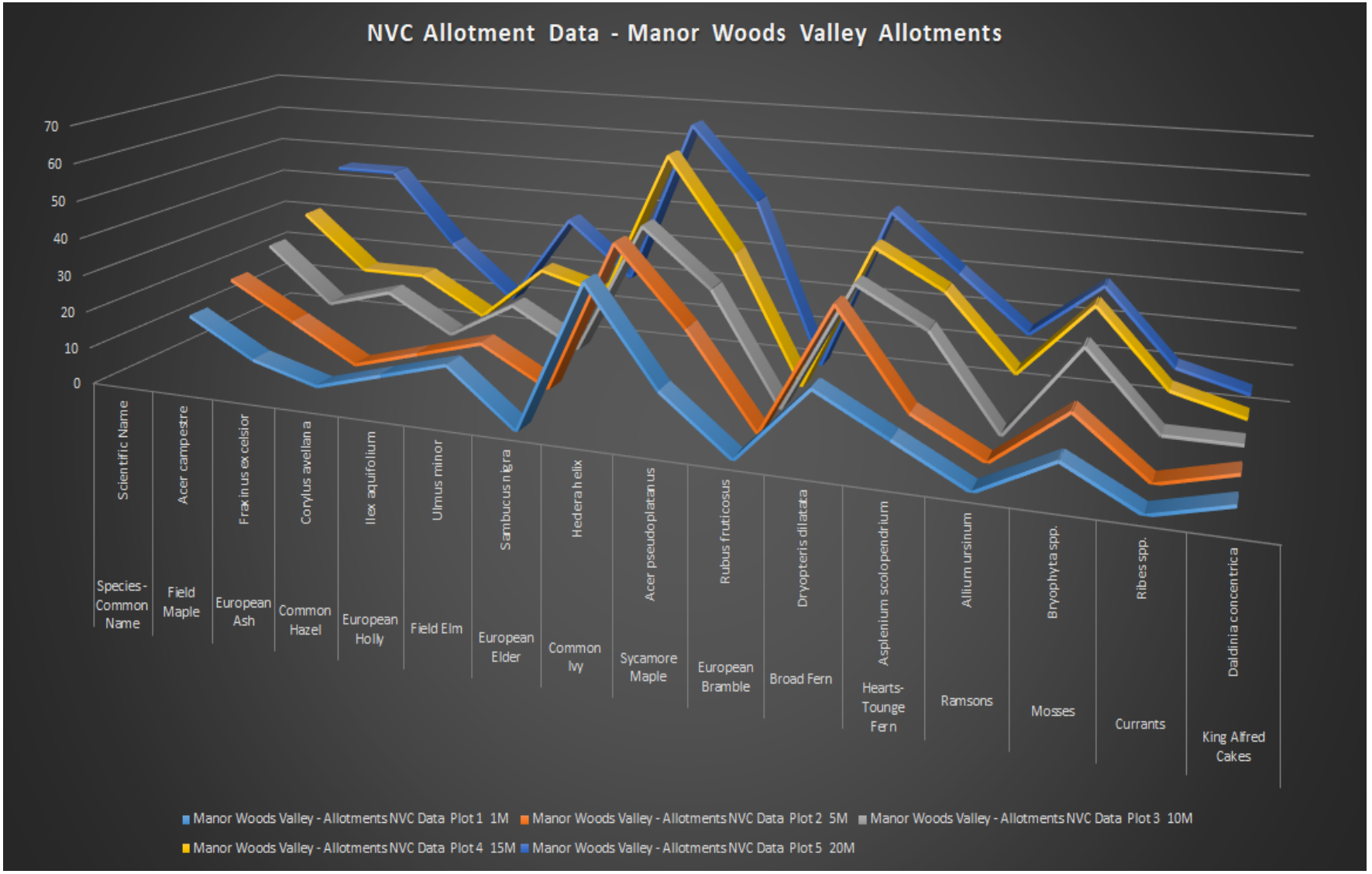
Appendix I

Manor Woods Valley (2018) with NVC site identified (provided by The Malago Conservation Group, adapted from University of Bristol, Geology Project)



Results – NVC Data Plot 2018



Identified Species List – NVC survey 2018

Manor Woods Valley - Allotments NVC Data	
Area	
Species - Common Name	**Scientific Name**
Field Maple	*Acer campestre*
European Ash	*Fraxinus excelsior*
Common Hazel	*Corylus avellana*
European Holly	*Ilex aquifolium*
Field Elm	*Ulmus minor*
European Elder	*Sambucus nigra*
Common Ivy	*Hedera helix*
Sycamore Maple	Acer pseudoplatanus
European Bramble	*Rubus fruticosus*
Broad Fern	*Dryopteris dilatata*
Hearts-Tounge Fern	*Asplenium scolopendrium*
Ramsons	*Allium ursinum*
Mosses	*Bryophyta spp.*
Currants	*Ribes spp.*
King Alfred Cakes	*Daldinia concentrica*

Manor Woods Valley Allotment Species

Sample Acer cam Parameters = Nobryo Cover% Sp & c
*** Name not in dictionary *** bryo spp.
*** Name not in dictionary *** ribe spp.
*** Name not in dictionary *** dald conc
G1.A2 W 8f 51 | 82 74 41 42| Fra exc-Ace cam-Mer per Allium ursinum
G1.A2 W 8e 51 | 75 74 39 57| Fra exc-Ace cam-Mer per Geranium robert
G1.A11 W10e 43 | 69 61 40 46| Que rob-Pte aqu-Rub fru Ace pse-Oxa ace
G1.632 W12a 42 | 71 58 35 48| Fagus syl-Merc per wood Mercur perennis
G1.A2 W 8 39 | 64 66 31 46| Fra exc-Ace cam-Mer per (subcomms a-d)
F3.11212 W21c 35 | 66 33 63 35| Crat mono-Hedera scrub Brach sylvatic
E5 OV27d 34 | 73 46 41 27| Chamerion tall herb Ace pse-Sam nig
F3.11212 W21b 33 | 54 47 38 46| Crat mono-Hedera scrub Mercur perennis
G1.21 W 7c 32 | 53 60 24 61| Aln glu-Fra exc-Lys nem Descham cespit
G1.A11 W10 32 | 56 44 41 37| Que rob-Pte aqu-Rub fru

Sample Acer cam Parameters = Nobryo Cover% Sp & c
G1.A2 W 8e 55 | 75 74 49 59| Fra exc-Ace cam-Mer per Geranium robert
G1.A2 W 8f 51 | 82 74 41 41| Fra exc-Ace cam-Mer per Allium ursinum
G1.A11 W10e 45 | 69 61 40 52| Que rob-Pte aqu-Rub fru Ace pse-Oxa ace
G1.632 W12a 42 | 71 58 35 48| Fagus syl-Merc per wood Mercur perennis
G1.A2 W 8 40 | 64 66 35 45| Fra exc-Ace cam-Mer per (subcomms a-d)
E5 OV27d 37 | 73 46 41 36| Chamerion tall herb Ace pse-Sam nig
F3.11212 W21c 34 | 66 33 65 31| Crat mono-Hedera scrub Brach sylvatic
F3.11212 W21b 33 | 54 47 39 47| Crat mono-Hedera scrub Mercur perennis
G1.21 W 7c 33 | 53 60 24 65| Aln glu-Fra exc-Lys nem Descham cespit
G1.A11 W10 32 | 56 44 41 36| Que rob-Pte aqu-Rub fru

Sample Acer cam Parameters = Nobryo Cover% Sp & c
G1.A2 W 8e 57 | 75 74 54 59| Fra exc-Ace cam-Mer per Geranium robert
G1.A2 W 8f 56 | 82 74 53 44| Fra exc-Ace cam-Mer per Allium ursinum
G1.A11 W10e 48 | 69 61 50 51| Que rob-Pte aqu-Rub fru Ace pse-Oxa ace
G1.A2 W 8 45 | 64 66 46 47| Fra exc-Ace cam-Mer per (subcomms a-d)
G1.632 W12a 42 | 71 58 35 45| Fagus syl-Merc per wood Mercur perennis
E5 OV27d 36 | 73 46 41 33| Chamerion tall herb Ace pse-Sam nig
G1.A11 W10 35 | 56 44 52 36| Que rob-Pte aqu-Rub fru
G1.21 W 7c 35 | 53 60 29 61| Aln glu-Fra exc-Lys nem Descham cespit
G1.A2 W 9a 34 | 37 55 48 56| Fra exc-Sor auc-Mer per Typical
G1.A11 W10c 34 | 64 44 40 38| Que rob-Pte aqu-Rub fru Hedera helix

Sample Acer cam Parameters = Nobryo Cover% Sp & c
G1.A2 W 8f 61 | 82 74 65 47| Fra exc-Ace cam-Mer per Allium ursinum
G1.A2 W 8e 59 | 75 74 59 59| Fra exc-Ace cam-Mer per Geranium robert
G1.A11 W10e 47 | 69 61 50 47| Que rob-Pte aqu-Rub fru Ace pse-Oxa ace
G1.A2 W 8 46 | 64 66 50 45| Fra exc-Ace cam-Mer per (subcomms a-d)
G1.632 W12a 41 | 71 58 35 44| Fagus syl-Merc per wood Mercur perennis
E5 OV27d 37 | 73 46 41 35| Chamerion tall herb Ace pse-Sam nig

G1.21 W 7c 34 | 53 60 29 56| Aln glu-Fra exc-Lys nem Descham cespit
G1.A11 W10c 34 | 64 44 40 35| Que rob-Pte aqu-Rub fru Hedera helix
G1.A11 W10 33 | 56 44 52 32| Que rob-Pte aqu-Rub fru
G1.A2 W 9a 33 | 37 55 48 51| Fra exc-Sor auc-Mer per Typical

Sample Acer cam Parameters = Nobryo Cover% Sp & c
G1.A2 W 8e 65 | 75 74 71 63| Fra exc-Ace cam-Mer per Geranium robert
G1.A2 W 8f 63 | 82 74 71 49| Fra exc-Ace cam-Mer per Allium ursinum
G1.A11 W10e 48 | 69 61 50 50| Que rob-Pte aqu-Rub fru Ace pse-Oxa ace
G1.A2 W 8 48 | 64 66 54 48| Fra exc-Ace cam-Mer per (subcomms a-d)
G1.632 W12a 42 | 71 58 35 47| Fagus syl-Merc per wood Mercur perennis
E5 OV27d 37 | 73 46 41 38| Chamerion tall herb Ace pse-Sam nig
G1.A2 W 8d 36 | 56 47 48 41| Fra exc-Ace cam-Mer per Hedera helix
G1.A2 W 8g 35 | 36 55 62 42| Fra exc-Ace cam-Mer per Teucrium scorod
G1.A2 W 8a 35 | 49 52 52 37| Fra exc-Ace cam-Mer per Pri vul-Gle hed
G1.A2 W 9a 34 | 37 55 48 55| Fra exc-Sor auc-Mer per Typical

Manor Woods Valley - Allotments NVC Data						
		Plot 1	**Plot 2**	**Plot 3**	**Plot 4**	**Plot 5**
Area		*1M*	*5M*	*10M*	*15M*	*20M*
Species - Common Name	**Scientific Name**					
Field Maple	*Acer campestre*	20	25	30	35	45
European Ash	*Fraxinus excelsior*	10	15	15	20	45
Common Hazel	*Corylus avellana*	5	5	20	20	25
European Holly	*Ilex aquifolium*	10	10	10	10	10
Field Elm	*Ulmus minor*	15	15	20	25	35
European Elder	*Sambucus nigra*	0	5	10	20	20
Common Ivy	*Hedera helix*	40	45	45	60	65
Sycamore Maple	Acer pseudoplatanus	15	25	30	35	45
European Bramble	*Rubus fruticosus*	0	0	0	0	0
Broad Fern	*Dryopteris dilatata*	20	35	35	40	45
Hearts-Tounge Fern	*Asplenium scolopendrium*	10	10	25	30	30
Ramsons	*Allium ursinum*	0	0	0	10	15
Mosses	*Bryophyta spp.*	10	15	25	30	30
Currants	*Ribes spp.*	0	0	5	10	10
King Alfred Cakes	*Daldinia concentrica*	5	5	5	5	5