THE TREE AND WOODLAND COMPANY

Adderbury Lakes

Adderbury Parish Council

Oxfordshire

Tree Survey Report

December 2020

TWC1300-R-001

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1.0 Introduction

1.1 Adderbury Lakes are owned and managed by Adderbury Parish Council and is a designated Local Nature Reserve. It consists of two interconnected lakes fed by local streams and springs that connect to Sor Brook to the South. The Lakes were created in the mid nineteenth century by the owner of Adderbury House which is situated at the main entrance to Lake Walk. The lakes formed part of an ornamental garden which include lakeside paths, small stone buildings (i.e. the Boathouse on the upper lake and Summerhouse next to the lower lake) and ornamental trees and shrubs.

1.2 We have been instructed by Adderbury Parish Council to undertake a tree survey at Adderbury Lakes. The principal aim of the survey is to satisfy the owner's legal 'duty of care' to ensure trees are properly managed and that people and property are not exposed to unreasonable levels of risk from failure of trees.

1.3 In addition to assessing tree risk, the survey recorded and mapped all trees at Adderbury Lakes, which included notable mature trees and numerous tree groups. This full survey provides suitable detail to enable a consistent approach for future surveys and can assist overall tree management planning for the future.

1.4 We understand that there is a balance to strike between satisfying legal obligations, minimising cost of work and preserving trees in the landscape. Our approach to tree hazard management fulfils these criteria and is based on the Quantified Tree Risk Assessment (QTRA) method which has been used as the framework for carrying out the tree hazard survey.

1.5 All trees and groups have been plotted on a location plan (Appendix 4; Drawing No. 1300-D-001) and are listed in the Tree and Group Survey Schedules (Appendix 2 & 3; 1300-S-001 & 002).

1.6 Remedial action is recommended for hazard trees, to bring the risk of harm or damage within acceptable limits. The remedial tree work recommendations are indicated in the survey schedule and summarised in Table 2 (Section 3). General tree management recommendations have also been made to aid long term management objectives relating to recreation, landscape, and nature conservation (Table 3. Section 3).

1.7 A re-inspection programme is recommended for the trees (Section 4.0).

2.0 Survey and Methodology

2.1 The inspection of the trees was undertaken over two days during October/November 2020 by Richard O'Shea who holds the formal qualification FdSc Arboriculture and the LANTRA Certificate in Professional Tree Inspection. Richard is also a licensed user of the QTRA system and a professional member of the Arboricultural Association.

2.2 Trees are inspected for potentially hazardous parts using 'VTA' (Visual Tree Assessment), a system devised by Mattheck & Breloer and subsequently adopted as the industry standard.

2.3 The method of risk assessment used is the Quantified Tree Risk Assessment (QTRA) system which applies established and accepted risk management principles to tree safety management. QTRA provides a framework for the assessment of three components of tree-failure risk:

- The Target (i.e. people, vehicles or buildings)
- The Probability of Failure of the hazard part
- The Impact Potential of the hazard part if it fails

2.4 By evaluating the target and trees as explained above, it is possible to calculate a risk of harm index for each hazard tree which can then be compared to advisory levels of risk acceptability (see Table 1 below). This approach enables the tree surveyor and owner/manager to make an informed decision on the need to carry out remedial work on the tree to minimise the likelihood of failure and of consequent harm being caused.

Risk Thresholds	Description	Action
	Unacceptable Risks will not ordinarily be tolerated	• Control the risk
1/1 000	**Unacceptable** (where imposed on others) Risks will not ordinarily be tolerated	• Control the risk • Review the risk
	Tolerable (by agreement) Risks may be tolerated if • those exposed to the risk accept it, or • the tree has exceptional value	• Control the risk unless there is broad stakeholder agreement to tolerate it, or the tree has exceptional value • Review the risk
1/10 000	**Tolerable** (where imposed on others) Risks are tolerable if ALARP	• Assess costs and benefits of risk control • Control the risk only where a significant benefit might be achieved at a reasonable cost • Review the risk
1/1 000 000	**Broadly Acceptable** Risk is already ALARP	• No action required currently • Review the risk

Table 1. Risk of Harm Advisory Thresholds – Informing Management Decisions

2.5 The 'Target Range' for the survey area was based on our assessment of occupancy of pedestrians within proximity of trees and Target Range 3 was mainly used to inform our survey. Although a Target Range is selected for each path/area/property, it may vary depending on the defective part of tree and its actual location in relation to the target.

2.6 For a full description of the QTRA methodology and criteria used please refer to Appendix 1.

2.7 All the recorded trees and groups have been given an identification reference T1-T67 and G1-G20 which are detailed in the survey schedules (Appendix 2 & 3) and shown on the location plan (Appendix 4). For further clarification on site, numbered metal tags have been affixed to trees with corresponding numbers. Groups have not been tagged but they should be straightforward to identify from the map and schedule information. If there is any doubt please clarify with us prior to the work.

3.0 Findings and Conclusions

3.1 A total of 67 individual trees (T1-T67) and 20 groups (G1-G20) have been recorded and mapped. The individual trees consist of notable mature landscape trees which include Oriental Plane, Beech, Ash, Sycamore, Alder, Cedar of Lebanon, Yew and Douglas Fir. Many of these trees date from the late nineteenth to early twentieth century, the oldest tree being an Oriental Plane (T22) which is estimated to be around 180-200 years old. Some of the other individual trees recorded are trees that require remedial work and are not necessarily notable mature trees. The tree groups make-up the remaining tree population which include mixed native and ornamental tree species along with broadleaved and evergreen understorey.

Hazard Tree Works

3.2 All hazard tree work recommendations are listed in the Survey Schedules (Appendix 2 & 3) which detail the work required and the priority for implementing it. Where further detailed inspection has been recommended to assess a specific defect (i.e. Aerial inspection, decay detection equipment) or due to survey restrictions (i.e. ivy, epicormic growth) a provisional QTRA risk of harm has been calculated. The QTRA risk of harm will need to be re-evaluated following the conclusions of the detailed inspection. Table 2. below provides a quick reference summary of the recommended hazard tree works required.

Table 2: Hazard tree work summary

Work item	Work Priority		
	High	Medium	Low
Remove/reduce defective branches and deadwood	-	G7	T9, T19, T28, T44
Fell/monolith	-	T67	T46
Crown reduction	-	T43, G12	-
Ivy removal	-	-	T33
Detailed decay detention test (Picus Tomograph, Resistograph)	-	T22	-

3.3 In summary there are 0 high priority works, 5 medium priority works and 6 low priority work recommendations.

3.4 The following information highlights the proposed timescale for carrying out the recommended remedial works.

Work priority

Urgent	Carry out work as soon as possible and prevent access to area
High	Carry out work within 3 months of the date of this report
Medium	Carry out work within 1 year of the date of this report
Low	Carry out work within 2-3 years of the date of this report

3.5 High priority works are for trees that present an Unacceptable Risk of Harm (RoH) of 1/10K or greater (Refer to Advisory Risk Thresholds) and must be carried out to reduce the RoH to a more Tolerable or Broadly Acceptable level.

3.6 Medium priority works are within the higher end of the Tolerable region of the Advisory Risk Thresholds i.e. 1/40K to 1/100K and should be carried to out to reduce the RoH to a lower Tolerable or Broadly Acceptable level.

3.7 Low priority works are due to their calculated risk of harm being at the lower end of the Tolerable region of the Advisory Risk Thresholds i.e. 1/300K – 1/1M and considered As Low As Reasonably Practicable (ALARP), or being Broadly Acceptable i.e. > 1/1M. Some of the work is considered to be relatively straightforward and at a low monetary cost (i.e. selective branch removal, deadwood removal, ivy severance) but some of the work will be more costly and challenging (i.e. felling, crown reduction). The decision to carry out the low priority work will be based on budget resource and consideration of the benefits of the risk control by the owner/manager. The arboriculturalist can assist in relation to specific works recommendations where requested.

General Management Works

3.8 In addition to the remedial tree hazard work we provide recommendations for general tree management which include works to individual trees and groups. The work for individual trees includes improving tree form or maintenance pruning, and work recommendations for groups include removal of self-sown regeneration, thinning and pruning to manage poor quality trees, and to improve canopy structure and biodiversity. Table 3. provides a quick reference summary of the recommended management works.

Table 3: General management work summary

Work item	Work Priority		
	High	Medium	Low
Trees	-	-	T10, T11, T12, T13, T25, T41, T42, T50, T51, T60, T61, T64
Groups	G2, G4, G7	G1, G3, G8, G13, G14, G16, G19	G5, G10, G17

Work priority

3.9 The following information highlights the proposed timescale for carrying out the general management work recommendations. The works have been broadly prioritised to assist in forward planning, but these may be altered to meet budgets, volunteer resource and other management objectives.

High Carry out work within 1-2 years.

Medium Carry out work within 3-4 years

Low Carry out work in 5+ years

3.10 To assist in budgeting and resource management, we have included an estimate of days to complete the work. For the tree surgery operations; the estimate is based on a two-person team For the smaller ground-based works; the estimate is based on a two-person landscape contractor team or a larger group of volunteers. The number of days required for the works is likely to be variable depending on whether landscape contractors or volunteers can carry out the work, but the estimate will hopefully provide a general guide to assist planning.

3.11 For detail of the work specifications for each Tree and Group and priority timescales refer to the schedules at Appendix 2 and 3.

3.12 All tree surgery works should be carried out in accordance with the British Standard 3998: 2010, 'Tree Work – Recommendations' or current recognised best practice in the industry.

3.13 All recommended hazard related works should be carried out within the timescales identified in the report. A written record should be kept of the survey work done and implementation of the recommended works.

3.14 We recommend that we are contacted by the tree/landscape contractor or the volunteer group to discuss any of the more complex works, and a site meeting can be arranged to go through the work specifications in more detail.

4.0 Re-inspection Programme

4.1 Trees should be subject to regular inspection but on a timescale that is reasonable and proportionate to the actual risk they pose. Based on our evaluation of the tree stock, potential targets and levels of usage, the following recommendations are made for the future inspection programme. To carry out a ground level inspection of all trees adjacent the surveyed routes every 2-3 years from the date of this report.

4.2 The recommended remedial works resulting from all inspections should be carried out within the timescales specified. A written record should be kept of the survey work done and implementation of the recommended works, including the outcome of aerial inspections and detailed decay detection tests.

4.3 In addition to the above, a systematic check should be carried out on priority access routes/areas following severe weather i.e. high winds, heavy rain or snow falls. A basic visual check can be undertaken by an member of the Parish Council and any defects reported to the Parish Council Clerk/Chairman. Defects likely to be encountered include broken and hanging branches, cracks, split forks, and unstable trees or parts of trees. Once reported, a qualified tree surgeon should be contacted to action any necessary work and/or further advice sought from a qualified arboriculturalist.

4.4 Where it is deemed suitable it would be beneficial to alternate winter and summer surveys as this will enable better assessment of structural condition and presence of annual fungal fruiting bodies during the autumn/winter months, and better assessment of physiological condition in the summer months. The arboriculturalist can provide further guidance where required.

4.5 It is recommended that a short follow up survey in conducted in the late spring/early summer 2021 to gain better access to groups G9 and G17 and to view the canopy health of trees.

4.6 Tree pests and diseases are part of a balanced ecosystem and dead, dying, and diseased wood is a natural process providing an important contribution to habitat biodiversity. However, in recent years there have been an increasing number of new and serious pests and diseases affecting tree populations across the UK, and regular monitoring is essential to check for their presence. Chalara dieback of Ash, Acute/Chronic Oak Decline, *Dothistroma* needle blight, Horse Chestnut Bleeding Canker and *Phytophthora kernoviae* and *ramorum*, are now widely established. Ash trees with symptoms of Chalara Ash dieback have been observed during the survey which include branch dieback, diamond-shaped lesions, and necrosis of stalks with desiccation of leaflets.

4.7 These diseases can kill or weaken trees quite rapidly, and it is important that the current re-inspection programme continues to provide regular monitoring of pests and diseases to inform tree management decisions over the coming years. If members of the public or volunteers notice any rapid or irregular changes in tree health, such as unseasonal defoliation or leaf/needle discolouration it is recommended that it is reported to a qualified arboriculturist to provide management guidance.

4.8 The Forestry Commission website gives very useful information on symptoms of tree diseases and control measures, as well as Biosecurity guidelines (see www.forestry.gov.uk/biosecurity). It is essential that the correct procedures and control measures are followed if any significant diseases are found.

5.0 Report Limitations

5.1 Trees are dynamic living organisms, whose health and condition can be subject to rapid change, depending on a number of external and internal factors. The conclusions and recommendations contained in this report relate to the trees at the time of inspection. It should be noted that any tree, irrespective of its health or condition, can be subject to a major failure given sufficiently severe weather conditions.

5.2 This inspection procedure is of a preliminary nature and from ground level only, using binoculars, a sounding mallet, and a metal probe where necessary. No invasive tests were undertaken, and no trees were climbed. If further investigation is considered necessary (e.g. use of decay detection technology, aerial inspection), this is highlighted in the hazard tree survey schedule.

5.3 Actionable defects may have gone undetected where trees are heavily Ivy-clad, with dense epicormic growth, surrounded by impenetrable vegetation, or inaccessible due to adjacent features.

5.4 The scope of this survey is limited to trees within the area on drawing 1300-D-001. Any trees outside this area are not included within the scope of this report.

5.5 This survey is based on the Quantified Tree Risk Assessment system, and the aim is to bring the risk of harm posed by hazardous trees **within acceptable limits** in accordance with the Health and Safety Executive guidance on risks imposed on the public 'in the wider interest' (HSE 1996). Complete eradication of risk is therefore not the goal, as this would involve total removal of the mature tree population. This approach is in line with the legally established concept of the landowner's duty to take **reasonable** action to bring the risk of harm to within acceptable limits. See tables in Appendix 1 which illustrate the QTRA risk thresholds that are used to inform management decisions.

6.0 Statutory Obligations

Tree Preservation Orders [TPO's], Conversation Areas [CAs] and Felling Licences.

6.1 Works to trees which are covered by Tree Preservation Orders [TPOs] or are within a Conservation Area [CA] require permission or consent from the Local Planning Authority [LPA]. Consent for felling imminently dangerous trees is not required under the above legislations, however, before carrying out any works, it is strongly advised to explain the intended works to the Local Planning Authority (LPA) and to ascertain if any trees are protected. The removal of deadwood is exempt from 'The Town and Country Planning (Tree Preservation) Regulations 2012', but notice must be given to the LPA at least five working days prior to the date on which the works are to commence.

6.2 Adderbury Lakes is within Adderbury Conservation Area and any trees with a stem diameter of 75mm or more measured at 1.5m above ground level will be protected and permission will be required by the LPA prior to undertaking tree work. The LPA should be contacted to confirm whether there are any trees subject to a Tree Preservation Order.

6.3 The Forestry Authority should also be informed if more than 5 cubic metres of timber in any one calendar quarter is being felled. A felling license will normally be required in this situation.

Wildlife & Countryside Act 1981/Countryside and Rights of Way Act 2000

6.4 Trees are a potential habitat for nesting birds and roosting bats and it is a criminal offence under normal circumstances to disturb or destroy - whether intentional or unintentional - the nesting or roost sites of bats. They are afforded protection under the 'Wildlife & Countryside Act 1981' and the 'Conservation of Species and Habitats Regulations 2010'. Therefore, avoid carrying out significant tree works during the bird nesting season [March 1st to July 31st] and ensure that trees are professionally surveyed for signs of bat roosts and/or bat activity before starting any tree work.

APPENDIX 1

The QTRA System, Survey Criteria and Glossary of Terms

QTRA Survey Methodology

The Quantified Tree Risk Assessment system (QTRA) provides a framework for the assessment of three components of tree-failure risk:

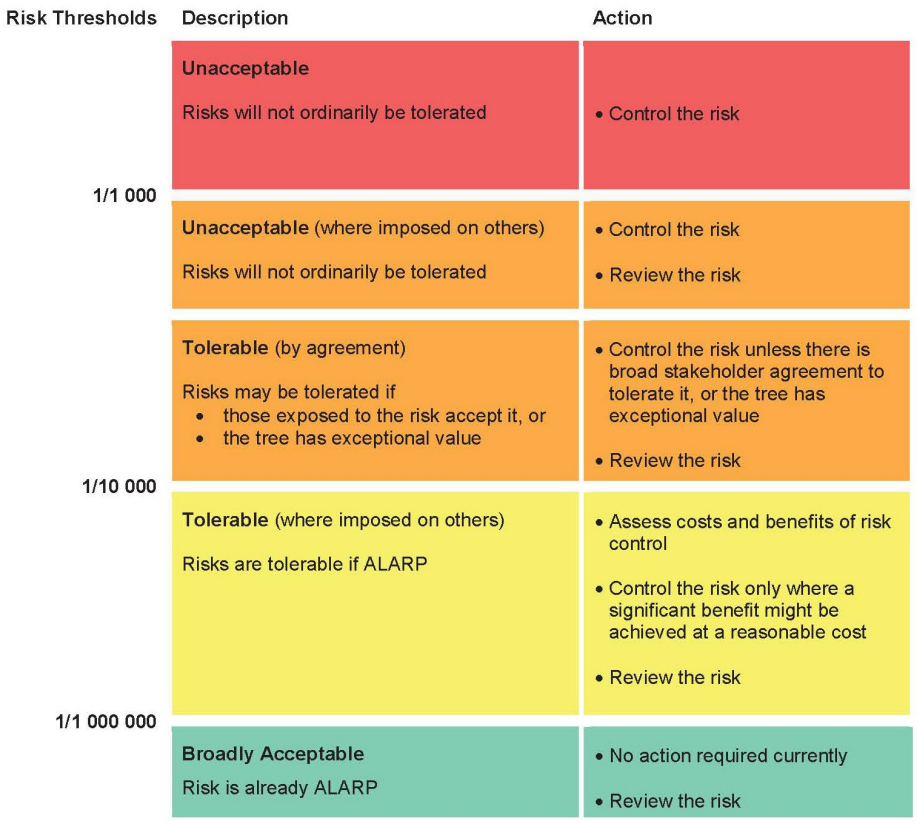
- Target Value
- Probability of Failure of hazardous trees
- Impact Potential of hazardous trees

For the purposes of this survey

- 'Target value': Target Value is normally based on the level of occupancy within the target area of a hazard tree (number of vehicles or pedestrians per hour averaged over a 24 hour period, i.e. total annual number of vehicles or pedestrians divided by total number of hours in the year; or monetary value of property) and ranges from Target 1 (Very High) to Target 6 (Very Low).
- To determine appropriate 'Target Ranges' for public highways the traffic data is sourced from the Department for Transport (DfT), which provides a basis for our understanding of the number of vehicles travelling along the surveyed routes. Where no data is available an estimation of the average daily traffic flow is based on our general understanding of the surrounding network and figures obtained from the DtF.
- Pedestrian usage of rights of way and public thorough fares are based on information supplied by the client in regards of visitor numbers and/or our experience of surveying similar pedestrian routes.
- Property value estimates are based on our general understanding of property value prices. When evaluating the exposure of property, the assessment considers the cost of repair or replacement that might result from failure of the tree.
- 'Probability of failure' (PoF) is worked out by evaluation of the hazard tree or part of the tree against a benchmark of either a non-compromised tree at PoF Range 7 (>1/1M), or a tree or branch that is certain to fail at PoF Range 1 (1/1 - >1/10) within the coming year. The assessor decides if the tree under assessment is 10, 100, 1000 etc. times more likely to fail than a non compromised tree or if it is 10, 100, 1000 etc times less likely to fail than a substantially compromised tree. Experienced and qualified Arboriculturalist need to make this decision.
- 'Impact potential' is based on the size and weight of the hazard tree or part of the tree. Since there is a direct relationship between stem diameter, mass and weight, the diameter of hazard trees or parts of them is used to categorise levels of impact potential. Other factors (e.g. level of decay and its effect on stem weight, or height from which a branch falls) can affect impact force. These are given significance only where they are considered particularly important in a given situation.

By evaluating the target and the trees as explained above, it is possible to calculate a risk of harm index for each hazard tree, and therefore make an informed decision on the need to carry out remedial work on the tree to minimise the likelihood of failure and of consequent harm being caused.

The table below provides advisory thresholds for the calculated risk of harm to inform tree management decisions.



Risk of Harm Advisory Thresholds – Informing Management Decisions

A probability of death or serious injury of 1/10,000 per annum is used as the limit of acceptable risk to the public at large, based on the Health and Safety Executive guidance (HSE 2001). Using the 1/10,000 limit, all risks with a probability (or Risk of Harm) exceeding 1/10,000 (e.g. 1/5,000) are therefore unacceptable and require remedial action to reduce the risk to below the 1/10,000 level.

If the Risk of Harm is less than 1/1 Million then it is considered broadly acceptable and no action is necessary until the next recommended inspection date. If the Risk of Harm is between 1/10,000 and 1/1Million, there should be further evaluation of the risk to be reduced and the benefits and cost of implementing risk reduction. Where trees are within the upper part of the Tolerable Region (e.g.1/50,000 -1/100,000) and the Risk of Harm is likely to increase before the next inspection date it may be proportionate to carry out remedial work to reduce the risk of harm to lower more broadly acceptable levels.

Survey Criteria

These notes refer to the survey schedule headings in Appendix 2.

Tree Number The reference/tag number given to the tree.

Species The species of tree in English.

Age Class The age class of the tree, defined as Young (Y), Early-mature (EM), Middle-Mature (MM), Mature (M), Over-mature (OM).

DBH The measurement of stem diameter (mm).

Condn Condition of the above trees;

G =Good

F = Fair

P =Poor

D =Dead

Comments Comments on the significant defective part or parts of the tree.

Recommendations

Remedial work required on tree to bring the risk of harm within acceptable levels.

Target (range) The target range is from 1 – 6, reflecting the value of the target from 1 (very high) to 6 (very low).

Size (range) This figure is the probability of the hazard part causing harm on impact, and is based on the hazard part's size. It is expressed as a range from 1 (very high) to 4 (very low).

Probability of failure

The probability of failure of the hazard part is assessed by (Range) deciding if it is 10, 100, 1000 etc. times more likely to fail than a non-compromised tree or if it is 10, 100, 1000 etc times less likely to fail than a substantially compromised tree. The probability of failure is expressed as a range from 1 (very high) to 7 (very low).

Risk Index (Risk of Harm)

This is the risk or possibility of significant harm being caused by the hazard tree (or part of it). It is expressed as a probability fraction and calculated as:

Risk of Harm probability = Target value x Size of part x Probability of failure

Work Priority Our recommendation for the priority to implement the work is as follows:

Urgent Complete work as soon as possible and prevent access to target area.

High Complete work within 3 months of the date of this report

Medium Complete work within 1 year of the date of this report

Low Complete work within 2-3 years of the date of this report (prior to the next survey).

Glossary of Terms

Remove deadwood and defective limbs

- Remove or reduce specific deadwood and defective branches/stems detailed in the works recommendation. They should be removed using natural target pruning and the final cut should not exceed one-third of the parent stem or branch, unless specified. Where individual deadwood branches are not specified, deadwood above 50mm diameter and 1 metre in length should be reduced to stabilise.

Fell

- Fell to ground level. Fell the tree from the base or dismantle in sections according to site restrictions.

Monolith

- Reduce the tree to its main stem, removing all branches. The retention of the main stem can provide ecological benefits for a variety of habitat types. A natural fracture technique called a coronet cut can be used at the cut surfaces to mimic jagged edges characteristically seen on broken stems/ branches following storm damage.

Crown reduction

- Reduce the overall crown, or part of it specified in the work recommendations, by the specified % with reference to tree height/branch spread. A reduction should alleviate biomechanical stress by reducing leverage and/or the sail area. The main framework and shape of the crown should be retained and sufficient proportion of foliage to maintain tree vitality.

Crown lifting

- Prune to achieve a desired vertical clearance from above ground level. The removal of secondary branches should be preferred to the removal of primary branches to avoid the creation of seats of decay in the main stem.

Pollarding

- Initial pollarding should be carried out while a tree is establishing 50-200mm stem diameter at 2-3m height and a regular pollard cycle programmed. This involves the removal of the tree canopy back to the main stem or primary branches to create a suitable framework. Pollarding can be carried out to established maiden trees which can include the removal of the entire canopy in one operation or phased over several years. Species suitability and tree condition will be assessed in detail prior to
- Re-pollarding shall be defined as the removal of all new growth from the pollard head just above the previous pollard point. Where pollard heads have poor live tissue connection, the pruning cut should create a new pollard point immediately below into sound wood.

Aerial Inspection

- Trees that have potentially significant defects which cannot be adequately assessed from either ground level or visual means, e.g. extent of decay cavities or presence of a wood decay fungus, are recommended for an aerial inspection. A re-assessment of potential risk and a QTRA calculation can then be completed based on the results of the tests.

Sever Ivy

- Cut all Ivy stems on the tree trunk, to ensure the Ivy in the crown is killed and will gradually fall off. Alternatively remove ivy to a specific point i.e. stem or branch union.

Picus Tomograph

- The Picus® Sonic Tomography system uses low frequency sound waves to measure the density of the wood inside the tree. The data produced from twelve separate sensors is converted into a colour image showing the condition of the wood across the cross-section of the tree at the selected measurement height.

Resistograph

- The Resistograph® decay detection drill tests the strength of the wood by measuring its resistance to drilling, plotting the data as a trace onto a waxed paper or computer-generated graph.

Decompaction

- Tree root remediation work such as radial mulching, soil aeration and decompaction using a terravent or airspade techniques to loosen and aerate the soil within the rooting environment. The process improves soil drainage and soil aeration, reduce root impedance, and promotes soil fertility and tree health.

APPENDIX 2

Tree Survey Schedule

TWC1300-S-001

Adderbury Lakes - Tree Survey Schedule

Tree No	Species	Height	DBH	Structural Condition	Physiological Condition	Comments	Recommendations	Target Range	Size Range	PoF	Risk Index	Work Priority	Work days Estimated
1	Holly	5-10	250-500	Fair	Fair	Next to gate entrance. 3 stems from base, tight unions. Suppressed from yew. Crooked stems to south, past pruned with regeneration.	NWR						
2	Yew	5-10	500-750	Good	Good	One of 7 Yews that form linear group. Twin stemmed at 1m; 1x southern stem has biased crown to the south through the adjacent Holly crown. The other stem is upright and codominant.	NWR						
3	Yew	5-10	250-500	Good	Fair	North side of path, abutting stone wall. Crown lifted and associated deadwood stubs. Suppressed upper crown and minor deadwood. Basal wound with minor decay.	NWR						
4	Yew	11-15	500-750	Good	Good	Codominant from 2-3m. Old branch failure wound mid stem. Past crown lifted, minor stubs and minor old branch failure wounds.	NWR						
5	Yew	11-15	250-500	Good	Good/Fair	Single stem, crown biased south east. Minor surface root damage. Slight lean south. Crown lifted with minor stubs.	NWR						
6	Yew	11-15	500-750	Good	Good/Fair	Forks at 1.5m, minor included union and 1m long conjoined seam running down between the two stems. Old deadwood stub at basal union. Dominant southern stem.	NWR						
7	Yew	11-15	250-500	Fair	Fair	Crown branches from 2-3m, crooked upper crown suppressed from the east. Large old tear wound on south side. Minor deadwood and crossing branches. Low sub stem on path side with wound.	NWR						
8	Yew	11-15	500-750	Good/Fair	Good/Fair	Last tree in row. Stem lean east. Forks at 4m. Old crown lift wounds, stubs, crossing branches, minor deadwood and biased east.	NWR						
9	Beech	11-15	500-750	Fair	Good	Path edge. Forks at 2m with included union; moderate adaptive bulging below union. Low sub branch at 1m with included union. Crossing branches. Biased south.	Reduce sub stem to 3-4m height. Monitor main union. Consider removing T9 in long term in favour of T10.	3	2	5	<1/1M	L	0.5
10	Beech	11-15	250-500	Good	Good	North side of path. Single stem, drawn and slender form. Canopy overlaps with T9.	Consider removing T9 in long term in favour of T10.					L	1
11	Yew	5-10	500-750	Fair	Fair	Lost leader at 2-3m, wound and deadwood exposed. Squat spreading form and Ivy clad. Old tear wound on north side.	Sever Ivy.					L	0.25

Adderbury Lakes - Tree Survey Schedule

Tree No	Species	Height	DBH	Structural Condition	Physiological Condition	Comments	Recommendations	Target Range	Size Range	PoF	Risk Index	Work Priority	Work days Estimated
12	Holly	11-15	250-500	Good/Fair	Good/Fair	5 basal stems with good unions, 1 minor Inclusion. Drawn and slender stems and low canopy. Ivy clad.	Maintain pruning back of new growth from path edge.					L	0.25
13	Beech	11-15	500-750	Fair	Good	South side of path. Forks at 0.5m with included union. Upright stems, crossing branches and crown biased south. Crown lift wounds, surface roots along path edge. East crown growing into early mature Rowan.	Monitor included bark union. Prune back branches to provide clearance for Rowan to establish.	3	1	5	<1/1M	L	0.25
14	Beech	11-15	750-1000	Good/Fair	Good	Mature specimen standing behind the Ice House. Slight lean, crown biased east and some long limbs extending north. Crossing branches, minor deadwood, past branch failure wounds. Bat box.	NWR						
15	Sycamore	16-20	750-1000	Good	Good	1 of a stand of 5 mature Sycamore. Tall drawn form, forks in upper crown with slight bias north. Ivy clad low stem.	NWR						
16	Sycamore	16-20	750-1000	Good	Fair	Single stem, slight lean and crown biased south west. Ivy clad low stem and minor deadwood.	NWR						
17	Sycamore	16-20	500-750	Good	Good	Single stem, tall drawn form. Low cavity on west side at 2m. High crown and biased south.	NWR						
18	Sycamore	16-20	500-750	Good/Fair	Good/Fair	Path edge. Slight lean and crown biased south east over path. Forks in upper crown, past crown lifted and basal epicormics.	NWR						
19	Sycamore	20+	750-1000	Good	Good	North side of Path. Tall drawn form, forks at 8-10m. High crown, slight biased east. Moderate low crown deadwood.	Remove deadwood in low crown overhanging the path.	3	3	3	1/500k	L	0.5
20	Crack Willow	11-15	250-500	Fair	Fair	Lakeside tree at junction of paths. Slender stem, leans and crown biased east. Minor fractures and callus seams mid stem. Appears to have past leader failure at union.	NWR						
21	Yew	5-10	500-750	Good/Fair	Fair	Leaning out from bank towards the lake. Raised ground on upper side of lean; possibly previous rootplate movement. Old branch failure and pruning on lakeside. Thinning crown.	Monitor crown health						

Adderbury Lakes - Tree Survey Schedule

Tree No	Species	Height	DBH	Structural Condition	Physiological Condition	Comments	Recommendations	Target Range	Size Range	PoF	Risk Index	Work Priority	Work days Estimated
22	Oriental Plane	20+	1000+	Fair	Fair	Dominant landscape tree, codominant forks at 8m, sub branch at 5m on path side. Past crown lifted and crown reduced. Several wounds, woodpecker cavities and appears to be an active bee hive. Burred low stem and significant stem base decay, extensive decay from probing and lack of adaptive growth at stem base. Armillaria fungal fruit bodies at base. Tomograph undertaken in 2015 indicated extensive decay within central heartwood in the lower stem and subsequent 30% overall crown reduction was carried out. Crown health appears fair and stable.	Carry out Tomograph re-test and review crown health in summer 2021	3	1	3	1/40K	M	0.5
23	Yew	5-10	250-500	Good/Fair	Fair	Edge of lake, lean and crown biased east. Surface roots. 1 low limb extends towards the path. Understorey tree to T22.	NWR						
24	Sycamore	16-20	750-1000	Good/Fair	Fair	On lakeside bank near the Boathouse. Leaning out over the lake, crown biased east and low limbs overhang the water. Previous minor branch failures and pruning wounds. Moderate wound at base of long north east limb. Minor thinning internal crown.	NWR						
25	Yew	11-15	500-750	Good	Good	Single stem, good form. Minor deadwood. Past large pruning wound, low wounds south.	Crown lift small low branches overhanging the path.					L	0.25
26	Yew	11-15	500-750	Good	Good/Fair	Slight lean and crown biased north. Main leader appears to have old failure at 4-5m with regeneration. Low primary limb at 1.5m to the north. Past crown lift wounds, old dead stub and minor low deadwood.	NWR						
27	Yew	11-15	750-1000	Good/Fair	Good/Fair	Edge of lake, leaning out from bank to north west. Large stem forks at 2m, ivy clad. Surface roots.	NWR						
28	Beech	16-20	500-750	Fair	Good/Fair	Dominant tree within Group 12, nearest the path. Forks at 8-10 and crown biased south west. Low deadwood and possible fire damage. Past minor branch failures, wounds and crossing branches. 1x decayed root on north side.	Remove low deadwood.	3	4	3	<1/1M	L	0.25

Adderbury Lakes - Tree Survey Schedule

Tree No	Species	Height	DBH	Structural Condition	Physiological Condition	Comments	Recommendations	Target Range	Size Range	PoF	Risk Index	Work Priority	Work days Estimated
29	Hybrid Black Poplar	16-20	500-750	Good	Good	Rooted on bank to the north of a small Folly. Slight stem lean south, tall drawn form, vigorous tree in good health. Pronounced buttressing.	NWR						
30	Ash	16-20	500-750	Fair	Fair	Lakeside tree. Forks at 4m; 1x low stem extends over the lake, the dominant stem is upright. Low old basal wound with minor decay. Minor deadwood. Bat box.	NWR						
31	Ash	16-20	500-750	Fair	Fair	Lakeside tree. Forks at 6-8m and crown biased north. Minor deadwood and surface roots. Bat box.	NWR						
32	Douglas Fir	20+	500-750	Good	Good	One of the dominant conifers along the edge of the lower lake. Typical form, tall with a high crown. Surface roots on path edge. Minor low deadwood.	NWR						
33	Ash	16-20	1000+	Fair	Fair	Large girthed trunk with 3 primary stems from 3m and crown biased west. Western stem extending over the lake has had a previous branch failure at mid point with large remaining scar. 1x long limb extends south. Old branch failure wounds, pruning wounds and minor cavities. Ivy clad low stem.	Sever and clear ivy at base and main stem union to aid future inspection.	3	1	5	<1/1M	L	0.25
34	Sycamore	16-20	500-750	Good/Fair	Good	Set back from path. Twin stem at 6m, narrow union with minor inclusion. Balanced crown. Crossing branches, minor deadwood and wounds	NWR						
35	Yew	11-15	250-500	Good/Fair	Good/Fair	Lakeside tree on path edge. Twin stem at base with narrow fork fused at 1m. Low old dead stub. Dense multi-stemmed mid crown. Understorey canopy to T36 and Log pile at base.	NWR						
36	Ash	20+	1000+	Fair	Fair	Large girth. Forks at 4m, 1x upright, 1x weighted north west. Old callus near union west side, woodpecker holes, Old branch failure wounds mid crown and old failed branch stub on north east side .	NWR						
37	Beech	16-20	500-750	Good	Good	Lakeside tree. Sinuous stem and crown biased north. Minor crown lift wounds.	NWR						

Adderbury Lakes - Tree Survey Schedule

Tree No	Species	Height	DBH	Structural Condition	Physiological Condition	Comments	Recommendations	Target Range	Size Range	PoF	Risk Index	Work Priority	Work days Estimated
38	Yew	11-15	500-750	Good	Good/Fair	Next to a bench. Slight lean north, forks at 3m into 3x stems with good unions. Old crown lift wounds.	NWR						
39	Yew	11-15	500-750	Good	Good/Fair	Next to a bench. Single stem, good form with slight crown bias west. Bat box.	NWR						
40	Cedar of Lebanon	16-20	500-750	Fair	Fair	Prominent lakeside tree at southern end of the lower lake. Heavy stem lean north west and crown biased over the lake. Mounding on south side indicated previous rootplate movement. Forks in the upper stem, past branch failures with associated wounds and tears in the upper crown. Low crown deadwood and minor crown thinning.	NWR						
41	Common Lime	20+	500-750	Good	Good	Drawn single stem, forks upper stem and union appears good. Slight lean east from dominant Lime. Basal epicormics.	Remove basal epicormics regularly and prior to next survey.					Ongoing	0.25
42	Common Lime	20+	500-750	Fair	Fair	Dominant Lime. Single main stem and 3 sub stems at base. Dense basal epicormics restricting inspection. Crown retrenchment, dieback and associated deadwood.	Remove basal epicormics regularly and prior to next survey.					Ongoing	0.25
43	Ash	16-20	750-1000	Fair	Fair	Lakeside tree. Main central leader to the north and large primary branch extends south from 3-4m on main stem. Southern limb has pronounced up curved growth and an Inonotus hispidus fungal bracket on top of the branch at approx. 1m from the main union. Old crown lift wounds and cavities. Old branch failure and torn stub in northern crown.	Reduce height of southern primary limb by 4-6m to suitable growth points in order of reduce loading on low branch with fungal decay. Carry out aerial inspection of cavities and wounds.	3	1	3	1/40k	M	1
44	Goat Willow	5-10	250-500	Fair	Good/Fair	Path edge. Primary stem forks at 1.5m and 1x smaller upright stem to the north. Low basal sub stem to the west has included union and basal decay. Old branch failure wounds and one partially failed branch over the path.	Remove sub stem over the path; reduce to a 0.5m stump. Remove deadwood and partially failed hanging branch.	3	3	3	1/500k	L	0.5
45	Douglas Fir	16-20	500-750	Fair	Good	Located on small island; inspection restricted. Ivy clad stem and appears to have lost leader at tip. Potentially weak branch attachments, but set back from the path.	NWR						
46	Ash	16-20	250-500	Fair	Poor	Located on small island, inspection restricted. Ivy clad stem. Major dieback.	Reduce to 8m habitat pole.	3	2	5	<1/1M	L	1

Adderbury Lakes - Tree Survey Schedule

Tree No	Species	Height	DBH	Structural Condition	Physiological Condition	Comments	Recommendations	Target Range	Size Range	PoF	Risk Index	Work Priority	Work days Estimated
47	Oak - English	11-15	250-500	Good	Good	Path side tree to the east. Good form, balanced crown with slight bias to the west.	NWR						
48	Alder	11-15	250-500	Good	Good	Path side tree to the east. Good form, balanced crown.	NWR						
49	Yew	11-15	250-500	Fair	Fair	Path side tree to the east. Single stem. Tight unions upper crown. Crown biased east from beech.	NWR						
50	Beech	16-20	750-1000	Good/Fair	Good/Fair	Prominent mature tree. Stem lean and heavy crown asymmetry south west with long low limbs. Tight fork in main stem with minor bark inclusion and mid crown fork in north stem has minor inclusion. Crossing branches, old crown lift wounds, minor branch failures and deadwood. Beech bark scale fungal infection on low stem-monitor.	Remove minor deadwood over the path.					L	0.25
51	Yew	11-15	250-500	Fair	Fair	Path side tree to the west. Low sub stem to the west is dead. Old moderate stem wound at 2m. Previous lost leader at 4m with regeneration from failure point and low crown biased north.	Remove low deadwood growing through adjacent Holly					L	0.25
52	Yew	11-15	500-750	Good	Good/Fair	Path side tree to the east. Crown biased east. 3 main stems from 2-3m, reduced crown density, minor deadwood and minor low stem bleeds.	NWR						
53	Yew	5-10	500-750	Fair	Fair	Path side tree to the east side of path. Suppressed by dominant Yew, forks at 2m and crown biased south west. Old basal wound.	NWR						
54	Yew	11-15	500-750	Good	Fair	Dominant tree on east side of the path. Twin stem at 1.5m with minor bark inclusion. Crown biased north east, old crown lift wounds and reduced crown density.	NWR						
55	Ash	16-20	500-750	Good/Fair	Good/Fair	Path side tree, near the Boathouse. Branching from 3m and the main codominant stem forks at 6-8m. Large primary branch extends south. Old crown lift wounds and minor deadwood. Surface roots.	NWR						
56	Yew	11-15	500-750	Good	Good/Fair	West edge of path. Codominant stem from 2m, narrow included union and crown biased west.	NWR						

Adderbury Lakes - Tree Survey Schedule

Tree No	Species	Height	DBH	Structural Condition	Physiological Condition	Comments	Recommendations	Target Range	Size Range	PoF	Risk Index	Work Priority	Work days Estimated
57	Yew	5-10	250-500	Fair	Good/Fair	Near the small foot bridge and rooted within stone edging. Slight lean, exposed roots and minor decay. Shared canopy with adjacent tree. Minor deadwood.	NWR						
58	Yew	5-10	250-500	Fair	Fair	Suppressed poor form; leaning east and asymmetric crown. Minor deadwood.	NWR						
59	Yew	5-10	500-750	Good	Good/Fair	Mature tree next to a bench and along boundary wall. Shared canopy with adjacent tree and overhangs the path. Possible lost central leader and remaining leader biased south. Minor deadwood.	NWR						
60	Yew	5-10	500-750	Fair	Fair	Single stem, shared canopy and crown biased east. Heavily Ivy clad.	Sever and remove ivy.					L	0.25
61	Alder	16-20	500-750	Good	Good	1 of 3 prominent Alders. Tall, vigorous with drawn and slender form. Crown slightly biased north and ivy clad. Good specimen.	Sever Ivy.					L	0.25
62	Alder	16-20	500-750	Good/Fair	Good	Drawn and slender form and crown biased south. Low south crown and high north crown. Minor ivy.	NWR						
63	Alder	16-20	500-750	Good	Good/Fair	Twin stemmed at 2m with drawn and slender form. Slight stunted upper crown, northern stem has crocked leader. Low ivy.	NWR						
64	Sycamore	16-20	500-750	Good/Fair	Good	Boundary tree near north gate. Low stem lean to the east, twin stemmed at 4m, crown biased east, reasonable form and minor deadwood. 2x early mature regeneration trees under canopy on path edge.	Consider removing self sown Sycamores to reduce competition and to remove while relatively small.					L	1
65	Sycamore	11-15	250-500	Good	Good	Lakeside tree. Reasonable form. Slight lean and crown biased South. Ivy clad.	NWR						
66	Sycamore	11-15	800	Fair	Fair	Along northern boundary wall. Multi-stemmed with tight included bark unions, 4 main stems. Crown biased north west over the public footpath, slightly stunted crown with dieback in upper crown. Minor deadwood.	NWR						
67	Elm	5-10	0-250	Dead	Dead	Standing dead next to path. Within G13.	Fell or reduce to standing deadwood monolith at 3-4m	3	2	3	1/100k	M	0.5
Total estimated Days													9

APPENDIX 3

Group Survey Schedule

TWC1300-S-002

Adderbury Lakes - Groups Survey Schedule

Group No.	Species	Height	Age	DBH	Cond	Comments	Recommendations	Target Range	Size Range	PoF	Risk Index	Work Priority	Work days Estimated
G1	Ash, Cherry, Rowan, Spindle, Hazel	1-8	EM	50-250	F	Next to entrance. Young Cherry slight suppressed by Ash. 1x established early mature Ash is dominant tree; crown biased east from adjacent Yew. 1x Hornbeam on path edge recently removed. 1x Rowan near entrance, suppressed by Ash. Hazel at base of Rowan. Young Spindle planting. Dense shrubby Dogrose along boundary and rambling Bramble.	Manage bramble and dogrose. Consider removal of Ash to favour Rowan or vice-versa.					M	1
G2	Cherry, Rowan, Elder, Oak, Silver Birch	2-12	EM	50-200	F	Young planted trees and regeneration on either side of the path. North side:- 3x planted Rowan with bases smothered in dense bramble and 1x ivy clad stem. 3x middle-aged Elder - shrubby form and dense ivy clad. Other small regeneration and Elders amongst dense bramble. South side:- 2x Rowan, 1 is suppressed by Beech (T13). 2x shrubby Elder on path edge, ivy clad and deadwood. Other shrubby Elders are set back. 1x good specimen Oak planted as commemorative tree in memory of Vera Wood. 5x Birch and 1x early-mature Oak forming small collective group have drawn and slender form.	Manage bramble and remove ivy around planted Rowan trees.					H	1.5
G3	Yew, Birch, Beech, Oak, Sycamore, Holly, Yew, Rowan	8-12	EM-MM	100-400	G/F	Both sides of path. Overstorey trees include middle-mature Sycamore on south side of the path and several Oak (5), Birch (5) and Rowan (3) on the north side of the path. Mainly drawn and slender form but some have suppressed form due to competition. 3x Yews form understorey trees and there are scattered self sown Sycamore and Elm. The shrub layer is patchy and includes Laurel, Snowberry, Holly and Elder.	Thin out some of the Oak, Birch clump removing 2-3 trees to favour better quality specimens. Create log piles from arisings. Remove self sown Sycamore.					M	1
G4	Hawthorn, Sycamore, Goat willow, Pear, Rowan, Crack willow, Oak, Elder	1-8	Y-EM	100-200	G/F	Open canopy area that mainly includes young planting and self sown trees. Previous mature tree felled with remaining log pile that's overgrown with bramble - good habitat pile. Planted trees include Cherry, Hazel and Oak that are establishing well although becoming smothered by bramble. 2x Crack willow, basally multi-stemmed to east of group. 1x Goat willow leaning over the path towards the footbridge. Scattered multi-stemmed shrubby Elder and self some Sycamore scattered. 1x Horse chestnut early mature (35cm dbh) near to T19 has suppressed crown form. 1x Lime middle-mature has 3 main stems from base, drawn form and basal epicormics. 1x mature Yew on path edge has good form and condition. 1x mature Holly to south east of T19, crown biased south east, forks at 2-3m, bird box on main stem.	Remove Goat willow leaning over the path. Manage bramble encroaching on planted trees. Remove self sown Sycamore, Elm, Ash. Consider clearing vegetation from the log pile so more accessible as a feature. Lime - Remove established epicormic shoots from base to reduce competition with main stems. Create small log piles. Consider alternating a coppice cycle on 2x multi-stemmed willows.					H	3

Adderbury Lakes - Groups Survey Schedule

Group No.	Species	Height	Age	DBH	Cond	Comments	Recommendations	Target Range	Size Range	PoF	Risk Index	Work Priority	Work days Estimated
G5	Common Alder, Black pine, Holly, Sycamore	10-20	EM-MM	300-600	F	Middle-mature Alders near T61-63. In area of seasonally wet ground at northern tip of the lake. 5x Alders: 1 dominant (50cm dbh), 2x leaning and crocked leaders, 1x twin stem to the north east. Dense Holly clump to the east. 2x Pines along south east boundary. Shrub layer includes scattered Elder and occasional Dogwood. Previous root plate failed tree central to area and deadwood branch pile.	Manage ground flora, aquatic plants for ecological benefits. No tree planting or pruning recommendations. Remove self sown Ash and Sycamore. Sever Ivy from Alders.					L	0.5
G6	Alder	20+	MM	500-800	G/F	Small group of mature trees along the boundary growing close together with shared canopy. 4 trees and 7 stems. Leaning stems, dominant upright leaders and some biased to the east. Ivy clad stems.	NWR						
G7	Alder, Willow, Oak, Sycamore, London plane, Elm, Laurel, Alder, Cherry, Ash, Hawthorn, Lime, Holly, Hazel	3-16	EM-MM	200-500	G/F	Lakeside group along western bank of the upper lake. Mostly regeneration of varied age and structure. Some early to middle-mature overstorey trees, occasional mature tree (T20-T24), young regeneration and patchy shrub layer. Some establishing Alder and Willow at northern end along with some young planted Cherry and 1x early mature Lime. 1x early mature L. Plane to the north of T22, provides good succession tree. 2x middle-mature Ash, near T23, lean out over the lake and display crown dieback. 1x multi-stemmed Crack willow leans out of the path and has 1x split branch overhanging the path. Alders dominate the southern end of the group; early to middle-mature, in good condition and form suitable waterside trees.	*Hazard tree work Medium priority:* Crack willow - remove defective split branch overhanging the path. *Management recommendations High priority* - Manage self sown Sycamore/Ash, selective remove of dense patches to maintain varied species structure and reduce competition on better quality trees. Manage bramble where affecting other ground flora, shrubs and trees. Monitor Ash dieback. Consider coppicing or selective removal of the two stems extending over the path.	3	3	2	1/100K	H/M	2
G8	Mixed species	2-8	Y-EM	50-250	G	Mixed trees, shrubs, hedge between the main path and the parkland boundary of Adderbury House. A layered Hawthorn hedge runs central to the main path and secondary path and a narrow band hedge runs along the parkland boundary. Hedge along boundary includes a good native mix - field maple, hawthorn, hazel, blackthorn. More established trees line the main path to the south including Ash, Sycamore, Oak, Horse chestnut and Goat willow. They are mainly single stemmed and have reasonable form and in good/fair condition. 1x goat willow is basally twin stemmed and has an included union and leans over secondary path. There are a few early to middle-mature yews and Hazel coppice and the majority of low level is self sown goat willow, elm, ash, Sycamore. There are a few young planted trees, occasional log piles and rambling Bramble.	Manage self sown Ash, Sycamore. Manage bramble. Clear around young planted trees. Monitor leaning Goat willow. Consider new planting to establish a few large canopy overstorey trees (Oak, Lime, Beech) where space allows, to provide long term succession.					M	2

Adderbury Lakes - Groups Survey Schedule

Group No.	Species	Height	Age	DBH	Cond	Comments	Recommendations	Target Range	Size Range	PoF	Risk Index	Work Priority	Work days Estimated
G9	Sycamore, Ash, Oak, Alder Willow, Hawthorn, Holly, Hazel	10-20	MM-M	400-800	G	Narrow tree line on east side of the upper lake. Inspection restricted due to access and wet ground. The overstorey trees include Sycamore, Ash, Oak and Alder with understorey Willow, Hawthorn, Holly and Hazel. Relatively varied species mix and structure - mature Oak dominant the southern part, a stand of middle mature Ash in the mid section and early-mature Alder to the north. Provides effective screen to adjacent property and good habitat potential due to restricted public access.	Conduct walkover survey in summer during dryer conditions to fully assess trees and advise on management.						0.5
G10	Yew, Willow, Ash, Oak	5-15	EM-MM	100-300	G/F	Small island group. 2x middle-mature Oak and Ash are the dominant overstorey trees. Understorey includes multi-stemmed Willow and 1x young Yew. Nesting box for waterfowl central to the island. 1x Willow, previously topped with regeneration.	Selective remove self sown saplings on a 5-7 cycle.					L	1
G11	Hazel, Elder	3	EM	100	G	Small scattered understorey shrub group under the canopy of T25 and T29.	-						
G12	Ash, Beech	15-20	MM	400-700	G/F	Overstorey group includes a clump of 3x Ash and 9x Beech. 3x Ash: Line of trees close together with shared canopy and some stem wounds. East tree is twin stemmed and has past failed stem with associated dead torn stub with decay; its remaining leader has drawn form, biased north and a pronounced growth rib and increased loading on lower stem. The central Ash is a single stem with drawn slender form and the western tree forks at 6-8m with drawn form. 9x Beech on slight raised ground. 5x mature Beech form shared canopy (including T28), leaning and sinuous stems, the eastern trees are biased east, western trees are more upright. 2x middle-mature trees are within understorey of the group, 1x near to the small Folly on edge of G11 and 1x middle-mature tree behind the Summerhouse. Laurel understorey to Beech and large old log pile. Bat boxes.	*Hazard tree work:* Crown reduce eastern Ash with previous failure - reduce to a 10-12m high pollard.	3	1	3	1/40K	M	1
G13	Beech, Ash, Alder, Hazel, Holly, Hawthorn, Laurel, Cappadocian maple, Yew	10-20	MM	100-450	G	Along eastern edge of the lower lake. Early mature Alders to the north, a mix of Yew, Holly and Laurel understorey scattered throughout as well as self sown Ash and Sycamore, a cluster of Cappadocian maple to the south including 2 leaning stems on the path edge with dieback and 1x old dead ivy clad monolith. A small area of young self sown trees to the south near T37. Ivy clad stems and deadwood piles.	*Hazard tree work:* Remove or Monolith the dead Elm (T67) near Douglas Fir. Consider removal of an Alder or Ash, that are located in front of the Summerhouse to open up lakeside view. Crown lift the Yew along the lakeside.	3	3	2	1/50K	M	1

Adderbury Lakes - Groups Survey Schedule

Group No.	Species	Height	Age	DBH	Cond	Comments	Recommendations	Target Range	Size Range	PoF	Risk Index	Work Priority	Work days Estimated
G14	Laurel, Holly, Ash, Yew, Elder, Box	2-15	EM-MM	50-500	G	East edge of the lower lake path with railing fence forming the boundary. Mostly understorey Laurel, Yew, Holly and Elder. A prominent clump of Laurel stands behind the Summerhouse. 1x middle mature Ash (40cm diam) has drawn and slender form. 1x Cappadocian maple to south has extensive stem wounds from squirrel damage. 1x middle-mature Yew on path edge (30cm diam), squat form. 1x mature Holly south of Summerhouse is a good specimen. Scattered log piles provide good habitat resource.	Fell - poor Cappadocian maple at lower east side of path.					M	0.5
G15	Sycamore, Alder, Hazel, Beech, Ash, Cherry, Sweet chestnut	10-20	EM-M	100-700	G	East side of railings, outside of boundary on third party land. Part of group is within the APC ownership but is not clearly defined. A mix of middle-mature and mature overstorey trees with understorey Hazel coppice. Scattered mature Sycamore and Lime, some dominant trees at the southern tip of the group near to the railing boundary. Possible badger set central to the group.	Continue to carry out hazard survey of mature trees within proximity to the lakeside path.						
G16	Box, yew, Holly	5-12	EM-M	100-300	G	Small group on both sides of the path to the south of the lake. Young Bamboo, Yew and Holly on lake side of path. East side of path includes understorey Box and Laurel along with overstorey trees to the south that include 1x Beech that has drawn form and 1x Sycamore with crown biased west and ivy clad stem. 1 mature Sycamore leans heavily along lower bank along fence line boundary, behind Yews (T38, T39), that has a heavy lean over the adjacent field. A mature Sycamore has previously failed along this boundary.	Reduce mature Sycamore with heavy lean over adjacent land. Reduce to approx. 6-8m monolith or Fell	5	1	3	1/1M	M	1.5
G17	Oak, Sycamore, Holly, Norway maple, Alder, Box, Horse chestnut	20	EM-MM	100-600	G/F	The 'Sanctuary' wildlife area beyond the lower cascade and fence line. Inaccessible due to dense vegetation and wet ground conditions. Overstorey mainly includes Sycamore with occasional Oak, Ash and Alder. Box, Holly and Hawthorn appear to form the dense understorey. 1x Horse chestnut and 1x Field maple on upper west side where the group runs alongside the path.	Management for ecological benefits. Potential thinning out of understorey to open up ground flora and along the stream edge. Further survey during dry season to gain clearer access.					L	2
G18	Elder, Hawthorn, Yew, Ash	3-12	EM-MM	100-450	G	West side of lower lake path. 1x middle-mature Ash (45cm diam), ivy clad and good form. Layered Hedge runs along west of path and parkland boundary.	-						
G19	Box, Yew, Ash, Alder Cappadocian maple	15	EM-MM	100-400	M	2 small islands, access restricted. Mainly dense understorey with self sown trees. 2x overstorey trees (T45, T46) on south island. 2x early to middle-mature Alders on the east side of the north island along with Hazel, Box and profuse Cappadocian maple root suckers. Old Cappadocian maple stem has failed or been topped at 4m and is ivy clad. 1x early mature C. maple extends towards path and has moderate dieback. Young Alder and Ash regeneration. 1x willow previously failed topped.	Manage Cappadocian maple suckers while they are young and to reduce competition on native regeneration. Fell early mature C.Maple with dieback that extends towards the path.					M	2

Adderbury Lakes - Groups Survey Schedule

Group No.	Species	Height	Age	DBH	Cond	Comments	Recommendations	Target Range	Size Range	PoF	Risk Index	Work Priority	Work days Estimated
G20	Alder, Sycamore, Beech, Spindle	8-15	EM-MM	100-400	M	Both sides of the path on north west side of the lower lake. West side of path: 3x early-mature Sycamore in fair/poor condition due to squirrel damage and 1x Beech that has narrow form. East side of path: 2x Alder, 1x dead, 1x good condition and crown biased east. Retain standing deadwood habitat. 1x Holly and young Horse chestnut on east side. Young planted spindle.	NWR						
Total Estimated Days													20.5

APPENDIX 4

Tree Location Plan

TWC1300-D-001

Key

- Trees
- Groups

0 10 20 30 40 50 m

Project:	Adderbury Lakes Tree Survey
Project No:	1300
Dwg Title:	Tree Survey Plan DRAFT
Dwg No:	1300-D-001
Client:	Adderbury Parish Council
Rev:	
Scale:	1:1,250 @A3
Date:	19.11.20
Drawn:	CA
Chkd:	ROS
Fig No:	

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