Habitat Management Plan

Zion Graveyard

Zion Lane/Lawrence Street

Attercliffe

Sheffield

S9 3RG

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Quality Assurance

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Contents

1 Introduction & rationale

1. This habitat management plan has been researched and written by Julie Riley, BA (Hons) MA DipRSA ACIEEM, including use of the Preliminary Ecological Assessment produced in March 2018.

2. The habitat management plan was commissioned by the Friends of Zion Graveyard, Attercliffe.

3. This management plan sets out to summarise the wildlife value of the site as previously identified in the Preliminary Ecological Assessment (PEA) in May 2018, and to present a realistic and sustainable plan that balances the historical interest of the site against the biodiversity interest present. A key aim is to maintain the 'secret garden' feel of the current site, whilst improving the accessibility of the site and allowing for the long term continued investigation and maintenance of the historic gravestones. The management plan will be designed to allow the volunteers running the site to conduct the works largely by hand and with limited financial input. The management plan will be designed with both short term goals (5 years) and a longer term overall maintenance plan (25 years). The management plan will include recommendations for a long term monitoring plan, with methods that can be carried out by the group, and (if funding is available) by professional ecologists.

4. The recent history of the graveyard is that for around twenty years the site has been shut away and abandoned, becoming overgrown and forgotten about. The site was put up for sale and purchased with the help of the Heritage Lottery Fund in 2018. Due to its long abandonment, the site had become a haven for an assemblage of wildlife that would be common elsewhere, but is rare in the context of industrial Attercliffe.

5. The owners want to preserve this historic graveyard intact and to balance opening up limited access to the graveyard to the public, with retaining its aspect as a haven for wildlife in an industrial area. The group also want to reveal and identify the graves present on site and research the history of the people buried there. These two ambitions pose the potential for conflicting priorities, and so a management plan to enable both aims to be achieved is required.

2 Site details and management

6. The site is referred to within this report as Zion Graveyard. It is a disused burial ground located off Zion Lane in Attercliffe, Sheffield. The central grid reference for the site is SK 378 888. The site is owned by an Incorporated Charitable Company, Friends of Zion Graveyard Attercliffe. The site is managed by a group of volunteers, the Friends group, and run by a committee of trustees.

7. The Zion Graveyard site is a small (535m^2), roughly trapezoid-shaped area of gravestones which have become overgrown with scrub and trees. The area has been partially cleared so there are also areas of bare ground. A partial tarmac path runs along part of the west wall, joining a mud track that crosses the site from south to northeast. The site is bounded by metal security fencing and old brick walls, with some security fencing to the north recently removed to expose the grave of a notable Victorian anti-slavery campaigner, Mary Anne Rawson. The ground level of the site is lower than the ground level of the adjacent site to the east, exposing rubble hardcore at certain points along the fence. The site is kept locked and access is restricted to gates to the north and southeast of the site.

8. The Friends of Zion Graveyard Attercliffe own the graveyard from the corner of the path from Zion Lane to the edge of the path to Ferguson Street. OSL Holdings own the path along the north edge that runs alongside Mary Anne Rawson's grave. There is a Covenant in the Deeds that grants legal access to the site from Ferguson Street, however the original access point has been built over so access has been granted through a new gate and path. This has been informally agreed but is awaiting official confirmation. Zaffar Hussain owns the entrance path from Zion Lane. As yet there is no access agreement in writing, although this was stated as a concession in his planning application for the adjoining Zion Church site.

9. The site is surrounded by industrial buildings and roads, creating a relatively isolated pocket of greenery in a built-up landscape. The large green space of Attercliffe Cemetery is situated approximately 100m to the northeast, and there are small lines of trees around some of the nearby industrial complexes e.g. Baker Street/Otter Street c.55m northwest. The River Don (Local Wildlife Site 95) is located 235m to the north/northeast of the site and the Lower Don Valley Sheffield and Tinsley Canal (Local Wildlife Site 99) is located 298m to the south. There is little potential for creating additional connecting habitat in this very built-up area, making Zion Graveyard an important stepping stone for wildlife within the local green infrastructure.

10. Figure 12-1 Location Plan and Management Zones in Appendix A includes a location plan of the site.

11. The graveyard is entirely managed by volunteers. The graveyard is opened once a month for volunteers to come and help with gardening, grave clearance and other activities, and other activities take place at scheduled open days.

3 Site designations and relevant policies

12. The graveyard is not designated in any way, although it is close to a number of designated sites, including a Local Nature Reserve with statutory protection, Salmon Pastures, located 842 metres southwest of the graveyard (managed by Sheffield and Rotherham Wildlife Trust). There are 8 Local Wildlife Sites (LWS) within 1.5km of the graveyard, the closest being the River Don (City Centre to Blackburn Meadows) 235 metres to the north. The PEA lists the nearby site designations in more detail.

13. The graveyard is located within a Business Industrial Area in Sheffield City Council's online land use proposals map, close to Attercliffe Cemetery which is designated as a Cemetery/Open Space. Sheffield City Council produced Sheffield's Great Outdoors: Green and Open Space Strategy 2010-2013 which includes some relevant plans and targets, for example Target ENV W3 is to 'Develop the wildlife potential of other non-public spaces, where appropriate, to support the sustainability of the wider green space network'. It may be useful to read these plans to see how this privately-owned site fits into the wider environmental plans for Sheffield.

4 Habitats and Management Zones

14. During the PEA the site was thought too small to divide into compartments, and was instead mapped and described by habitat to create a Phase 1 Habitat Map which has been reproduced in Appendix A, Figure 12-2: Phase 1 Habitat Map from PEA Report. Since this map was produced, the fencing to the northeast has been removed and the site now extends to the wall of the adjoining building.

15. The graveyard has a number of habitats on site including areas of dense scrub, areas of cleared earth around gravestones and on banks that have been partially colonised by weedy species, a number of young to young-mature trees, and some clear areas of dirt path, tarmac path and grave markers that have been laid flat. Much of the site is fenced with metal security fencing; there is also a brick wall topped with fencing along the west edge.

16. Several visits have been made to the graveyard over the course of 2018 and the initial species list from February 2018 has been expanded, and references to the proposed management zones added. The revised species list is available in Appendix B – Species List.

17. Over the course of 2018 regular volunteer management has been taking place with some graves being cleared, an area being designated and taped off as a 'wildlife area', and some banks being partially cleared. The site has naturally become divided into four main 'zones' and these have been formalised and mapped in this plan as follows:

4.1 Zone A: Bank with scrub

18. Zone A is a roughly rectangular bank measuring approximately 103m^2. It has a flat top along the security fencing and then slopes down to the path that runs through the centre of the site. The bank is largely vegetated with scrub including ivy *Hedera helix*, bramble *Rubus fruticosus* and some shrubs of firethorn *Pyracantha* sp. (erroneously identified in the PEA as blackthorn) and saplings of cherry laurel *Prunus laurocerasus*. The bank has been partially cleared, particularly towards the northern end, and here bracken *Pteridium aquilinum* has started to invade. Bindweed *Calystegia sepium* is also creeping into the bank from the adjoining land. Some climbers have been planted against the security fencing, including winter jasmine *Jasminum nudiflorum* and clematis *Clematis tangutica*.

19. Graves are thought to be present under the banking, and the Friends group would like to do some excavating of the bank to discover and record the graves.

February 2018

February 2018

April 2018

May 2018

September 2018

September 2018

4.2 Zone B: Narrow earth banks

20. Zone B is an irregularly shaped strip of mostly cleared earth banking measuring approximately 43m^2. It includes an inset area where grave markers have been laid flat, which is used as a seating area. There is a young-mature sycamore *Acer pseudoplatanus* (which has recently had a bat box installed) in the corner of the inset area, with a rose *Rosa* sp. adjacent. There has been some recent planting of shrubs against the security fencing, including firethorn in the inset area and Japanese quince *Chaenomeles japonica* in the far corner. Otherwise the soil is a rough mixture of rubble and bare soil which has been colonised by a range of herbaceous plants including speedwell *Veronica* sp., Michaelmas daisy *Aster novi-belgii*, willowherbs *Epilobium* sp., soapwort *Saponaria officinalis*, purple toadflax *Linaria purpurea*, a fumitory *Fumaria* sp. and a number of members of the cabbage and daisy family. Bindweed is creeping into the inset area from the neighbouring car lot.

21. This area of the site is lower than the adjoining land and there is the possibility of the neighbouring landowner replacing the rough rubble walling behind the security fencing with gabions, which may disturb the soil banks. It is thought that all graves in this area have already been exposed. A path has been located underneath the strip of soil adjacent to the fencing (first photograph below).

February 2018

February 2018

April 2018

August 2018

September 2018

4.3 Zone C: Cleared graves and scrub

22. Zone C is a trapezoid-shaped wedge of flat land measuring approximately 146m^2. Until recently the security fencing ran along the north-eastern edge across the important grave marker of Mary Anne Rawson; this has recently been removed, and there is now access along a hardstanding path adjacent to the building, with the path being raised up higher than the graveyard area. There is also a hardstanding path along the west and south of the zone, with a fence-topped brick wall at the west boundary. The central dirt access path runs along the southeast edge.

23. There are several multi-stemmed young-mature goat willow *Salix caprea* present, with a large elder *Sambucus nigra* and a small area of dense cherry laurel forming an area of dense scrub. The rest of the zone been extensively cleared, exposing numerous standing gravestones and flat grave markers. Ivy scrambles up the trees and along the ground, forming the majority of the ground cover. Narrow strips of bare soil around the graves have been colonised with a limited range of weedy species, particularly from the daisy and cabbage families.

24. It is thought that the majority of graves in this area have been uncovered. A key grave for the site, that of Mary Anne Rawson, will be targeted for restoration now that the fencing has been removed. It will need to remain accessible to visitors.

February 2018

February 2018

February 2018

April 2018

May 2018

August 2018

4.4 Zone D: Current wildlife area

25. Zone D is a triangular shaped area measuring approximately 143m^2. It is separated from Zone C by a hardstanding path, and has the central dirt access track running along its southeast edge. Its west edge is backed by an ivy-covered brick wall topped with security fencing; an informal track has been formed along the wall to give access to this side.

26. This zone has been left largely untouched and has been marked off as a wildlife area. There are four multi-stemmed goat willow within the zone, with ivy cover to varying degrees, as well as a tangled mass of smaller shrubs including privet *Ligustrum ovalifolium,* cherry laurel, dog rose *Rosa canina*, bramble, elder *Sambucus nigra* and extensive ivy covering both ground and trees, where it is mature enough to flower. There are some small self-set sapling/pole stage trees present (not marked on the map) including bird cherry *Prunus padus*, ash *Fraxinus excelsior* and sycamore; there are also a number of sycamore seedlings/saplings present. Butterfly bush *Buddleja* sp., elder and bird cherry saplings are growing out of the top of the brick wall.

27. Some graves around the northeast and eastern edge have been cleared, exposing bare soil; here bracken has started to invade. A pile of brash has been formed from cut wood and twigs in the middle of the zone. The graves within this zone have been largely untouched; the Friends group want to uncover and record the graves in this zone.

28. The ground level is raised towards the southern tip of the triangle; it is thought that there may be graves under the raised soil, which the Friends group would like to explore in due course.

February 2018

April 2018

May 2018

May 2018

August 2018

September 2018

5 Cultural Value

5.1 History and land use

29. The simple, flat stones in the graveyard are characteristic of a Puritan outlook, so particular to strict nonconformists. The Friends group want to keep the faces of all the stones uncovered and legible, including within the current wildlife area if this can be done with the least disturbance possible.

5.2 Landscape value

30. Zion Graveyard is situated in a heavily industrialised area between the River Don and the Sheffield and Tinsley Canal. It is not visible within the landscape; instead its landscape value lies in being an unexpected pocket of greenery within an industrial setting – a Victorian graveyard with a slightly wild, 'secret garden' feel tucked away in the middle of modern brick and corrugated iron offices, factories and warehouses.

5.3 Current use of the site

31. Zion Graveyard is an area of burial ground that was attached to the Zion Congregational Church. The church fell into disuse in 1976 as Attercliffe was industrialised, and was finally demolished in 1987 after a fire destroyed the building. Until its rediscovery in 2017, this remnant of the graveyard had been fenced round, locked and forgotten for at least 20 years.

32. The site was purchased by the Friends of Zion Graveyard Attercliffe in early 2018 in order to preserve it as a historic burial site and as a wildlife garden. The site remains fenced and locked, but is now managed by the Friends group and opened twice a month for historical research and wildlife gardening, and opened by arrangement for special events and visits.

5.4 Community involvement

33. The site is managed by the Friends of Zion Graveyard Attercliffe with a committee of six trustees. There are a small number of regular volunteers (including the trustees) who take part in historical research, gardening, giving talks and guided tours, managing the website and Facebook group and other associated tasks. There are over 300 supporters on the membership list.

34. A questionnaire was issued to trustees and supporters to gather the views of visitors to the site. The questionnaire was also made available during open events. A copy of the questionnaire is available in Appendix C.

35. Thirteen completed questionnaires were received and the results analysed. Full results (excluding personal information) are available in Appendix C.

Visitor location

36. 4 respondents live in the S5 postcode, one in S6, one in S7 and two in S9. Others declined to give their postcode. Zion is located in the S9 postcode area.

Visitor details

37. Charts summarising information about visitors to the site are below. Most of the questionnaire respondents are heavily involved in the project, either as trustees or as members of the Friends Group. The majority are aged over 55, with two aged 45-54. 58% of respondents were female.

The majority of respondents are either retired or semi-retired, employed part-time or self-employed, or looking for work; inferring that they had time available to devote to the Zion Graveyard project. All of the respondents classified themselves as white, and the majority (85%) did not consider themselves to have a disability. Six respondents (all Friends Group/Committee members) had visited the site more than 16 times; five had visited between 2-5 times.

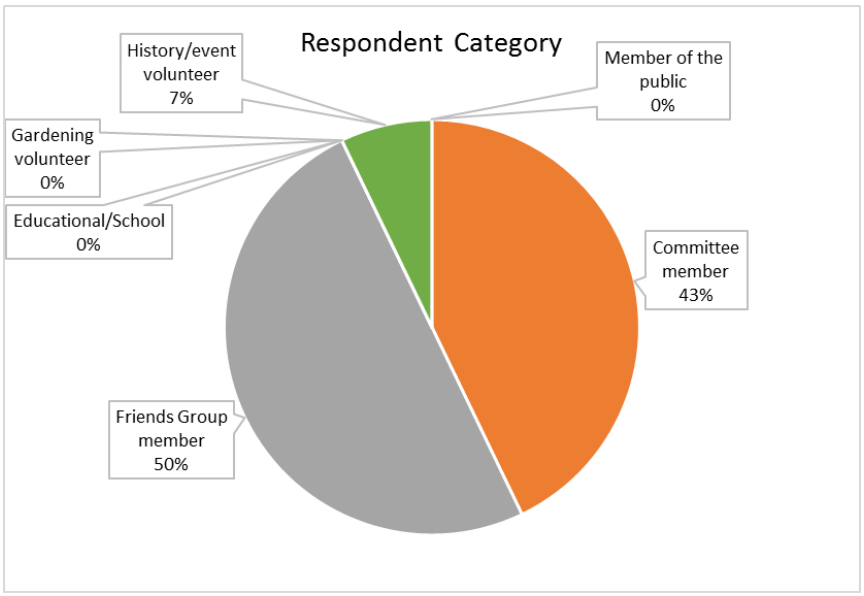


Figure 5-1: Involvement Category

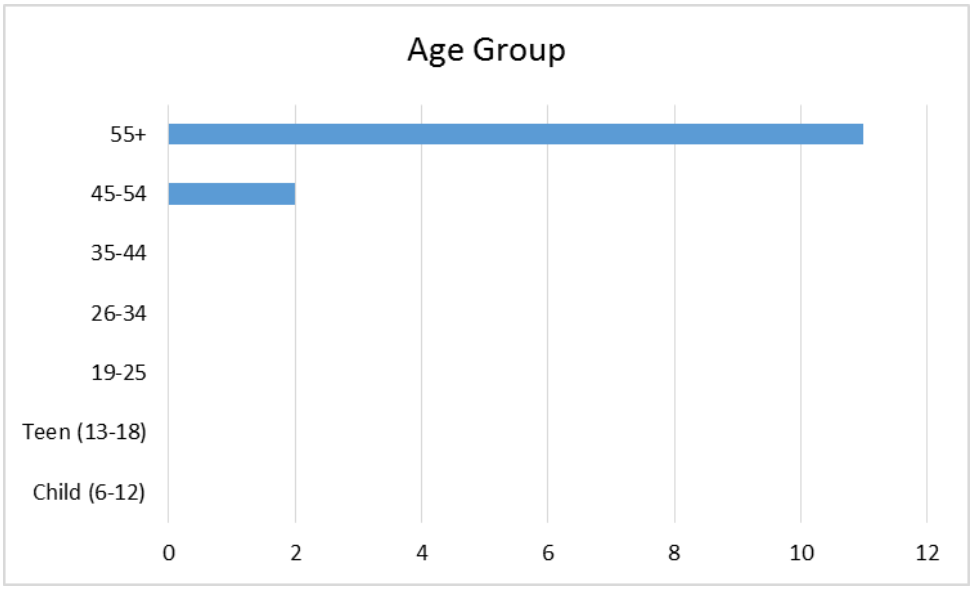


Figure 5-2: Age Range

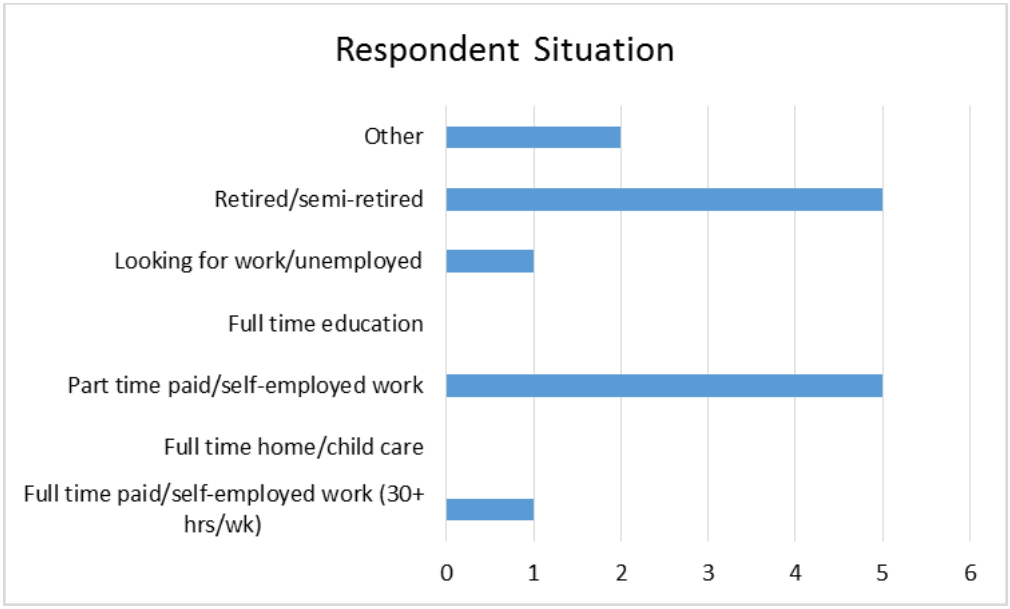


Figure 5-3: Personal Situation

Zion Graveyard – site use, access and availability

38. Respondents were asked how they would like to see the site used. A variety of answers were received, which have been conflated into broad categories.

39. The majority of respondents wanted the site to be used for a mixture of historical research, education activities and appreciation of wildlife, broadly in line with the Friends Group's stated vision.

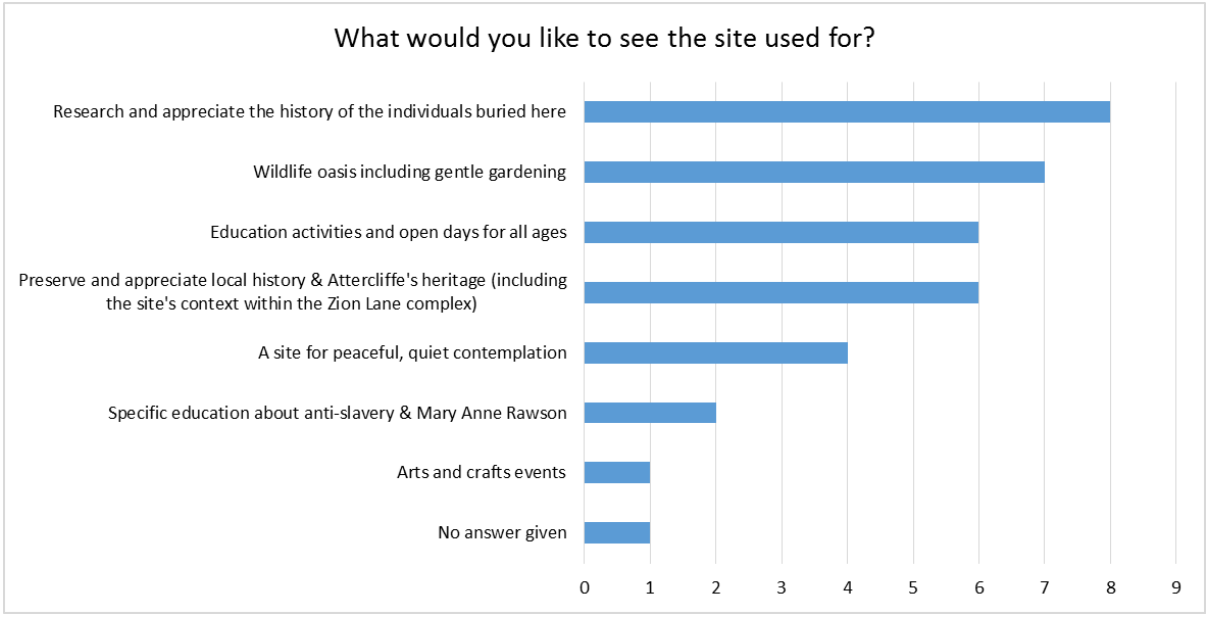


Figure 5-4: Site Uses

40. Respondents were broadly in agreement that access should be granted to any interested party, but that visitors should be supervised. Some concerns were raised about the site not being suitable for smaller children, and that the site should not allow dogs.

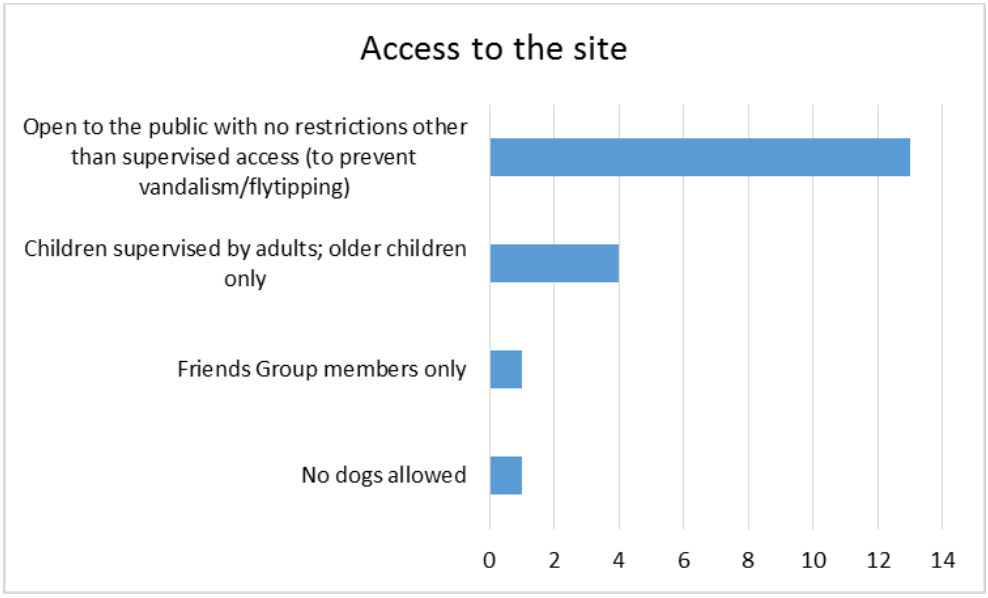


Figure 5-5: Access to the site

41. Respondents had a variety of thoughts on how often the site should be accessible, ranging from fully open (i.e. not locked) to regular opening times and special events. Most respondents recognised that the site could only be open when volunteers were available to staff it, and hoped for regular planned opening times.

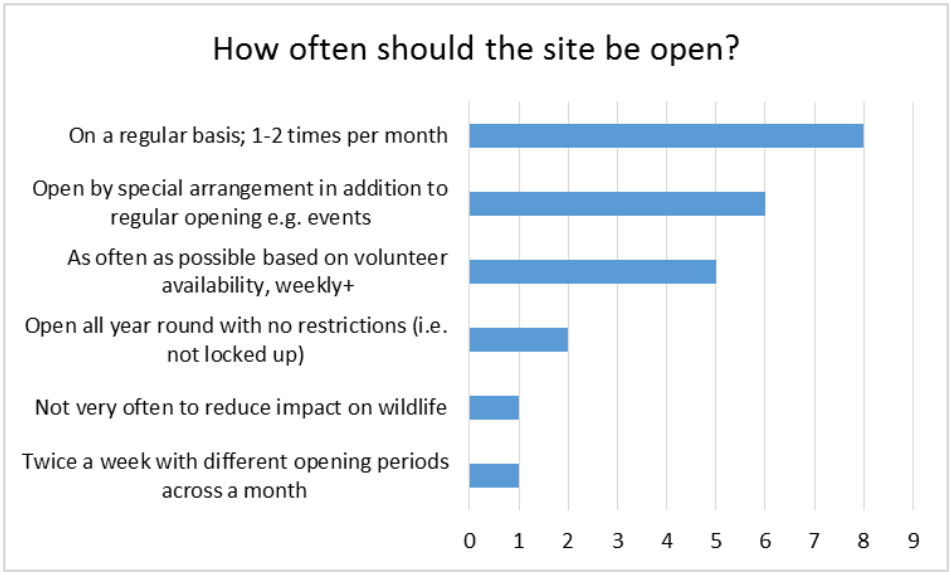


Figure 5-6: Site opening

42. When asked how often respondents would like to visit themselves, the answers were very wide ranging, from occasional ad hoc visits to regular weekly visits.

Involvement with the Graveyard

43. Respondents were asked to select all the ways they would like to be involved with the graveyard. The results are ranked in order of popularity. People also gave a variety of reasons for wanting to be involved, which broadly corresponded with these categories.

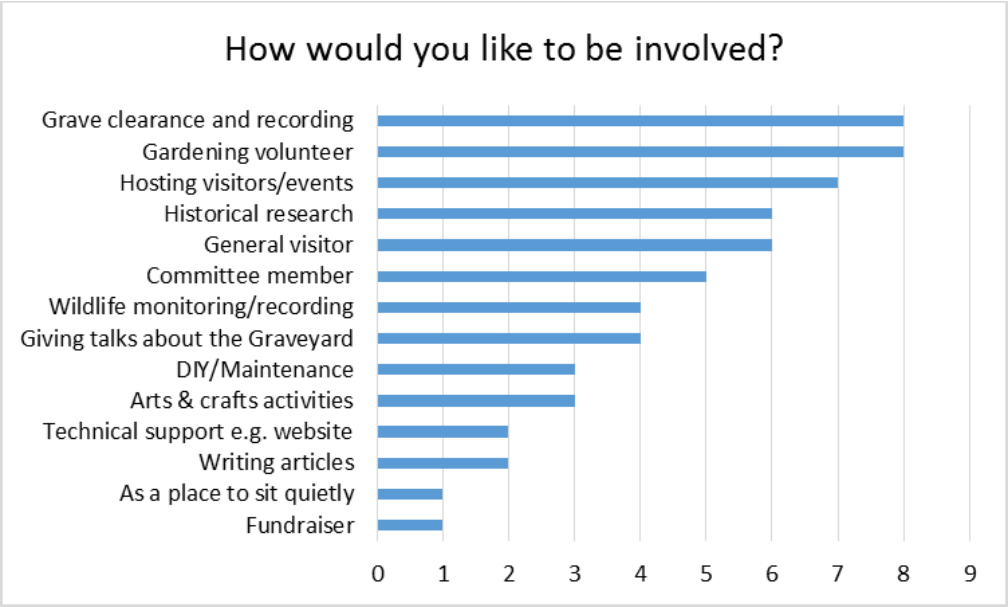


Figure 5-7: Involvement

Graveyard features

44. When asked what the most important features of the graveyard site were, nine respondents felt that it was an important part of Attercliffe's history, a burial ground linked to Nonconformism that should be protected. Six people specifically mentioned Mary Anne Rawson's grave, and four noted that it was a wildlife haven in an industrial area.

45. When asked what people liked the most about the graveyard, the answers included exploring the history of the site, the connection with the anti-slavery movement, the calm, peaceful setting of the wild area, and the excitement of discovering and uncovering graves and sharing the findings with others.

46. People's dislikes of the graveyard were broadly categorised as follows:

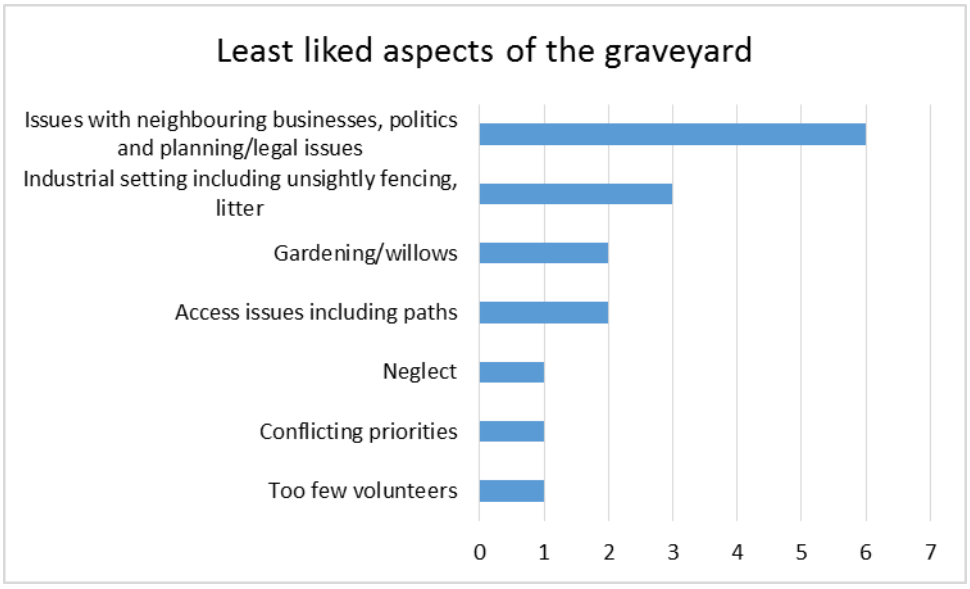


Figure 5-8: Disliked aspects

47. When asked about their vision for the future of the site, there were as many responses as respondents. A full list is available in Appendix C, responses can be roughly grouped as:

a. Conservation of a Victorian burial ground;

b. Recognition as an important site within the anti-slavery movement;

c. All graves investigated and recorded;

d. Managed as a wildlife-friendly site;

e. More of a garden of remembrance/tidy but wildlife friendly site – look cared for but be sustainable;

f. Ability to move the wild area of the site around to enable exploration;

g. Strong Friends group and regular programme of events.

A wildlife-friendly site

48. All respondents were aware of the aim to keep the Zion Graveyard as a wildlife-friendly site. There were many suggestions put forward towards this aim.

How do you think the Graveyard could be made wildlife-friendly?
Bird boxes/ bug hotels/dead timber/ bat boxes
Wildlife friendly habitat
Take advice from wildlife charities & implement their suggestions
No dogs
Zoned areas
No pesticides
Appropriate gardening e.g. hand weeding unwanted growth
Plant insect-friendly native species
Active management/sympathetic management
Volunteers already doing a great job
Make more scenic & private by covering fencing with planting
Put in native plants, wildflowers for colour, bulbs, informal feel
Avoid planting on the graves, don't make it too 'managed' looking
Keep it as it is - let the robin and the wren keep their homes
Plant things birds like to eat with edible fruits. Keep it green with a bit of colour - more of a woodland feel - not municipal bedding
Keep a green border around the edge
Communicate with volunteers/visitors to explain that it needs to look wild in places
Clearer understanding of what wildlife is there, why it's important and how to nurture it

Table 1: Wildlife-friendly suggestions

6 Infrastructure

49. There is no electricity or water supply on site.

50. There are drain covers near to the Ferguson Street access path, so there may be drainage or sewerage channels running under part of the site, however their exact location is unknown.

7 Current Biodiversity Value

7.1 Presence of notable and protected species

51. The Preliminary Ecological Assessment (Wildscapes, March 2018) assessed the site for notable and protected species, including a data search covering 1.5km (2km for bats) around the site looking at biological records within the last 10 years. This should be referred to for detailed information.

52. In summary, the site did not hold any notable or protected plant species, invertebrates, reptiles, amphibians, badgers or other mammals. It was assessed as being unlikely to be attractive to amphibians, reptiles or badgers.

53. There were no records of notable invertebrates nearby, and no invertebrate records collected during the PEA. However as the survey visit took place in February it is likely that a small range of common invertebrates will be present on site, with the site holding low to moderate local value for invertebrates.

54. There were many records for common birds in the area, and at least 10 bird species were noted by the surveyor on visits throughout 2018 (see Appendix B). One species, the dunnock *Prunella modularis* is amber listed within the Birds of Conservation Concern. The graveyard is small but offers moderate local value for birds, acting both as a 'wild' area for foraging and nest building, and as a stopping point for birds travelling over the wider area – particularly those moving between the nearby wildlife corridors formed by the river and the canal.

55. The data search showed many records for a range of bats within 2km of the site, although no records had been made over the site itself (the nearest record being a pipistrelle *Pipistrellus pipistrellus* 0.32km away). All bats are protected through the Habitats Directive, the UKBAP/NERC Section 41, and through the Wildlife and Countryside Act Schedule 5 Section 9.5a. The PEA took place in February, outside the optimum time for seeing bat activity. The older ivy-covered trees present on site were assessed as having negligible value for bats, with one tree assessed as having low value. The graveyard was assessed as having negligible to low local value for bats, due to its location between two watercourses, and near several areas of green space with mature tree and shrub lines, as well as the possibility of the industrial buildings in the general area having features suitable for bat roosts. Although no evidence of bats has been located on site, it is possible that the graveyard may be visited by foraging or roosting bats on an infrequent basis as part of their foraging over the wider area.

56. The habitat on site is suitable for hedgehog *Erniaceus europaeus*, a species protected by UKBAP/NERC Section 41, however the connectivity to other areas within the wider landscape is limited by the surrounding roads and buildings, making it unlikely that hedgehog will be frequently present.

7.2 Habitat assessment

57. Zion Graveyard's highest biodiversity value lies in its being a pocket of green space within a largely built-up area. The decades of neglect have led to an assemblage of trees, shrubs and ivy that provide a locally valuable 'wild' site, part of the green infrastructure and acting as a stepping stone between two nearby wildlife corridors formed by the river and the canal, and other nearby green spaces such as Attercliffe Cemetery.

58. Within the site itself, the most valuable habitats on site are the young-mature multi-stemmed goat willows and other mature trees and shrubs including bramble, elder, butterfly bush, firethorn, rose and cherry laurel, almost all of which are interwoven with ivy. These scattered trees and areas of scrub support some invertebrates which provides foraging opportunities for birds and bats. Some of the trees and shrubs are berry-bearing, providing additional foraging for birds. The denser shrubs and ivy cover provide nesting opportunities for birds. The western wall is covered with mature ivy and this provides similar opportunities.

59. The ground flora is species-poor. The area left uncleared in Zone D has had its ground flora largely choked out by ground-spreading ivy. Where banks have been cleared in Zones A and B, undesirable species such as bracken and bindweed have started to move in. Where soil has been cleared and exposed as in Zones C and B, some native plant species have started to colonise, largely from the cabbage and daisy families – species that many people consider weeds. This lack of diverse ground flora will attract fewer invertebrates to the graveyard, with a knock-on effect on the site's attractiveness to birds and bats.

60. The graveyard has close affinities with woodland/woodland edge or hedgerow. It is shaded by the scattered trees and built-up walls, with the best-lit areas being along the eastern edge (Zones A and B).

8 Management Aims and Objectives

8.1 Vision statement and ideal management outcomes

61. The Friends of Zion Graveyard Attercliffe have stated that their vision is to enable access to the historic graves to allow for investigation and maintenance, while maintaining biodiversity interest by making the site a safe haven for wildlife. The site should be a peaceful place with a 'secret garden' feel that is congruent with the Victorian/Nonconformist history of the graveyard.

62. The ideal management outcomes are to have all graves within the graveyard uncovered, recorded and accessible, while retaining and improving the wildlife habitat present within the graveyard, aiming for a slightly wild feel. A range of birds and invertebrates should be regularly found within the graveyard, with occasional visits by bats and perhaps other species such as hedgehogs. A range of trees and shrubs with high wildlife value should be present, predominantly native species with a variety of flowers, berries and scent. A diverse range of ground flora should be present, mainly native species, providing nectar and pollen and food plants for caterpillars, as well as visual interest for visitors. Maintenance activities will be low key and low cost.

63. A management plan encompassing regular annual tasks and tasks for the first five years has been compiled, based on the aims and objectives listed below. This is available in Appendix E.

8.2 Aims and objectives: short term goals (2019-2023)

8.2.1 Paths and entrances

64. All paths and entrances should be kept clear of debris and plant growth to ensure safe access into and across the site.

65. Some paths are tarmac and some are dirt; the dirt paths do not need to be tarmacked, but may need to be edged with discreet edging materials in the sections that are next to loose banks, to prevent banking material from eroding down onto the path.

8.2.2 Zone A

66. This wide bank may have graves underneath it, and the Friends group are hoping to bring in archaeology students from a local university to investigate and possibly excavate the bank. Permanent planting plans for this zone are therefore difficult in the short term.

67. The security fence runs along this bank and some climbers and climbing shrubs have already been planted along it to create a screen. These climbers should be managed according to the care instructions provided for each species; a volunteer could construct a detailed list of instructions by month for all planted specimens e.g. in March, cut back plants X and Y.

68. As this bank is to be investigated, no additional planting should take place at this time. The bank already has a number of shrubs and saplings present, including bramble and ivy. These can be allowed to continue growing (unless considered invasive, see below) and cut back only if necessary, e.g. if encroaching on the access path.

69. Bracken and bindweed are present on the bank and should be targeted for removal. This may take several years but is worth doing to halt the spread of these invasive plants, particularly if soil is going to be moved around the site.

70. There are areas of bare ground which will in time be colonised with native plants, with more bare ground being revealed due to bracken and bindweed removal. These areas should be left unplanted for at least a year to check for regrowth of bracken and bindweed. Once deemed safe to plant, these areas can either be left to allow natural growth to appear, or can be planted with a woodland wildflower seed mix (see Appendix D for suggested species).

8.2.3 Zone B

71. There is a desire to install a bench or a shelter on site, and this zone is one of the locations being considered as it is already used as an area where volunteers set out chairs for rest breaks. There is discussion taking place with the adjoining landowner regarding the exposed rubble at the base of the fence, which could be replaced by more stable gabions in the future. This means that the banks are potentially going to be disturbed, and planting will need to take account of this.

72. The security fencing runs along the edge of this zone and the Friends group would like to screen this with planting. Some species have already been recommended and planted against the fence, including Japanese quince and firethorn, which can be closely clipped or trained against the fence. As the banks are too narrow to have hedgerow planting, a mixture of climbing/rambling roses is recommended instead, which will scramble up the fence with some training. These should have single or semi-double flowers to provide the most value to wildlife, and if possible be a wild or species rose that will have a good flush of flowers followed by small

rosehips. If scented they will be particularly attractive for site users, and potentially attract more invertebrates. Roses should also be selected on their compatibility with the Victorian surroundings of the graveyard. Appendix D has a list of potentially suitable species.

73. This area of the graveyard receives reasonable levels of light. It is the most suitable place for wildflower planting as the rubble-filled soil is probably reasonably nutrient-poor (a prerequisite for most wildflowers) and the banking, although shallow, will give good drainage. The banks are loose and need to be shored up before any permanent planting can take place. This may be dependent on the potential excavation of the neighbouring land.

74. In the short term, the banks including the narrow strip along the footpath and the inset area can be seeded with a mix of native wildflowers and useful non-natives that will attract invertebrates and stabilise the soil. They will mingle with plants that are already naturally in the seedbank, which include Michaelmas daisy, soapwort, fumitory and purple toadflax. Although this area has the most light, woodland edge plants are likely to be the most successful, especially as the screening cover along the fence matures. While the fencing has not been fully screened, herbs such as marjoram and sage may also be suitable in the inset area. A list of potential species is attached in Appendix D.

8.2.4 Zone C

75. The primary habitat objective for this zone is to retain the area of dense shrubs/scrub currently formed by cherry laurel, elder and ivy, and to retain the multi-stemmed goat willows in situ. The scrub provides important foraging, roosting and nesting opportunities, particularly for birds.

76. The area around the existing shrubs/scrub should be assessed to determine if there is sufficient space available to plant additional shrubs in order to extend the wildlife interest of the area. This should only be done where the roots of the shrubs will not disturb existing graves. If the intention is to displace the existing cherry laurel (see section Protect, enhance and manage areas with trees and shrubs) then saplings of holly and yew could be planted – these will eventually grow large enough to allow the cherry laurel to be removed. If the intention is to keep the cherry laurel, then shrubs such as hazel or hawthorn or small trees such as crab apple or rowan could be planted to provide additional flowers, fruits and berries. A climbing rose or suitable native clematis could be encouraged to climb up into one of the multi-stemmed willows.

77. Ivy should be retained where it is growing up the trunks of trees (see section Retain ivy in suitable locations). As the graves in this area have been largely cleared, ivy growing along the ground can be selectively cut back to allow other plants to establish (see section Manage ivy growing on memorials).

78. If there is space under the area of shrubs/scrub, a woodpile should be installed. This can be stacked by pushing stakes into the ground and then piling up wood against the stakes, to keep it from falling apart. See the section Attract invertebrates.

79. The grave markers are relatively closely set together, with narrow strips of soil around and between graves. The grave markers will remain uncovered so grassland planting is unsuitable due to lack of soil space. The aspect is sheltered and shaded and reminiscent of woodland. There are a number of plants that would be suitable for these conditions and that will be successful in the gaps between grave markers, including ferns, spring woodland bulbs and woodland flowering plants. A planting list to select from has been drawn up in Appendix D.

80. Seeds for most of the recommended species are inexpensive; if possible, volunteers should grow seeds on at home until they are of a size to plant out, rather than scattering seed directly onto the ground. Volunteers should be encouraged to let naturally occurring species remain unless they are undesirable (see the section Remove problematic invasive plants).

8.2.5 Zone D

81. This zone is currently a wildlife area with graves that have not yet been uncovered. The main short-term goal is to uncover and record the graves present while maintaining as much of the wildlife interest of the zone as possible. This work should be done slowly and carefully in stages, to reduce the negative impact on the wildlife habitat present.

82. Initially, attention should focus on the central/northern area of the triangle. A compost heap should be built at the southern end to receive cuttings/clippings from the clearance; wood can also be added to the woodpile in Zone C if this is installed.

83. Ivy can be cut back in order to facilitate activity within the central area of the zone. Ivy should not be cut back from trees or the wall, and should be carefully removed from at-risk monuments – see sections Retain ivy in suitable locations and Manage ivy growing on memorials below.

84. The mature willows should be retained, and should be protected during any clearance or planting work.

85. The other trees in the zone will need to be assessed following the guidance in the section Protect, enhance and manage areas with trees and shrubs. Older trees such as the cherry should be retained if possible; saplings of sycamore and ash should be dug out carefully by hand. Trees and shrubs with good wildlife value should be retained wherever possible, if their location allows – but bear in mind the future height and spread of any saplings left in situ.

86. Bracken is present within the zone. This should be cut back and/or dug out following the guidance in section Remove problematic invasive plants.

87. Once the ivy has been cut back and trees, shrubs and bracken initially dealt with, grave clearance can be undertaken. If possible, soil removed from each grave should stay within Zone D, to avoid spreading bracken to other areas of the site.

88. Once all graves have been uncovered in the central area, the zone can be re-assessed to decide on its future management. The area could be left to revert to wildness or be managed more closely, similar to Zone C.

89. The south corner, that is to be investigated in the longer term, would make an ideal location in the meantime for a patch of nettles. Nettles are the main food plant for the caterpillars of several butterfly and moth species including the red admiral and the peacock. Nettle patches are particularly attractive to invertebrates when located in a sunny position, although a shaded patch is also useful. A small nettle patch (less than 1m wide) can easily be controlled by cutting back once a year before flowering, to avoid the nettles from setting seed.

8.3 Aims and objectives: long term maintenance plan

8.3.1 Zone A

90. Once any excavations have been completed, the Friends group can reprofile the bank in one of two ways:

Excavate down to reveal and clear grave markers (if present).

91. If grave markers are revealed and thought to be important enough to keep clear, the bank will need to be dug out to the level of the graves. Care should be taken to shore up the foundations of the car park that will be exposed.

92. Once the new level is achieved, if there is sufficient soil width a hedgerow comprised of native berry-bearing species should be planted along the security fencing (see Appendix D for planting suggestions). The hedgerow will provide a linear feature creating a wildlife corridor for animals and should be allowed to thicken up to provide a dense hedge that can be used by birds for roosting and nesting – an A shaped hedge (thicker at the bottom than at the top) is recommended. The height should be 4 to 5 feet and the base width 3 feet. Suitable small trees could be included within the hedgerow if space allows, which will help to mask the security fencing.

93. If there is insufficient soil width remaining to support a hedgerow, suitable wildlife-friendly climbers should be planted and trained up and along the security fencing, to screen the fence and provide a linear feature that may still be suitable for roosting and nesting birds in time. A suggested species list is available in Appendix D. Some planting of this type has already taken place at Zion; volunteers could take and grow on cuttings from the plants known to be successful in this zone, to keep down the costs of purchasing replacement plants.

94. Soil removed from the banking should only be re-used elsewhere on site if it is free from problematic/invasive plant material (e.g. bracken or bindweed that may spread to new areas) and if it has been sifted to remove rubble and debris.

Keep the raised bank if no graves present or if graves are to be re-covered.

95. If graves are present but are to be re-covered, advice should be sought from an archaeologist or conservator as to how best to do this to avoid damage to the grave.

96. Once the bank has been re-profiled, the area along the fencing should be planted with the aim of making a wide fruiting hedgerow or area of scrub with scattered small trees that will provide invertebrates and animals with a variety of flowers, berries and nuts. Suggested planting is available in Appendix D and could include hawthorn, elder, firethorn, holly, dog rose, hazel, field maple, rowan, dogwood, silver birch. Blackthorn could be included but can sucker and spread. Potentially troublesome/invasive species such as cotoneaster, rhododendron, cherry laurel, Japanese rose should be avoided.

97. Adjacent to the hedge on the downslope to the access path, it would be beneficial to allow wild plants to colonise naturally. In this area it is likely that patches of nettle, bramble, cow parsley, hogweed, rosebay, Michaelmas daisy and other rough weedy species will already be present in the seed bank. Rough grasses such as cocksfoot *Dactylis glomerata* may also appear. Many of these species are considered to be weeds, but provide a valuable nectar and seed resource, as well as being food plants for various invertebrates. Nettle has high wildlife value, and if none arrives naturally, consideration should be given to planting a generous nettle patch, preferably in full sun or partial shade.

98. If a truly wild, naturally colonised bank is not desirable, an alternative is to create a patch of woodland/hedgerow edge grassland, by sowing a suitable wildflower seed mix. This should include grasses and perennials with some annual seeds to give colour and interest in the first year. A suggested planting list is available in Appendix D. Over time, the most successful plants should set seed and reappear each year, and suitable native species should also arrive

naturally. The bank along the edge of the climbers/hedge should be left as unmanaged as possible to create a wild strip of tussocky grassland which can then transition into more managed planting, creating a gradient of microhabitats.

99. If a strip of grassland is successfully established, this should be cut once a year after the seed has had a chance to fall from the flowers (generally mid to late July). The strip should be small enough to cut by hand with shears. Small areas of rougher tussocky grasses and black knapweed (if established) should be cut every other year, to allow butterflies, moths and other insects to lay eggs on grass stems which then overwinter.

100. All grass cuttings need to be collected and removed from the grassland, not left in situ – this removes nutrients from the soil and leads to slower grass growth and more flowers. Grass cuttings can be added to the compost heap.

8.3.2 Zone B

101. Once any excavation/replacement of rubble on the boundary of the site is complete, and the banks stabilised, this zone can pass into permanent management.

102. The security fencing will gradually be screened by climbing/rambling plants and trainable shrubs. These should be managed as per the care labels with a volunteer collating the tasks and times so that a management plan is used to plan gardening activities. Cuttings can be taken from plants that establish well to use elsewhere along the fence and fill in any gaps that arise.

103. The inset area should, in time, form a 'rose bower' with scented herbs at the base. If this is found to be unsuitable (e.g. the roses only flower on the outside of the fence, or do not establish well) then planting of climbers and flowering plants as suggested for Zone A would also work in this zone.

104. The low soil bank adjacent to the access track may have pavement beneath it (carrying on round the corner into the inset area, where pavement has been found). This could be cleared of soil to move the access path adjacent to the fence, allowing Zone D to be widened. Alternatively, a narrow bank of soil could be left in situ and planted with woodland edge wildflowers, to screen the rubble/gabions present along the fence line.

105. If a shelter is installed in the area, climbing plants could be planted at its base and trained to grow up over the top. Alternatively a 'green roof' could be planted, with advice on suitable planting taken at the time.

8.3.3 Zone C

106. In the long term, this area may transition back to a less managed wildlife area (although it is expected that Mary Anne Rawson's grave will always remain accessible). Activities such as weeding and clipping back ivy could be reduced or abandoned, allowing the area to revert to a more naturalistic, 'secret garden' feel. It could be cordoned off and managed with a lighter touch, which should include:

    a. Removing undesirable tree/shrub saplings

    b. Managing ivy growing on at-risk monuments, but allowing it to remain elsewhere

    c. Removing any bracken or other invasive plant that might appear

    d. Checking trees and shrubs for safety annually

e. Topping up the woodpile if one is situated in the zone

f. Checking and cleaning any bird boxes situated in the zone

107. Replacing the potentially invasive cherry laurel with more suitable native species as discussed in section 8.4.2 would reduce the risk of this fast-growing evergreen shading out more desirable native species. This has been targeted for the first five years, but can be done at a slower pace or a later date if required.

108. If the area is instead to remain in more active management, the annual work plan should be adhered to and general management prescriptions followed.

8.3.4 Zone D

109. Once all grave clearance in the central area has been completed, this zone can revert to a more regular management and maintenance plan. The zone management for Zone C should be followed as it is anticipated that the area will be very similar in nature.

110. The southern corner will need to be investigated to check for graves. It is recommended that this is done after the main central section has been cleared and recorded. The compost heap will need to be re-sited to a suitable location. The roots of ivy growing up the wall and up the willow trees should be protected during any excavation.

111. Once the area has been checked for graves, it can either be excavated out completely, or re-covered over to revert to banking.

Excavate down to reveal and clear grave markers (if present)

112. If excavated out, care will need to be taken to protect the foundations of the wall.

113. The corner is lightly shaded due to the presence of the wall and the adjacent willow trees. If there is sufficient soil width and depth, native shrubs such as hazel, hawthorn, holly or elder could be planted to create an area of scrub; alternatively small trees such as rowan or birch could be planted if their roots will not interfere with any graves present.

114. If there is insufficient soil width remaining to support shrubs, suitable wildlife-friendly climbers should be planted and trained up the fence, or the ivy that is already present could be encouraged to clothe the fence. Alternatively, the area could be left as a rough patch around the edges of the graves with nettles and other naturally-occurring species to provide food plants for invertebrates.

115. Soil removed from the banking should only be re-used elsewhere on site if it is free from problematic/invasive plant material (e.g. bracken or bindweed that may spread to new areas) and if it has been sifted to remove rubble and debris.

Keep the soil banking if no graves present

116. If the soil banking is to remain, the area could be retained as a 'working area' that hosts a compost heap. A wood pile near the wall would also be beneficial for invertebrates and small mammals.

117. Any planting would depend on whether the area was to remain as a working area or not. Suitable climbers, shrubs or small trees as previously suggested could be planted where space allows. The corner could be left rough with a nettle patch, bramble and rough weedy species that should arrive naturally. Alternatively the banking could be planted up with a variety of woodland bulbs and herbaceous plants as listed in Appendix D.

8.4 General management prescriptions

8.4.1 Protect, enhance and manage areas with trees and shrubs

118. The graveyard's most important habitats for wildlife are the scattered trees and areas of dense and scattered scrub that are present across the site. The trees appear to be self-set and some have grown through or over graves. Unless a grave is determined to be of critical importance, a tree growing over a grave should be left undisturbed.

119. Tree roots should be protected if grave or scrub clearance is taking place around the base of the trunk. Tools should never be leant against the trunk of a tree.

120. Trees should be checked annually by volunteers in the summer or autumn and the results recorded, both in writing and with photographs to enable comparisons year on year. Established trees should be checked for:

    a. Pruning required if the tree is growing too close to other structures or other trees/shrubs.

    b. Damage or impact from digging/clearance around the base of the tree.

    c. Holes, cavities or visible fungi at the base of the tree – this may indicate the tree is damaged or dying and professional advice may need to be sought.

    d. Are the leaves unnaturally small, sparse or misshapen? Do they fall earlier than expected, and is the entire tree affected? These may be signs that the tree is under stress.

    e. Check branches for damage, cavities, wounds or other damage. Check for crossing branches that are rubbing against each other. Check the points where branches fork for any visible damage.

    f. Inspect the bark and look for fungi, cankers, calluses, sap seepage, loose or damaged bark.

    g. Check the root area for fungi, cracking soil, roots damaging monuments.

    h. Assess any ivy growing on the tree – has it increased in quantity since the baseline or previous survey? Has it reached the crown of the tree? Is it difficult to properly assess the tree due to the amount of ivy?

121. Trees should also be inspected regularly by a qualified arborist, who can use the results of the annual surveys and advise on any noted problems. The frequency of this may be determined by the terms of the public liability insurance for the site, but should be every 2 to 5 years.

122. A number of sycamore and ash saplings and seedlings are present within the current wildlife area of the graveyard (Zone D). These should be removed; sycamore is quick-growing and can spread rapidly, and the site is too small to support the growth of large trees. Sycamore is also considered less valuable for wildlife as it is a non-native that has naturalised. The ash saplings should also be removed; ash can grow into a very large tree, and the likelihood of ash dieback affecting most ash trees means that leaving it growing now may lead to the need to remove a diseased tree at a later date.

123. Seedlings of cotoneaster *Cotoneaster sp.* and privet *Ligustrum ovalifolium* are growing within Zone D. Cotoneaster is potentially invasive and should be removed. Privet is innocuous but has lower wildlife value than shrubs like elder or hazel, so could be removed and replaced as space is at a premium. Cuttings from suitable shrubs already on site could be taken and grown on by volunteers to plant as replacements in due course.

124. Some small shrubs (butterfly bush, elder) are growing out of the top of the wall. These can be left in situ unless they are damaging the wall.

125. Cherry laurel is present in Zones A, C and D with some large specimens in Zone C and D. Cherry laurel is a non-native and considered potentially invasive, although it is not a Schedule 9 species. Within the context of the graveyard, it provides evergreen cover and shelter, along with fruits eaten by birds; however it is an unruly plant requiring regular clipping back to maintain its shape and prevent it from spreading. Birds can spread it to other areas through the seeds. It has a high cyanide content and is poisonous to herbivores; this along with its dense canopy shades out native species that might otherwise grow beneath it. Established shrubs of cherry laurel do not need to be removed immediately, but seedlings and saplings (e.g. those present in Zones A and D) should be removed. Established shrubs should, if possible, be replaced over time with evergreen species with higher wildlife value such as yew *Taxus baccata* or holly *Ilex aquifolium*.

126. If any trees are damaged and start to die off, or have dead limbs present, they should be inspected for safety by a qualified arborist. Dead wood provides an excellent wildlife habitat so if a tree does need to be cut down, it should be retained as a dead wood 'snag' measuring more than 1m tall if possible. If a tree has dead limbs e.g. the elder growing in Zone C, these limbs should be left intact if safe to do so, rather than being pruned out. If tree pruning is deemed essential, the cut wood should be retained on site and stacked to form a dead wood pile or, if very large, moved to a suitable location e.g. the bank of Zone A, and allowed to rot away naturally.

127. Routine tree maintenance tasks that are suitable for volunteers include:

    a. Pruning small branches and small trees.

    b. Cutting back low branches or dead/broken branches if necessary, if they are reachable from the ground.

    c. Management of ivy.

    d. Removal of unwanted tree seedlings/saplings.

128. Volunteers should not be asked to undertake chainsaw work, using saws while on a ladder, removing large limbs or felling of entire trees, unless they are suitable trained and have the correct insurance cover.

129. Any trees, hedgerows or shrubs (including ivy) that need maintenance work e.g. pruning should have this work done outside of the bird nesting season (March to August) to minimise disturbance to nesting birds. It is best to prune deciduous trees once they have lost their leaves, and the overall tree/shrub shape is visible. If the work is an urgent safety issue and needs to take place within the breeding season, a suitably qualified ecologist should be consulted before works are carried out.

8.4.2 Plant new trees and shrubs/hedgerow

130. Planting shrub species to create additional wildlife habitat is recommended (see the aims and objectives for each zone for detailed suggestions). The general aim is to create pockets of dense shrubs across the site, with a hedgerow along the eastern edge in due course if possible. Areas of dense shrubs/scrub will provide nesting and roosting opportunities and provide safety, warmth and shelter for overwintering animals.

131. Native shrub species such as hawthorn, dog/field rose, elder, dogwood, wych elm, ivy, field maple and hazel will provide flowers, nectar and berries and attract invertebrates to the site, providing food for other creatures. If there is space for small native trees, rowan or crab apple are attractive choices. Evergreen natives include holly and yew. The Woodland Trust give away free packs of hedging and trees to community groups via their website.

132. Although native species are recommended, there are a number of non-native species that are attractive looking, suitable for the site and that still have good wildlife value. Examples include firethorn *Pyracantha*, barberry *Berberis*, Japanese quince *Chaenomeles*, witch hazel *Hamamelis* and butterfly bush *Buddleja*, although the latter is already present on site.

133. Other non-native species should be avoided, particularly those that are invasive or on Schedule 9 of the Wildlife and Countryside Act. The GB Non-Native Species Secretariat has a website listing problematic plants that can be consulted if in doubt. The invasive tree/shrub species most likely to be suggested for planting are cotoneaster, Japanese rose *Rosa rugosa* and rhododendron, which are all readily available at garden centres but are Schedule 9 plants. Any plant being brought in by a volunteer from home should be checked to ensure an invasive species is not being introduced to the site.

134. If a hedge is planted, it can be hard pruned in the first few years (removing at least half of the new season's growth) to create a densely wooded lower section. Alternatively, if wildflowers are to be encouraged along the edge of the hedge, little or no pruning is needed initially – this will raise the height at the base of the hedge and let through more light.

135. Mature hedges need little maintenance other than occasional trimming. The hedge can be trimmed every two or three years in January or February, giving birds and other animals as long as possible to feed on any fruit. Some hedge plants will only flower on older wood (the previous summer's growth) so need at least two years between cuts to flower.

8.4.3 Plant climbers

136. Clothing the security fencing with suitable climbers will screen the graveyard from the adjoining land, and provide vertical habitat for wildlife. Climbers should be species that bear flowers and berries, ideally flowering at different times of the year to extend the availability of nectar for invertebrates.

137. A number of climbers have already been planted; suitable species for further planting should be wildlife-friendly types such as native honeysuckle, winter jasmine, native clematis, hops, ivy species, passion flower or climbing/rambling roses. The final height and spread of the climber should be taken into account before planting, to ensure that the plant is suitable for its location.

138. Some climbers may also be suitable for training up into the mature trees, particularly native clematis or climbing roses. Climbers should only be encouraged up sound trees; trees that have

dead wood or are otherwise weak should not have additional weight from climbing plants added.

139. Climbing plants are most likely to be successful if they are types suitable for part-shade, due to the sheltered and partially shaded nature of the graveyard site.

140. Any climbers planted will need regular management to encourage growth and to successfully clothe the fencing. Some climbers are self-clinging e.g. ivy, however others will need regular tying in. When a plant is purchased, the care instructions should be collated (from the care label or from the RHS gardening website) into an annual plan that lists the tasks required.

8.4.4 Retain ivy in suitable locations

141. Many of the trees have ivy growing up them. Ivy is a valuable wildlife resource, providing roosting and nesting sites, cover for invertebrates and, if mature enough to flower, is an excellence source of late season nectar and berries (flowering from September to November). Ivy can be encouraged to flower by teasing the top shoots away from their support so that they hang free.

142. Ivy does not damage a sound tree and is unlikely to cause a problem unless the tree is already weak or damaged. Ivy growing up and around trees should be retained and its roots protected.

143. The wall along the western edge adjacent to Zone D is covered in dense ivy. If the wall is sound this ivy should be retained as it forms good wildlife habitat. Its roots along the base of the wall need protection from clearance or damage from access. The ivy can be controlled by regular clipping back, but try to leave mature ivy to flower and fruit.

144. If the ivy does need to be removed from the wall at any point, do not cut the stem expecting it to die off; on walls, cutting the stem and leaving the ivy can stimulate root growth into the wall from aerial roots. Instead, peel off the ivy from the top down.

145. Ivy has been planted and/or will grow naturally up the security fencing. The roots should be protected and the ivy regularly clipped to shape; it should also be cut back to stop it from spreading down the banking/along the ground.

146. Ivy is also growing along the ground, forming a dense mat that covers graves and soil. In this situation the ivy is less desirable as it shades out other flora and its roots have the potential to damage stonework. Ivy on the ground can be cut back regularly to keep it under control.

147. The greatest risk posed by ivy to a weak or damaged tree is the weight of it. Ivy growing in the crown of the tree rather than just on the trunk can make the tree more susceptible to damage, both because of the weight of the ivy and because it catches more wind. If ivy does need to be removed from trees for any reason, e.g. a tree has been determined to be unsound and needs the weight of ivy removing for stability, a section of ivy measuring around 30cm should be cut from the ivy stem at the base of the tree trunk. This should cause the ivy to die off slowly without the need to pull it off the tree. If you need to physically remove ivy from a tree, this should be done outside of the bird nesting season.

8.4.5 Manage ivy growing on memorials

148. Ivy does not often damage stonework and can actually protect it from air pollution and extremes of weather which can cause erosion. Ivy can be left on stonework unless it is covering plants of interest such as lichens or mosses; you cannot read the inscriptions on a treasured monument; or it is damaging the stonework as below.

149. Ivy can damage more elaborate memorials that comprise stone sections with joints. The ivy grows into the joints or any cracks and crevices and pushes them apart. Ivy can also make memorials impossible to see or inspect.

150. To clear ivy from gravestones/memorials, gently pull it from the stone, starting at the top and peeling it off, working down toward the roots. Either dig out the ivy roots or else repeat this removal annually. Do not cut the ivy stem and leave the remainder to die (the method used for trees) – cutting the stem encourages rooting into the stonework, causing damage. Be aware that ivy may be the only think holding a monument together and may conceal breaks and chips that could need repairing once exposed.

151. Do not scrub gravestones/memorials once ivy is removed, as this may damage the stonework and will remove lichens, mosses and liverworts, which create microhabitats as well as being interesting in themselves. An exception is if a memorial is made of sandstone, which can be damaged by moss; in this case the moss can be carefully removed from the surface.

152. An audit of gravestones/memorials should include an assessment of their likelihood to be damaged by ivy (i.e. complex monuments with joints and cracks). These memorials should be mapped and assessed every year with ivy removal or control targeted for these particular stones. There is some ornate metalwork around at least one grave, which appears to be in a fragile condition; ivy should not be allowed to grow over this, to reduce stress on the structure.

8.4.6 Remove problematic invasive plants

153. Schedule 9 of the Wildlife and Countryside Act 1981 (with various amendments) lists a number of plants that are illegal to plant or otherwise cause to grow in the wild. As the graveyard is close to a number of Local Wildlife Sites, best practice would be to avoid planting any Schedule 9 plants on site, and acting quickly to remove any plants that are noted growing – particularly if soil is being moved, as this will expose new plants that are dormant in the seed bank. The GB Non-native Species Secretariat website lists all Schedule 9 species and has helpful species identification sheets that can be printed off. A current list is located in Appendix F.

Bracken

154. Bracken has been noted growing into cleared areas in Zone A and Zone D. Given the size of the graveyard site, the invasive nature of bracken and the need to improve diversity of ground flora, bracken should be targeted for control. Bracken spreads by spores and underground stems.

155. It is difficult to completely eradicate bracken without chemical treatment. The ultimate aim may be eradication of bracken, but an intermediate aim within the first five years should be to stop the spread of bracken and to ensure it does not become a dense stand.

156. Instructions for hand removal of bracken can be found in Appendix G. Fronds can be added to the compost heap if young and green; woody stems and rhizomes should not be added, but should be removed from site and disposed of appropriately.

Bindweed

157. Bindweed has been noted growing into the site under the security fencing, travelling in from the adjacent land (currently used as a car lot). Bindweed persists from creeping perennial stems that can penetrate down to 5m deep

158. Physical control through digging and hoeing can remove bindweed within a couple of years, however if the bindweed is not controlled on the adjacent site it will continue to spread into

the graveyard. If possible, vertical, solid barriers can be installed into the soil to a depth of 45cm along the boundary, to create a physical barrier to the bindweed.

159. Roots should be routinely removed when carrying out any digging and roots should not be added to the compost heap. In spring, new shoots should be removed as they appear. If bindweed appears in an area where digging is not possible, severing the weed at ground level with a hoe can be effective.

Use of pesticides/herbicides

160. As a general rule, pesticides and herbicides should not be used on site, in keeping with its role as a wildlife haven. Herbicide should not be used around memorials as it is damaging to stonework.

161. If stubborn problematic plants such as bracken cannot be removed by hand over time, a suitably qualified contractor could be employed to treat the plant chemically, however this will have a cost implication.

162. Bindweed can be chemically controlled if hand removal is not proving effective. Spot treatment with a glyphosate based product is effective; consult the RHS website for more detailed advice.

163. Japanese knotweed *Fallopia japonica* (a Schedule 9 species) has not been noted on site, but is present in the local area (particularly along the river) and is a troublesome weed. Volunteers should become familiar with the appearance of Japanese knotweed and be vigilant to ensure it does not appear when the seedbank is disturbed. Japanese knotweed is difficult to eradicate and is dealt with as controlled waste, with specific requirements for its safe disposal. If Japanese knotweed is noted on site in the future, advice should be sought from Wildscapes.

8.4.7 Improve diversity of ground flora

164. In uncleared areas of the site, ivy dominates the ground flora, shading out other plants by creating a carpet across the area. Ivy is also slowly re-colonising cleared areas and will continue to do so if left unmanaged.

165. In cleared areas, species in the seed bank have been left to germinate. A species list has been collated from visits in 2018, which show a typical ephemeral vegetation mix present after clearance, with a number of species from the willowherb and crucifer families present along with species often found along marginal habitats like woodland/hedgerow edges such as nettle, cleavers, hogweed, Michaelmas daisy *Aster novi-belgii* and soapwort *Saponaria officinalis*.

166. Apart from problematic invasive species such as bindweed and bracken, the naturally arising flora will provide some visual interest and contribute to the biodiversity of the site, in particular providing nectar for invertebrates. The flora could be left to develop naturally, with a light management touch that includes removal of undesirable plants and cutting back of ivy growing across the ground.

167. However some visitors have expressed a desire to plant flowers or other plants on particular graves, or for the graveyard as a whole to have a more 'managed' look. To reconcile this desire with the desire for the graveyard to be wildlife friendly and to have a 'secret garden' feel, some additional planting could be undertaken.

168. A list of suitable flowering plants including wildflowers, bulbs, grasses and ferns has been drawn up and is available in Appendix D. The majority of these plants are native species with simple flowers that produce nectar. They have been selected to work with the semi-shaded, woodland edge conditions present, and have been subdivided into plants that will be most suitable for inter-planting among the gravestones/grave markers, and plants that will be more suitable for planting along the banks to form a woodland margin or rough grassland.

169. As a general guideline, where possible 'managed' planting i.e. more garden-like planting should be restricted to the soil between grave markers and path edges. Planting on the banks and the areas along lines of shrubs and climbers should, wherever possible, be left rougher and wilder, to create a good margin of undisturbed tussocky grassland along the base of shrubs and climbers, which will give shelter, act as a corridor for small mammals and provide a food source for seed-eating birds. Tall grassland will also attract invertebrates such as bumblebees, which will nest at the base of grasses.

8.4.8 Increase nesting opportunities for birds

170. As the trees on site are not old enough to have natural holes or crevices, two standard hole nest boxes have been installed to provide nesting and roosting opportunities. Additional nest boxes can be installed if desired; these could include other types of nest box, for example open-fronted boxes for robins. Instructions for making bird boxes are readily available on the internet – ensure that untreated timber is used. Positioning will depend on the specific box used.

171. Bird boxes should be cleaned out annually in the autumn to remove parasites and get the box ready to be used for roosting over the winter.

172. Over time, as hedging and climbing plants mature, additional nesting opportunities will naturally become available. Maintaining the density of planted shrubs through appropriate cutting back will ensure that shrubs form thickets suitable for nesting.

8.4.9 Increase roosting opportunities for bats

173. A bat box has been installed on the sycamore tree in Zone B. Additional bat boxes can be bought or made using instructions readily available on the internet – ensure that untreated timber is used. Bat boxes should be installed as high as possible, in a sheltered, wind-free position, exposed to the sun for part of the day.

174. Unlike bird boxes, once a bat box has been installed it should not be disturbed or cleaned.

8.4.10 Attract invertebrates

Bug hotels

175. Bug hotels are easy to make and can be freestanding or wall mounted and of any size. There are many patterns available in books and on the internet. Essentially, a structure (box, section of pipe or shelves made from pallets) is used to contain a variety of items to create different sized holes that bees, ladybirds, beetles, woodlice and many other invertebrates will use for nesting and overwintering.

176. Items to be packed into the structure should include hollow canes (from bamboo canes with the centres pushed out, or hollow stems of elder or hogweed), cut wood with drilled holes, pinecones, bricks with holes, pots filled with straw or piles of leaves, stacked twigs, bark, pebbles, even corrugated cardboard or pieces of tile.

177. Bug hotels should be situated in a range of situations e.g. among the ivy on the west wall, in the shaded wildlife areas or in partial sunshine along the security fencing. The variety of situations will attract different invertebrates.

Tussocky grassland strip/rough and weedy areas

178. Allowing a wilder, rough grassland strip to develop, and allowing plants such as nettle and garlic mustard that are already on site to remain, will provide nectar, food plants and shelter for a range of invertebrates including bees and butterflies.

Woodpile

179. Pile up any prunings or sections of trees that have been felled. A variety of sizes is ideal as they will rot at different rates. Add to the woodpile whenever tree or shrub pruning is carried out; try to maintain the pile at 50cm tall or more.

180. Locate the pile in a fairly shady, damp area, ideally surrounded by trees and shrubs, or located within a strip of coarse tussocky grass. Do not keep the area around the woodpile too tidy – allow leaves on the ground and coarse vegetation to make it more likely to attract animals such as hedgehogs, as well as invertebrates.

181. A woodpile placed near a wall or hedge can encourage animals to use it as part of a wildlife corridor.

Flower colours and shapes

182. Colours that particularly attract invertebrates are blue, purple, violet, white and yellow. Invertebrates find single flowers easiest to get into; double flowers are generally not suitable as the invertebrate cannot get easy access to nectar, and often plants with double flowers are sterile. The flowering species listed in Appendix N are all selected to attract invertebrates; any other plant species considered in the future should be checked for features suitable for invertebrates.

8.4.11 Habitat boxes for mammals

183. Woodpiles and compost heaps will be used by mammals, but if desired, a custom-made hedgehog box could be installed – the optimum location is in a quiet, shaded place such as under a hedge or behind a woodpile.

184. Instructions for making your own hedgehog box are readily available on the internet, or they can be purchased ready-made. As the presence of hedgehog is only a possibility, it may be best to wait until there has been a sighting of hedgehog before installing a box. However hedgehogs can travel up to two miles in a night while foraging so they could be present intermittently without anybody seeing them, as long as there is a CD-sized gap into the site that they can get through (e.g. under the security fencing).

185. It is also possible to purchase or make nest boxes for wood mice – although they will readily make their own nests in suitable locations, it may be a good opportunity for educational activities such as camera trapping linked to the nest box.

8.4.12 Compost heap

186. A compost heap is currently located at the southern tip of Zone D. Compost heaps are useful not only because of the production of compost, but also because the heap can provide habitat for a variety of animals.

187. If possible, the compost heap should be contained in a bin rather than mounded in a loose pile. Compost bins made from planks of wood (e.g. deconstructed pallets) are preferred as they give access points for animals such as hedgehogs. A two-bay bin is useful if space allows as one bay can be composting while the other has new material added to it.

188. General guidelines for the siting of a compost heap are as follows:

    a. In a sunny or lightly shaded location.

    b. Not directly under a tree, as this can damage the trunk and roots.

    c. Not on top of a known grave site.

    d. Away from access routes if possible – but easy to get to with a wheelbarrow.

    e. Away from areas with spring bulbs or lots of flowers.

189. Compost bins should ideally be emptied in October and April, when there should be neither nesting animals nor hibernating animals present.

190. Be cautious about composting material from invasive species, including garden waste brought in from outside the site which may contain root fragments or seeds of unwanted plants.

8.4.13 Removal of soil

191. Where possible, soil removed from grave markers as part of the uncovering and recording of graves should be re-used elsewhere on the site.

192. Soil removed from areas where there are undesirable plants (bracken, bindweed) may spread these plants as there are likely to be fragments of root, seeds etc. in the soil. Soil will need to be carefully sifted through to remove root fragments; the area that the soil is moved to should be closely monitored for a full season to see if any undesirable plants germinate. These can be removed when young.

193. No seriously problematic plants e.g. Japanese knotweed have been noted on site so far. However, if soil disturbance causes these plants to germinate and grow, there are restrictions on their removal from site – Japanese knotweed requires use of a registered waste carrier, for example, and soil contaminated with Japanese knotweed can only be re-used on the same site. More information is available on the Environment Agency website.

8.5 Interpretation

194. The dual management of the site, for history and for wildlife, should be explained to visitors and volunteers to ensure support. Interpreting what people can see is essential if they are to understand and appreciate the wildlife element of the graveyard, particularly if it is wilder than they are used to.

195. A copy of the management plan (or extracts from it) can be made available on the Friends website for anybody to review, so that visitors can understand the management vision for the site.

196. Lists of species of plants, birds and animals found on the site, along with photographs, could be posted on the website and linked to iRecord as suggested in the section Monitoring and recording.

197. A laminated list of species found at the site could be made into a handout that visitors can carry round the graveyard with them, to see if they can find species known to be present. Volunteers could research the history of certain plants typically associated with graveyards (e.g. Yew) and add this information to the handout.

198. If funding allows, an interpretation board could be installed in the graveyard to highlight the wildlife present on site. This should be done after all short term management has been completed, and the site has settled into its longer term management cycle.

9 Monitoring and volunteer management

9.1 Volunteer management

199. The Friends of Zion Graveyard group has attracted a number of regular, committed volunteers along with visitors who drop by less regularly. There is a monthly work day where graves are uncovered and recorded and regular gardening tasks are carried out.

200. The main risks to the site in terms of creating a wildlife-friendly site are overenthusiastic clearance of plants perceived as undesirable (nettles, ivy, bramble etc.), unsympathetic clearing/cleaning of grave markers, bringing in unsuitable plants or seeds from home and carrying out management tasks at the wrong time of year.

201. These risks can be mitigated by ensuring that all volunteers are made aware of the management plan vision and prescriptions and that tasks are scheduled and assigned at the correct times, following the annual tasks plan in Appendix E. All those who help with the care of the graveyard should be informed about the management aims and given access to the management plan and schedule (on the website may be easiest).

202. Volunteers can be engaged in monitoring and recording the wildlife present on site, either through planned surveys or through submitting occasional records.

9.2 Monitoring and recording

203. A species list compiled in 2018 is attached in Appendix B. This can be used as the basis for recording the plants and wildlife on site.

204. Volunteers can add to the species list by identifying new plants as they arrive naturally, and by logging species that are deliberately planted. Volunteers can also record other species including birds, mammals and invertebrates, depending on their skills and experience.

205. A wide variety of identification books are available as well as online groups such as iSpot https://www.ispotnature.org/, a website where members of the public can upload photographs and ask for help with species identification.

206. The iRecord system available both as a smartphone app and on the computer at https://www.brc.ac.uk/irecord/ should be used as a central repository for all records. This is a free system which can provide records to the National Biodiversity Network atlas, enabling data collected by volunteers to be used at a local and national scale. By using the Activity setting, an umbrella account for Zion Graveyard can be set up so that different peoples' records are collated under one name. More information is available within the help section of the website.

207. An annual 'bioblitz' could be held where every living thing is recorded within a set time period e.g. one day – similar bioblitzes have taken place at the Wardsend Cemetery and at Sheffield General Cemetery. Local experts could be invited to record more difficult groups such as invertebrates or fungi. The iRecord system can be set up to hold the records.

208. Fixed point photo monitoring could be implemented to record the changes in the site over time. This is where photographs are taken from the same point in the same location at the same time each year, with the intention of recording changes in vegetation over time.

209. A trail camera could be occasionally set out on site to record the nocturnal wildlife present, particularly to check if the site is being used by hedgehog.

9.3 Specialist surveys

210. Local experts could be invited to undertake specialist surveys of species that are less well-known, for example:

    a. Fungi surveys in spring and autumn

    b. Invertebrate surveys during the summer months

    c. Bat surveys using bat detectors or bat recording devices

211. Approaches could be made to Sheffield City Council's Ecology Unit or Sorby Natural History Society to enquire if any local experts would be willing to volunteer their time to carry out such surveys.

212. The records from specialist surveys should be added to iRecord.

10 Review

213. Although this management plan has been created for the short term (five years) and the longer term (25 years), the reality is that priorities will change, funding for works may become available, adjacent land ownership may alter, volunteers with specialist skills may move on etc.

214. Initially, the management plan should be informally reviewed at the end of every year, noting how the original plan could be improved, reviewing the success or failure of planting plans and reviewing the impact of the plan on wildlife. Adjustments to the plan can then be made.

215. Once all zones have had their graves investigated and uncovered, and a more permanent situation exists within the graveyard, the management plan should be formally reviewed to check that the vision statement and management aims are still current.

11 References

Caring for God's Acre – extensive collection of guidance documentation for managing churchyards and burial grounds for wildlife
www.caringforgodsacre.org.uk

GB Non-native Species Secretariat
http://www.nonnativespecies.org/home/index.cfm

Royal Horticultural Society website
https://www.rhs.org.uk/advice/

Sheffield City Council Online Proposals Map [land designations]
https://maps.sheffield.gov.uk/LocalViewExt/Sites/ProposalsMap/

Sheffield's Great Outdoors: Green and Open Space Strategy 2010-2030
https://sheffield.citizenspace.com/place-planning-1/2016-parks-countryside-customer-survey/supporting_documents/GreenandOpenSpaceStrategy20102030pdf405mb%201%201.pdf

Symes, Nigel & Day, John. A practical guide to the restoration and management of lowland heathland. RSBP, 2003 [bracken control chapter].

Wildlife Trusts. Build a bug mansion. https://www.wildlifetrusts.org/actions/how-build-bug-mansion

Wildlife Trusts. Wild About Gardens – advice on general wildlife gardening including bats, birds, invertebrates etc. in partnership with the RHS. https://www.wildaboutgardens.org.uk/

Yorkshire Wildlife Trust. Yorkshire living churchyard project: churchyard management booklet. Yorkshire Wildlife Trust, no date

QGIS, 2014. *QGIS 2.14.12-Essen,* s.l.: s.n.

12 Appendices

12.1 Appendix A – Location and Management Zones Map

Figure 12-1 Location Plan and Management Zones

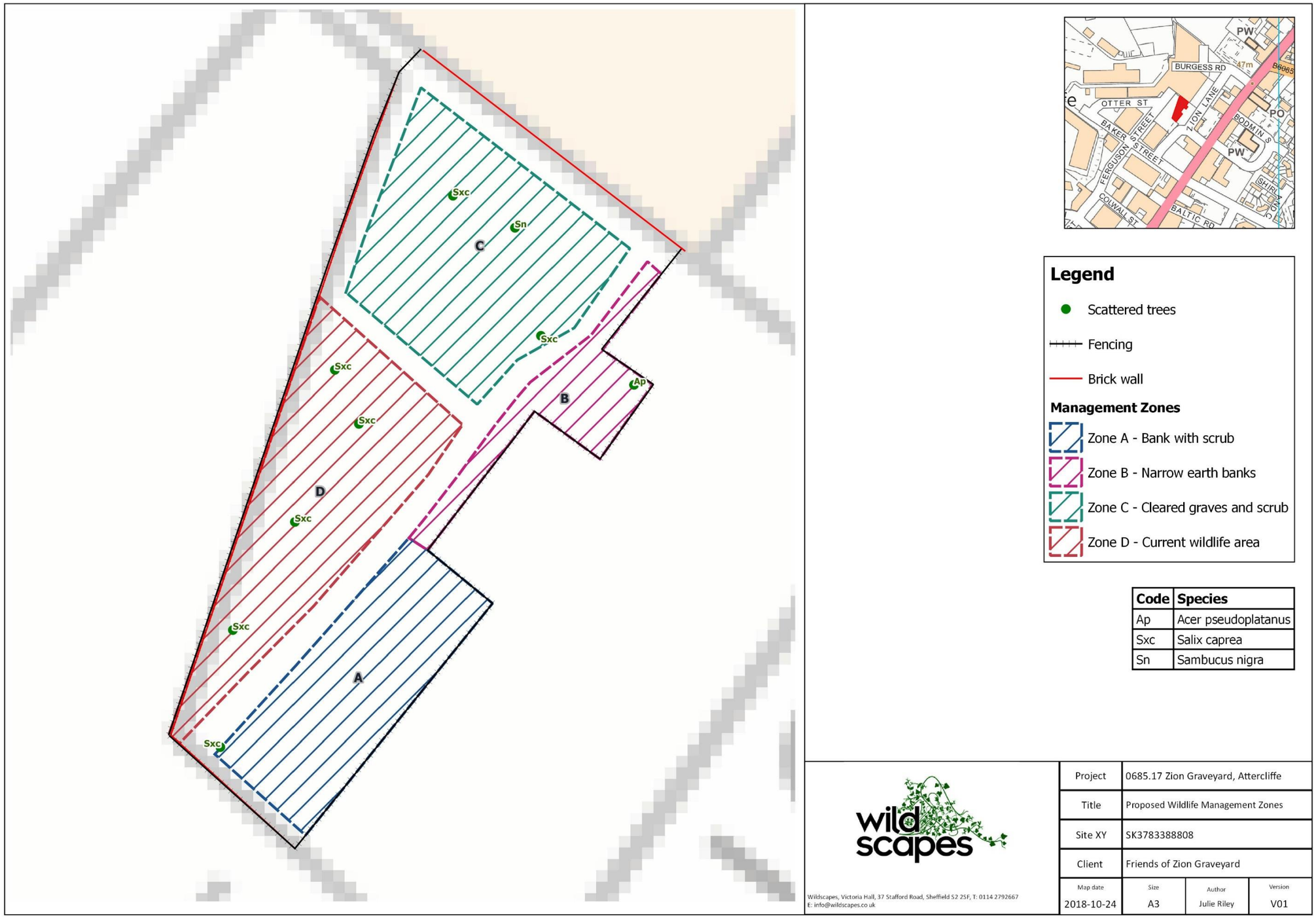
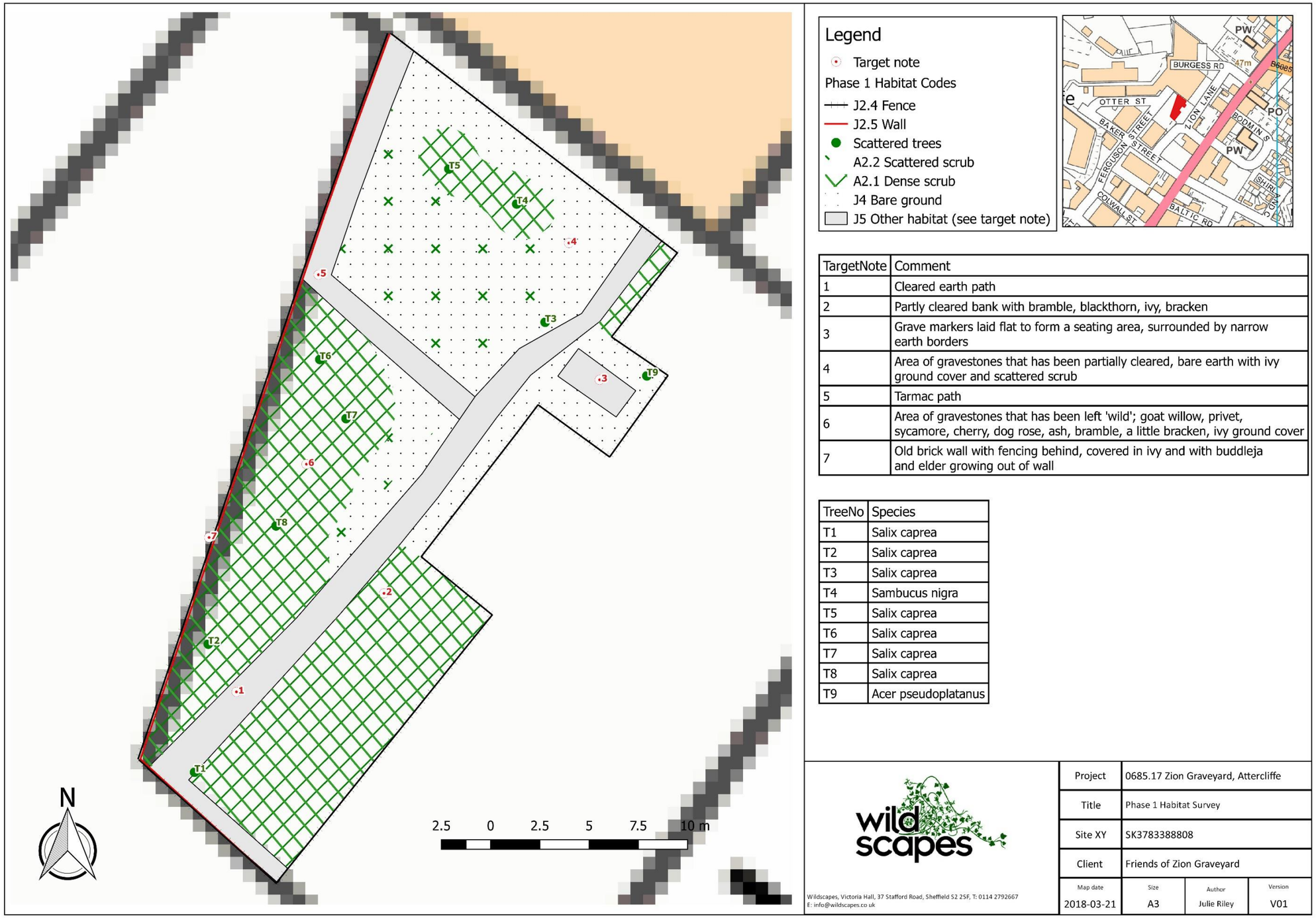


Figure 12-2: Phase 1 Habitat Map from PEA Report



Legend

- Target note

Phase 1 Habitat Codes

- J2.4 Fence
- J2.5 Wall
- Scattered trees
- A2.2 Scattered scrub
- A2.1 Dense scrub
- J4 Bare ground
- J5 Other habitat (see target note)

TargetNote	Comment
1	Cleared earth path
2	Partly cleared bank with bramble, blackthorn, ivy, bracken
3	Grave markers laid flat to form a seating area, surrounded by narrow earth borders
4	Area of gravestones that has been partially cleared, bare earth with ivy ground cover and scattered scrub
5	Tarmac path
6	Area of gravestones that has been left 'wild'; goat willow, privet, sycamore, cherry, dog rose, ash, bramble, a little bracken, ivy ground cover
7	Old brick wall with fencing behind, covered in ivy and with buddleja and elder growing out of wall

TreeNo	Species
T1	Salix caprea
T2	Salix caprea
T3	Salix caprea
T4	Sambucus nigra
T5	Salix caprea
T6	Salix caprea
T7	Salix caprea
T8	Salix caprea
T9	Acer pseudoplatanus

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Project	0685.17 Zion Graveyard, Attercliffe		
Title	Phase 1 Habitat Survey		
Site XY	SK3783388808		
Client	Friends of Zion Graveyard		
Map date	Size	Author	Version
2018-03-21	A3	Julie Riley	V01

12.2 Appendix B – Species Lists

12.2.1 Flora

Job Name / Number	0685.17 Zion Graveyard	**Date**	20/02/2018, 23/04/2018, 09/05/2018,08/08/2018, 29/09/2018

Ecologists	Julie Riley

Reference and Management Zones	**Habitat Type**	**Description**
Ref 1: Zones A, C & D	Dense scrub	Two main areas: a relatively large area left uncleared in the centre of the graveyard with dense shrubs and ivy (Zone D), and a partially cleared bank along the fenceline that has cut back bramble, ivy and firethorn (Zone A). Also a small patch of dense scrub towards the north wall with a large old laurel (Zone C). Where scrub has been cleared, bracken has started to invade (Zones A & D). Bindweed is also coming into the cleared areas in Zone A from adjacent land.
Ref 2: Zones B & C	Bare ground with weedy regrowth	Areas of gravestones and grave markers that have been partially cleared, characterised by weedy regrowth in bare soil and scrambling ivy.
Ref 3: Zones C & D	Scattered scrub	Generally ivy ground cover that has been partially cleared over gravestones (mostly Zone C), along with small amounts of bramble.
Ref 4: Throughout graveyard	Scattered trees	Large, multi-stemmed self-set trees, mostly goat willow, growing in between the gravestones - marked on the management map with individual species codes.
Ref 5: Zones A & B	Planted climbers and shrubs	Planted in spring/summer 2018 against the security fencing.

Species List

Habitat Reference	**Common Name**	**Scientific Name**	**DAFOR**	
1	Michaelmas daisy	*Aster novi-belgii*	**R**	
1	Jelly ear	*Auricularia auricula-judaea*	**R**	on elder
1	Butterfly bush	*Buddleja sp.*	**R**	
1	Bindweed	*Calystegia sepium*	**O**	
1	Tree form of cotoneaster	*Cotoneaster* sp.	**R**	
1	Willowherb	*Epilobium sp.*	**R**	
1	Ash (sapling)	*Fraxinus excelsior*	**R**	
1	Cleavers	*Galium aparine*	**F**	
1	Ivy	*Hedera helix*	**A**	
1	Hogweed	*Heracleum sphondylium*	**R**	
1	Yorkshire fog	*Holcus lanatus*	**R**	
1	Red deadnettle	*Lamium purpureum*	**R**	
1	Garden privet	*Ligustrum ovalifolium*	**R**	
1	Cherry laurel	*Prunus laurocerasus*	**R**	
1	Bracken	*Pteridium aquilinum*	**R**	
1	Firethorn sp.	*Pyracantha sp.*	**O**	Previously mis-identified as blackthorn
1	Field rose	*Rosa arvensis*	**R**	
1	Dog rose	*Rosa canina*	**R**	

1	Bramble	*Rubus fruticosus*	**O**	
1	Broad-leaved dock	*Rumex obtusifolium*	**R**	
1	Elder	*Sambucus nigra*	**R**	
1	Common nettle	*Urtica dioica*	**O**	
1	Ivy-leaved speedwell	*Veronica hederifolia*	**O**	
2	Garlic mustard	*Alliaria petiolata*	**R**	
2	Michaelmas daisy	*Aster novi-belgii*	**R**	
2	Bindweed	*Calystegia sepium*	**R**	
2	Rosebay	*Chamerion angustifolium*	**R**	
2	Spear thistle	*Cirsium vulgare*	**R**	
2	Cotoneaster	*Cotoneaster sp.*	**R**	seedlings
2	Hawthorn	*Crataegus monogyna*	**R**	seedling
2	American willowherb	*Epilobium ciliatum*	**R**	
2	Great willowherb	*Epilobium hirsutum*	**R**	
2	Willowherb	*Epilobium sp.*	**R**	
2	Fumitory sp.	*Fumaria sp.*	**R**	
2	Cleavers	*Galium aparine*	**O**	
2	Herb robert	*Geranium robertianum*	**R**	
2	Common cat's ear	*Hypochaeris radicata*	**R**	
2	Common ragwort	*Jacobaea vulgaris*	**R**	
2	Wall lettuce	*Lactuca muralis*	**R**	
2	Nipplewort	*Lapsana communis*	**R**	
2	Purple toadflax	*Linaria purpurea*	**R**	
2	Black medic	*Medicago lupulina*	**R**	
2	Brown roll rim fungus	*Paxillus involutus*	**R**	
2	Ribwort plantain	*Plantago lanceolata*	**R**	
2	Wild radish	*Raphanus raphanistrum*	**R**	
2	Soapwort	*Saponaria officinalis*	**R**	
2	Autumn hawkbit	*Scorzoneroides autumnalis*	**R**	
2	Oxford ragwort	*Senecio squalidus*	**R**	
2	Sow thistle sp.	*Sonchus sp.*	**R**	Tentative ID
2	Hedge mustard	*Sysimbrium officinale*	**R**	Tentative ID
2	Scentless mayweed	*Tripleurospermum inodorum*	**R**	
2	Common nettle	*Urtica dioica*	**R**	
2	Speedwell	*Veronica sp.*	**A**	
3	Ivy	*Hedera helix*	**A**	
3	Bramble	*Rubus fruticosus*	**O**	
4	Sycamore	*Acer pseudoplatanus*	**O**	Seedlings also present
4	Bird cherry	*Prunus padus*	**R**	
4	Goat willow	*Salix caprea*	**A**	
5	Japanese quince	*Chaenomeles japonica*	**R**	
5	Clematis	*Clematis tangutica*	**R**	
5	Winter jasmine	*Jasminum nudiflorum*	**R**	
5	Firethorn sp.	*Pyracantha sp.*	**R**	

12.2.2 Fauna

Species	**No.**	**Date**	**Time**	**Behavior *(in flight, call, foraging, basking, nesting, roosting)***	**Location description and/or waypoint**
Long tailed tit	3	20/02/2018	a.m.	Calling, foraging	Within trees/scrub at north edge
Dunnock	1	20/02/2018	a.m.	Foraging	Within trees/scrub. Amber listed on BoCC list.
Woodpigeon	1	20/02/2018	a.m.	Foraging	Along top of trees
Chaffinch	1	20/02/2018	a.m.	Foraging	Along shrubs growing out of wall
Great tit	1	20/02/2018	a.m.	Foraging	Within scrub area
Robin	1	23/04/2018	a.m.	Singing	Dense scrub with old cherry laurel
Blackcap	1	23/04/2018	a.m.	Singing	Dense scrub
Wren	1	23/04/2018	a.m.	Present	Moving through scrub
Wren	1	09/05/2018	p.m.	Present	
Blackcap	1	09/05/2018	p.m.	Present	
Robin	1	09/05/2018	p.m.	Present	
Chaffinch	1	09/05/2018	p.m.	Present	
Goldfinch	1	09/05/2018	p.m.	Present	
Robin	1	29/09/2018	p.m.	Present	Within scrub

12.3 Appendix C – Visitor Questionnaire and Results

12.3.1 Visitor questionnaire

Wildscapes is assisting the Friends of Zion Graveyard, Attercliffe to create a wildlife management plan for the site. It is important for us to gather the views of people who will ultimately be using the site, either as a committee member, regular volunteer or occasional visitor – or even just an interested party.

We would be very grateful if you could spare a few minutes to complete the following form. Your honest opinions and answers will be used to inform the management plan.

Visitor Type – please tick all that apply

Member of the public ❒ Committee member ❒ Friends Group member ❒

Educational/School visit ❒ Gardening volunteer ❒ History/event volunteer ❒

Other (please state) _____ ❒

Use of Site

How many times have you been to the site?

First visit ❒ 2-5 times ❒ 6-10 times ❒ 11-15 times ❒

16+ times ❒

What would you like to see the site used for?

Who would you like to have access to the site? Are there any restrictions to access?

How frequently should the site be open? How often would you personally like to visit?

How would you like to be involved with the site? Please tick all that apply.

As a general visitor	Arts and crafts activities
Gardening volunteer	Committee member
Grave clearance and recording	Fundraiser
Hosting visitors/events	Technical support e.g. website
Giving talks about the Graveyard	Historical research
Wildlife monitoring/recording	DIY/Maintenance
Writing articles	Other: please state below

Personal Reasons

Why do you want to be involved with the Graveyard?

What is/are the most important feature(s) of the Graveyard?

What do you like most about the Graveyard?

What do you like least about the Graveyard?

What is your vision of the Graveyard for the future?

Wildlife

Do you know that the aims for the Graveyard include making it a wildlife-friendly site?

YesNo

How do you think the Graveyard could be made wildlife-friendly?

Improvements

What physical improvements would you like to see to the site?

Any Other Comments

Please give us any other comments you have about Zion Graveyard and how you think it should be managed for the future.

Personal Information

This section is optional; it will be used to build up a general picture of users/visitors to the Graveyard.

To determine how far have you travelled to come here today, please provide your home postcode.

Which of the following best describes your situation?

- Full time paid/self-employed work (30+ hrs per week) ❒
- Full time home/child care ❒
- Part time paid/self-employed work ❒
- Full time education ❒
- Looking for work/unemployed ❒
- Retired ❒
- Other (please state)_____ ❒

Please tick the boxes that apply to you:

Gender		**Ethnicity**	
Male		White	
Female		Black other	
		Black African	
Age		Black Caribbean	
Child (6-12)		Asian/Chinese	
Teen (13-18)		Pakistan/Indian/Bangladeshi	
19-25		Other	
26-34			
35-44			
45-54			
Over 55			

Do you consider yourself to have a disability? Yes No

Thank you for taking the time to fill out this questionnaire.

Please attach your completed questionnaire to an email with the subject Zion Graveyard, and return to j.riley@wildsheffield.com.

12.3.2 Summary of respondent answers

Questionnaire #	A	B	C	D	E	F	G	H	I	J	K	L	M
Visitor type													
Member of the public													
Committee member					1	1			1	1	1	1	
Friends Group member	1	1	1	1			1	1					1
Educational/School													
Gardening volunteer													
History/event volunteer				1									
Other													
How many times have you been to the site?													
First visit													
2-5 times	1		1	1			1	1					
6-10 times		1											
11-15 times													1
16+ times					1	1			1	1	1	1	
What would you like to see the site used for?													
Preserve & appreciate part of Attercliffe's heritage	1	1								1	1	1	1
Historical education/uni & schools	1					1		1			1		1
Open days					1								
Maintain as a core component of church footprint/sabbath school/Zion Lane complex	1												
Appreciate the history of the people who lived and died here/family history & research/heritage study		1	1		1	1			1	1	1		1
Use for wildlife as well as people/Wildlife garden/natural history oasis/encourage wildlife/gentle gardening with a wildlife focus			1		1	1		1	1		1	1	
No answer				1									
Quiet contemplation/Peace & tranquillity/Pottering					1	1			1			1	
Educate people about Sheffield's part in the anti-slavery campaign & Mary Ann Rawson							1				1		
Arts & crafts events e.g. children's painting days, dramatic interpretation of characters buried here								1					
Who would you like to have access to the site? Any restrictions to access?													
Open to the public on a regular basis	1												
Interested public		1				1	1	1	1	1	1	1	1
Children should be supervised by adults		1			1								
Anyone (who respects this environment)			1	1	1								
No dogs					1								
Only open when supervised by volunteers due to previous vandalism/fly tipping					1	1		1	1			1	1
Older children only, not smaller children											1		
Friends Group members								1					
Not safe for children (trip hazards)												1	
How frequently should the site be open?													
At least 12 times a year	1												
As often as volunteers able to staff it/ As often as possible	1	1		1				1					

Twice a month		1								1	1	1	1
Also allow by special arrangement		1				1							1
Open all year round with no restrictions (i.e. not locked up)			1				1						
Twice a week with different opening periods across a month					1								
Once a month						1							
Every week if volunteers available to staff it									1				
Open for special events e.g. Heritage Days, Environment Week, MAR's birthday									1	1	1		1
Should not be open too often as there is a risk of visitor pressure impacting negatively on the wildlife											1		
How often would you personally like to visit?													
Occasionally	1										1		
Monthly		1											1
On an unrestricted ad hoc basis			1				1						
No answer				1									
Every week for a few hours					1								
For events								1					
Twice a week									1				
Slightly less frequently than now (as a committee member I attend just about all opening times)										1			
Once a fortnight												1	
How would you like to be involved with the site? (Tick all that apply)													
General visitor		1	1	1			1	1	1				
Gardening volunteer		1			1	1			1	1	1	1	1
Grave clearance and recording		1	1		1	1			1	1	1	1	
Hosting visitors/events		1			1	1				1	1	1	1
Giving talks about the Graveyard					1			1			1		1
Wildlife monitoring/recording				1		1				1	1		
Writing articles	1												1
Arts & crafts activities					1			1				1	
Committee member			1		1	1			1		1		
Fundraiser						1							
Technical support e.g. website											1		1
Historical research	1		1	1						1	1		1
DIY/Maintenance						1			1	1			
As a place to sit quietly												1	
Why do you want to be involved with the Graveyard?													
Interest in local history	1		1		1		1	1		1			1
Interest in Victorian social & architectural history/cemeteries	1									1			
Connection with Mary Anne Rawson/Slavery		1			1		1					1	
Dislike seeing graveyards neglected/save it from development			1								1	1	
Preserve a green space in Attercliffe/help provide ecological corridor				1					1				
Links with other committee members						1			1				
Connection to related historical buildings in the area e.g. Upper Wincobank Chapel/Wincobank Hill/Wardsend					1					1	1		
Interested in 'secret places'								1					
Researching the history of the people buried here											1		1
Generally kid-free (a break)											1		

What are the most important feature(s) of the Graveyard?													
Its survival/ part of Attercliffe history	1												1
Mary Anne Rawson's grave	1	1			1		1	1	1				
Burials dating back to the early 19thC	1												
Connection with Nonconformity in Sheffield from 17th to 20thC	1												
Whole area is important			1										
Its ecology/ wildlife in a built up area				1	1				1		1		
Its history/The site in its historical context through time				1		1			1	1		1	1
The graves/ People buried here should be allowed to rest in peace, undisturbed and safe in keeping with Victorian values/ concept of memorialisation											1	1	1
What do you like most about the Graveyard?													
Active interest in conserving Attercliffe heritage		1											
Calm, peaceful space		1				1			1				
Wildlife-friendly/wild area in an industrial setting				1	1								
The history/social history/religious history/ visitor reaction to finding family connections				1				1		1			1
Secluded location/oasis - different from its industrial surroundings					1				1			1	
That Mary Anne Rawson's grave is located here							1						
Small group of committed people saving/promoting the graveyard								1					
The process of discovery and uncovering what's here/										1	1		
What do you like least about the Graveyard?													
Difficulty of access	1												
Poor pathways													1
Lack of volunteers to help with grave clearance		1											
The intrusion of a private business/ issues with adjoining car sales business/neighbour's land not part of site				1	1	1			1	1		1	
The fencing - unsightly							1				1		
Gardening								1					
Ancillary politics, planning, disputes with neighbours, legal issues									1			1	
Dealing with conflicting priorities e.g. inappropriate planting, grave cleaning									1				
Debris from falling willow catkins											1		
Litter (although a lot has been cleared)												1	
Industrial setting												1	
Neglect over the years													1
What is your vision of the Graveyard for the future?													
Set a precendent to conserve adjacent Church, Institute and Sabbath School sites	1												
Conserved as a Victorian burial ground	1												
Recognised as an important site with MAW's grave restored and listed												1	

Managed wildlife/tidy but still natural/ more like a garden of rememberance	1	1											1
Church & Institute sites cleared & investigated by archaeologists	1												
Sabbath School adapted as heritage centre & community resource	1												
Pockets of growth (flowers, scent) to appreciate through the year		1											
Calm, peaceful place for anyone to visit			1										
Preserve it				1									
Wild garden					1								
Strong Friends group					1								
Programme of regular events					1								
Enough supporters to be able to open it daily for local residents and workers						1							
The fencing will be removed and replaced with something more in keeping with the original fencing, or that an artistic fence celebrating Sheffield's role in the anti-slavery campaign is erected.							1						
Part of a network of amazing places on a heritage map of Sheffield								1					
Keep it as it is now; graves need clearing but wild areas also need to stay, perhaps be moved around to allow historical objectives to be achieved									1				
Attractive to the public										1			
Want to see graves but maintain the wild feel. Need access around the graves (disrespectful to walk over them)											1	1	
Look cared for but be sustainable												1	
Do you know that the aims for the Graveyard include making it a wildlife-friendly site?													
Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
No													
How do you think the Graveyard could be made wildlife-friendly?													
No idea/no answer	1							1					
Bird boxes/ bug hotels/dead timber/ bat boxes		1							1	1			1
Wildlife friendly habitat		1											
Take advice from wildlife charities & implement their suggestions			1	1								1	
No dogs					1								
Zoned areas					1								
No pesticides					1								
Appropriate gardening e.g. hand weeding unwanted growth					1								
Plant insect-friendly native species					1								1
Active management/sympathetic management						1				1			
Volunteers already doing a great job							1						
Make more scenic & private by covering fencing with planting									1		1		
Put in native plants, wildflowers for colour, bulbs, informal feel										1		1	
Avoid planting on the graves, don't make it too 'managed' looking										1			
Keep it as it is - let the robin and the wren keep their homes											1		

Plant things birds like to eat with edible fruits. Keep it green with a bit of colour - more of a woodland feel - not municipal bedding											1		
Keep a green border around the edge											1		
Communicate with volunteers/visitors to explain that it needs to look wild in places												1	
Clearer understanding of what wildlife is there, why it's important and how to nurture it												1	
What physical improvements would you like to see to the site?													
Easy physical access especially for those with mobility issues/better entrance arrangements	1									1		1	
Professional interpretation boards	1			1									1
A shelter (wet weather cover)	1				1								
A toilet	1												
Seating/benches - but protecting grave markers		1			1						1	1	
Clear original entrance to be safe for visitors		1											
Remove intrusive litter				1									
Care for the plant life				1									
Better paths - but don't lose the character of the site. How to manage cleared earth paths					1			1			1	1	1
Improved entrances with signage/ Signage outside advertising site								1					
Storage					1								
Repair & improve setting of MAW tomb					1				1				
Better screens to fences/ better or different fencing							1					1	
Area for groups somewhere not damaging to the graveyard itself (maybe up near entrance)										1	1		
Conserve the memorials now that they have been uncovered to avoid issues like delaminating										1			
Any other comments													
Congratulations to Penny & colleagues for work achieved so far	1												
Current team doing well & should rely on their expertise for development		1											
Ensure its quality as a green space in the ecological corridor in Attercliffe is enhanced and protected				1									
Need more active volunteers beyond the committee who will help organise and publicise events					1							1	
Need more trustees with relevant experience to ensure continuation					1								
Encourage local businesses to improve the street scene							1						
Remove unauthorised signs							1						
Ensure cobbled street remains and is not tarmacked							1						
Smal groups responsible for organising different issues/areas/events/activities								1					
Need to decide what to do with graves not yet uncovered - maybe uncover, log & photograph, cover back over											1		

Site won't ever be able to sustain paid staff so everything has to be low cost and manageable by volunteers												1	
Explanatory leaflet for wildflowers - which are useful and why												1	

12.4 Appendix D – Suggested Planting

12.4.1 Trees, shrubs and climbers

Planting suggestions to screen the security fencing

Scientific name	Common name	Height	Spread	Flower & berry colour	Management considerations
Clippable/trainable shrubs					
Berberis darwinii	Barberry	2.5-3m	2.5-3m	Flowers mid to late spring, orange-yellow. Blue berries in autumn.	Evergreen. Makes a highly ornamental formal hedge. Other barberry species e.g. *B. thunbergii* would also be good, but they are usually deciduous.
Chaenomeles x superba	Flowering quince	90-180cm	1.5-1.8m	Flowers mid-spring to early summer, white, pink, crimson or scarlet. Fruits in autumn.	Deciduous. Tolerate full sun or partial shade and require well drained soil. Need trimming after flowering so may lose the fruit.
Ilex aquifolium	Holly	15-22m (but clipped to size)	4.5-7.5m (but clipped to size)	Insignificant flowers; red berries.	Evergreen. Plants are male or female. Full sun/part shade, moist well-drained soil. Can select varieties with variegated leaves. Will need clipping back.
Pyracantha	Firethorn	2.5-4.5m	3-4.5m	White flowers in early summer; orange to red berries in autumn, very attractive to birds.	Evergreen. Spiny. Full sun/partial shade. Fertile well-drained soil. Select a fully hardy variety e.g. 'Golden Charmer', 'Orange Glow', Soleil D'or' or 'Teton'.Will need clipping back but very adaptable.
Taxus baccata	Yew	9-22m (but clipped to size)	7.5 – 9m (but clipped to size)	Straw/green flowers in spring. Red berries.	Evergreen. Plants are male or female. Tolerates a wide range of conditions but needs free draining soil. Would suit a churchyard situation. Slow growing & respond well to pruning. All parts of the Yew are toxic.
Climbing species					
Clematis tangutica	Bell-shaped clematis	4.5-6m	4.5-6m	Late summer to early autumn flowers followed by white, silky seedheads.	Deciduous. This type of clematis has bell-shaped yellow flowers late in the season, good for late nectar. Needs shaded roots in moist but well drained soil. Much less vigorous than *C. vitalba*. Various cultivars available e.g. 'Bill Mackenzie'.
Clematis vitalba	Old man's beard/traveller's joy (native clematis)	30m	15m	Fluffy white seedheads in autumn and winter are the main interest.	Deciduous, prefers full sun, hardy, prefers well drained/light soil. Vigorous and will scramble up shrubs and into trees, forms dense untidy cover so bear this in mind! Can be cut back in early spring but will grow 5m by summer. Possibly too large for the site – can consider *C. tangutica* instead.
Hedera helix	Ivy	8-12m	2.5-4m	Pale green; black berries.	Evergreen. Already present on site. Could spread if not managed. Various cultivars with interesting leaf shapes and colours available.
Humulus lupulus	Hop	4.5-7.5m	4.5-7.5m	Spring to summer flowers, autumn fruits.	Deciduous, fully hardy, tolerates full sun or partial shade and prefers moist but well-drained soil. Can get yellow-leaved cultivars e.g. 'Aureus'.

Jasminum nudiflorum	Winter jasmine	3-5m	3-5m	Yellow flowers in winter	Deciduous, main interest is yellow flowers in winter. Hardy, prefers any aspect except dense shade. Needs a fertile well-drained soil. Prune in spring after flowering.
Lonicera periclymenum	Honeysuckle (native variety)	6-7.5m	6-7.5m	Fragrant flowers in mid to late summer, yellow/green. Berries in autumn.	Deciduous, fully hardy. Tolerate full sun or partial shade, need thinning out of old wood after flowering. If too shaded at the base can race to create a tangle at the top of the fence; not a 'neat' plant.
Passiflora caerulea	Passion flower	6-9m	6-9m	Flowers in mid to late summer, fruits intermittent.	Predominantly evergreen, make sure to get a frost hardy cultivar. Tolerate full sun or partial shade & require fertile, moist but well-drained soil in a sheltered area. Can cut right back in winter and get a fresh tangle of growth each year.
Climbing or rambling roses (for inset area)					
Rosa 'Frances E. Lester'	Rambling rose	4-8m	2.5-4m	White and pale pink flowers, small orange hips.	A rose for plenty of space, grow in full sun with fertile, humus-rich, moist but well-drained soil. Vigorous rambler suitable for growing into trees. Tolerates poor soil, shade and a north aspect, suited for climbing into trees
Rosa 'Rambling Rector'	Rambling rose	4-8m	4-8m	Fragrant semi-double white flowers, small red hips.	A rose for a large space; grows best in full sun with fertile, humus-rich, moist but well-drained soil. For best flowering apply a balanced fertiliser and mulch in late winter or early spring. Tolerant of poor soil, shade and a north aspect; ideal for climbing into a tree
Rosa helenae	Climbing rose	4-8m	2.5-4m	Fragrant single white flowers, clusters of orange-red hips.	Needs a sheltered position in full sun or light shade. Grow in full sun with fertile, humus-rich, moist but well-drained soil. For best flowering apply a balanced fertiliser and mulch in late winter or early spring and a balanced fertiliser again in early summer. Tolerant of a north-facing aspect
Rosa 'Altissimo'	Climbing rose	2.5-4m	1.5-2.5m	Bright red single flowers, repeat flowering.	Best grow as a pillar rose or on trellis in full sun and moderately fertile, humus-rich, moist but well-drained soil. For best flowering apply a balanced fertiliser and mulch in late winter or early spring and a balanced fertiliser again in early summer. Tolerant of poor soil.
Rosa filipes 'Kiftsgate'	Rambling rose	8-12m	4-8m	Sprays of fragrant white flowers, masses of tiny orange-red hips.	Vigorous. This robust, rampant rambler will grow in wide range of situations but is best grown in full sun with fertile, humus-rich, moist but well-drained soil It is tolerant of poor soil, shade and is ideally suited to climbing into trees, covering buildings or walls wherever space allows
Rosa moschata	Rambling rose	2.5-4m	2.5-4m	Clusters of musk-scented single white flowers, orange-red hips.	Grows best in fertile, humus-rich, moist but well-drained soil in a sunny, open position, though will tolerate some shade. Mulch in late winter and, to improve flowering, apply a balanced fertiliser in late winter or early spring.

Rosa 'Polyantha Grandiflora'	Rambling rose	4-8m	2.5-4m	Lightly scented single to semi-double white flowers, orange-red hips.	Grows best in fertile, humus-rich, moist but well-drained soil in a sunny, open position, but tolerates a wide range of conditions. Mulch in late winter and, to improve flowering, apply a balanced fertiliser in late winter or early spring.

Shrub/Tree possibilities (stand-alone)					
Buddleja davidii	Butterfly bush	2.5-3.7m	2.5-3.7m	Scented flowers are white, pink or purple.	Deciduous. Prefers open sunny position but very resilient, needs well drained soil. Would need management to keep it cut back to size.
Hamamelis	Witch hazel	3-3.7m	3-3.7m	Flowers provide winter interest, yellow, orange or red.	Deciduous. Tolerates full sun or partial shade, requires well drained, moist netural to acid soil.
Ilex aquifolium	Holly	15-22m (but clipped to size)	4.5-7.5m (but clipped to size)	Insignificant flowers; red berries.	Evergreen. Plants are male or female. Full sun/part shade, moist well-drained soil. Can select varieties with variegated leaves. Will need clipping back.
Malus sylvestris	Crab apple	8-12m	4-8m	Pink-tinged white flowers, colourful fruits	Grow in moderately fertile soil; will tolerate partial shade. Ideal specimen trees for small areas. Many cultivars are available.
Sorbus aucuparia	Rowan	12-15m	4.5-7.5m	White flowersin spring; bright red berries and colourful foliage in autumn	Deciduous. Full sun or partial shade. Requires well drained soil. There are cultivars designed for gardens that do not grow as tall.
Taxus baccata	Yew	9-22m (but clipped to size)	7.5 – 9m (but clipped to size)	Straw/green flowers in spring. Red berries.	Evergreen. Plants are male or female. Tolerates a wide range of conditions but needs free draining soil. Would suit a churchyard situation. Slow growing & respond well to pruning. All parts of the Yew are toxic.

Native hedging species					
Acer campestre	Field maple	Up to 12m if left uncut	up to 4-8m	Small green flowers, winged fruits	Grow in a fertile, moist but well-drained soil in full sun or part shade
Cornus sanguinea	Dogwood	1.5-2.5m	1.5-2.5m	Small white flowers, black berries, good winter stem colour	Grows in a range of soils from poor or well-drained to moisture retentive in sun or partial shade
Corylus avellana	Hazel	4-8m	4-8m	Yellow male catkins, tiny red female flowers, nuts.	Large spreading shrub.
Crataegus monogyna	Hawthorn	4-8m	4-8m	Cream flowers, dark red berries.	Easily managed as a specimen tree or as hedging.
Ilex aquifolium	Holly	15-22m (but clipped to size)	4.5-7.5m (but clipped to size)	Insignificant flowers; red berries.	Evergreen. Plants are male or female. Full sun/part shade, moist well-drained soil. Can select varieties with variegated leaves. Will need clipping back.

Prunus spinosa	Blackthorn	2.5-4m	2.5-4m	Small white flowers, black/purple fruits.	Easy to grow native shrub or small tree, that can be used for hedging. Grows in any moist well-drained soil in full sun. Prone to suckering.
Rosa arvensis	Field rose	2.5-4m	1.5-2.5m	Slightly fragrant single white flowers, oval orange-red hips.	Ideal for groundcover or rambling. Grow in full sun with moderately fertile, humus-rich, moist but well-drained soil. Tolerant of poor soil and shade; good for woodland or hedgerow planting. Good for ornamental fruits.
Rosa canina	Dog rose	2.5-4m	1.5-2.5m	Pale pink or white flowers, ovoid red fruits.	Grow in full sun with moderately fertile, humus-rich, moist but well-drained soil. Tolerant of poor soil. Large thorns - place away from walkways.
Sambucus nigra	Elder	4-8m	2.5-4m	Cream flowers, sprays of small black berries.	Easy to grow in moderately fertile, humus-rich, moist but well-drained soils.
Ulmus glabra	Wych elm	Up to 20m if left uncut	up to 7.5m	Flowers early, making it a good source of nectar	Tolerates some exposure, full sun to part shade, well drained but not too dry

12.4.2 Wildflowers and bulbs

Planting suggestions for bare soil banks and areas between graves

Scientific name	Common name	Flower colour	Flowering time	Notes	Banks/Graves
Wildflowers					
Ajuga reptans	Bugle	Blue/purple	Spring/summer	Good ground cover, to 15cm tall	Graves
Alliaria petiolata	Garlic mustard	White	Spring/summer	Full or partial shade. Prefers rich damp soil.	Graves
Aquilegia vulgaris	Columbine	Purple	Spring/summer	Full sun or partial shade.	Banks or Graves
Campanula trachelium	Nettle-leaved bellflower	Purple	Summer	Full sun or partial shade	Banks
Centaurea nigra	Common knapweed	Purple	Summer	Full sun or partial shade, to 75cm	Banks
Circea lutetiana	Enchanter's nightshade	White	Autumn	Carpet-forming, could become invasive	Graves
Convallaria majalis	Lily of the valley	White	Spring	Part or full shade, humus rich soil. Can quickly become invasive.	Graves
Digitalis purpurea	Foxglove	Purple, white, pink	Summer	Full sun or partial shade	Banks or Graves
Eranthis hyemalis	Winter aconite	Yellow	Winter/spring	Part shade, humus rich soil	Graves
Fragaria vesca	Wild strawberry	White	Spring	Full sun; put at edge of inset area in Zone B	Banks
Galium odoratum	Sweet woodruff	White	Spring	Partial shade, mat forming - can become invasive	Graves
Geranium robertianum	Herb robert	Pink	Summer/autumn	Partial shade; may naturally arrive as very common	Graves
Geum urbanum	Wood avens	Yellow	Late spring to autumn	Partial shade; may naturally arrive as very common	Graves

Lamium album	White deadnettle	White	Late spring to autumn	Partial shade.	Banks or Graves
Leucanthemum vulgare	Oxeye daisy	White & yellow	Spring/summer	Full sun or partial shade, 50cm+	Banks
Linaria purpurea	Purple toadflax	Purple	Summer/autumn	Full sun. Already present in seed bank in Zone B.	Banks
Lunaria annua	Honesty	Purple	Spring/summer	Full sun or partial shade.	Banks or Graves
Myosotis sylvatica	Wood forget-me-not	Blue	Spring/summer	Partial shade	Graves
Oxalis acetosa	Wood sorrel	White	Spring	Partial shade.	Graves
Polygonatum x hybridum	Solomon's seal	White	Spring/summer/autumn	Part or full shade, humus rich soil	Graves
Primula veris	Cowslip	Yellow	Spring	May be best to establish as plug plants	Banks
Primula vulgaris	Primrose	Yellow	Spring	Stick to the native species; avoid coloured cultivars	Banks
Prunella vulgaris	Self-heal	Purple	Summer/autumn	Full sun or partial shade, to 30cm. Mat forming	Banks or Graves
Pulmonaria officinalis	Lungwort	Pink/purple/blue	Spring	Semi-evergreen, full or partial shade, to 30cm tall	Graves
Sanicula europaea	Sanicle	White	Late spring to autumn	Partial shade, moist soil.	Graves
Silene dioica	Red campion	Pink	Late spring to autumn	Hedgerows and semi-shaded places	Graves
Stachys officinalis	Betony	Purple	Summer/autumn	Partial shade, to 60cm	Banks
Stachys sylvatica	Hedge woundwort	Purple	Summer/autumn	Partial shade, prefers moist soil.	Banks or Graves
Stellaria holostea	Greater stitchwort	White	Spring/summer	Partial shade, prefers moist soil.	Graves
Torilis japonica	Upright hedge parsley	White	Summer/autumn	Partial shade. Cow parsley *Anthriscus sylvestris* is similar, earlier flowering and likely already present on site.	Banks
Viola riviniana	Dog violet	Purple	Spring	Suitable for full shade. Can spread by seed	Graves

Non-native but with good wildlife value or suitable for Victorian 'secret garden' feel					
Helleborus niger	Christmas rose	White	Winter/spring	Clump-forming, to 30cm tall.	Graves
Helleborus sp.	Hellebore	Range of colours	Winter/spring	A number of options exist; single flowered species are most useful for invertebrates.	Graves
Origanum vulgare	Oregano/wild marjoram	Pale pink	Summer/autumn	Excellent for invertebrates. Put in lightest area on inset banks in Zone B.	Banks
Rosmarinus officinalis	Rosemary	Pale blue to white	Spring/summer	Evergreen, scented. Put in lightest area on inset banks in Zone B.	Banks
Tanacetum parthenium	Feverfew	White & yellow	Autumn	Needs full sun, put in lightest areas on inset banks in Zone B.	Banks
Tellima grandiflora	Fringe cups	Cream	Spring/summer	Can be invasive/readily self-seeds. To 75cm.	Banks or Graves

Bulbs					
Anemone nemorosa	Wood anemone	White to pink	Spring	Prefer moist areas. Ensure local provenance.	Graves
Cyclamen coum	Autumn cyclamen	White, pink	Autumn/winter	Non-native. Mice may steal tubers.	Graves
Ficaria verna	Lesser celandine	Yellow	Spring	Prefer moist areas. Ensure local provenance.	Graves
Galanthus nivalis	Snowdrop	White with green markings	Spring	Non-native. Sun to part shade.	Graves
Hyacinthoides non-scripta	English bluebell	Blue	Spring	Ensure local provenance.	Graves

12.4.3 Grasses and ferns

Planting suggestions for bare soil banks and areas between graves

Scientific name	Common name	Notes	Banks/Graves
Grasses			
Brachypodium sylvaticum	False wood brome	Part shade	Graves
Cynosurus cristatus	Crested dogs tail	Sun to part shade	Banks or Graves
Festuca rubra	Red fescue	Part shade	Banks or Graves
Milium effusum	Wood millet	Delicate grass. Partial to full shade.	Graves
Poa nemoralis	Wood meadow grass	Slow to colonise. Part shade.	Banks or Graves

Ferns			
Asplenium scolopendrium	Hart's tongue fern	Native. Full shade.	Graves
Blechnum spicant	Hard fern	Native, evergreen. Part shade, moist ground.	Graves
Dryopteris filix-mas	Male fern	Native. Full shade. Tolerant of most conditions.	Graves

12.5 Appendix E – Annual Plan and Five Year Plan

12.5.1 Annual Work Plan

Key	What	Action	J	F	M	A	M	J	J	A	S	O	N	D
	Tree inspection	Check all trees and update records												
	Tree/shrub pruning (inc. hedges)	Prune trees and shrubs if needed												
	Prune rambling roses	Maintenance prune after flowers/hips in late summer. Renovation prune in late winter.												
	Prune climbing roses	Maintenance prune between Dec & Feb and tie in new growth in spring.												
	Planted climbers/ trained shrubs along fence	Carry out care/maintenance as detailed on plant labels. (1)												
	Remove tree seedlings/saplings	Remove unwanted seedlings/ saplings by hand												
	Ivy management	Cut back ivy ground cover/ cut base of unwanted ivy growing up trees/wall												
	Plant new trees & shrubs	Plant new saplings including pot-grown and bare-root												
	Remove bracken	Hand-cutting and digging out of bracken												
	Remove bindweed	Digging out roots and hand-weeding												
	Cut back nettles	Cut down the nettle patch to prevent seeding - before flowering.												
	Clean bird boxes	Remove contents of nest box, remove debris from corners, sterilise with boiling water												
	Compost bin	Rotate use, mix/empty												
	Wood pile	Create/top up wood piles												
	Bug hotels	Create/top up bug hotels												

(1) Care labels for each planted species should be checked and tasks added to this annual plan.

12.5.2 Five Year Work Plan

Activity	Year 1	Year 2	Year 3	Year 4	Year 5	
Build compost bin in Zone D						can be re-sited when the higher ground at the S end of Zone D is excavated
Remove ivy ground cover from Zone C & D						will become an exercise in keeping on top of cleared areas
Clear undesirable saplings from Zone D						once bulk cleared, will become part of annual plan to identify and remove unwanted seedlings
Remove/control bracken from Zone A						
Remove/control bracken from Zone D						
Arborist tree assessment						carry out ever 2-5 years as dictated by public liability insurance
Replace cherry laurel with native evergreen species						
Plant climbing/rambling roses in Zone B						
Install wood pile in Zone C						
Plant additional shrubs in Zone C if feasible						
Plant rose/clematis in Zone C if desired						
Sow seeds/plant bulbs/plants						

12.6 Appendix F – Plants listed on Schedule 9 of the Wildlife and Countryside Act

Part II
Plants

Common name	Scientific name	England & Wales	Scotland
Alexanders, Perfoliate	*Smyrnium perfoliatum*	✓	
Algae, Red	*Grateloupia luxurians*	✓	
Archangel, Variegated Yellow	*Lamiastrum galeobdolon subsp. argentatum*	✓	
Azalea, Yellow	*Rhododendron luteum*	✓	
Balsam, Himalayan	*Impatiens glandulifera*	✓	
Cotoneaster	*Cotoneaster horizontalis*	✓	
Cotoneaster, Entire-leaved	*Cotoneaster integrifolius*	✓	
Cotoneaster, Himalayan	*Cotoneaster simonsii*	✓	
Cotoneaster, Hollyberry	*Cotoneaster bullatus*	✓	
Cotoneaster, Small-leaved	*Cotoneaster microphyllus*	✓	
Creeper, False Virginia	*Parthenocissus inserta*	✓	
Creeper, Virginia	*Parthenocissus quinquefolia*	✓	
Dewplant, Purple	*Disphyma crassifolium*	✓	
False-acacia	*Robinia pseudoacacia*		✓
Fanwort (or Carolina Water-Shield)	*Cabomba caroliniana*	✓	✓
Fern, Water	*Azolla filiculoides*	✓	✓
Fig, Hottentot	*Carpobrotus edulis*	✓	✓
Garlic, Three-cornered	*Allium triquetrum*	✓	
Hogweed, Giant	*Heracleum mantegazzianum*	✓	✓
Hyacinth, Water	*Eichhornia crassipes*	✓	✓
Kelp, Giant	*Macrocystis angustifolia*	✓	✓
Kelp, Giant	*Macrocystis integrifolia*	✓	✓
Kelp, Giant	*Macrocystis laevis*	✓	✓
Kelp, Giant	*Macrocystis pyrifera*	✓	✓
Kelp, Japanese	*Laminaria japonica*	✓	✓
Knotweed, Giant	*Fallopia sachalinensis*	✓	
Knotweed, Hybrid	*Fallopia japonica x Fallopia sachalinensis*	✓	
Knotweed, Japanese	*Fallopia japonica*	✓	
Knotweed, Japanese	*Polygonum cuspidatum*		✓
Leek, Few-flowered	*Allium paradoxum*	✓	✓
Lettuce, water	*Pistia stratiotes*	✓	✓
Montbretia	*Crocosmia x crocosmiiflora*	✓	
Parrot's Feather	*Myriophyllum aquaticum*	✓	
Pennywort, Floating	*Hydrocotyle ranunculoides*	✓	
Potato, Duck	*Sagittaria latifolia*	✓	
Primrose, Floating Water	*Ludwigia peploides*	✓	
Primrose, Water	*Ludwigia grandiflora*	✓	
Primrose, Water	*Ludwigia uruguayensis*	✓	
Rhododendron	*Rhododendron ponticum*	✓	
Rhododendron	*Rhododendron ponticum x*	✓	

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	Rhododendron maximum		
Rhubarb, Giant	*Gunnera tinctoria*	✓	
Rose, Japanese	*Rosa rugosa*	✓	
Salvinia, Giant	*Salvinia molesta*	✓	✓
Seafingers, Green	*Codium fragile*	✓	
Seafingers, Green	*Codium fragile tomentosoides*		✓
Seaweed, Californian Red	*Pikea californica*	✓	✓
Seaweed, Hooked Asparagus	*Asparagopsis armata*	✓	✓
Seaweed, Japanese	*Sargassum muticum*	✓	✓
Seaweeds, Laver (except native species	*Porphyra spp (except P. amethystea, P. leucosticte, P. linearis, P. miniata, P. purpurea & P. umbilicalis)*	✓	✓
Shallon	*Gaultheria shallon*		✓
Stonecrop, Australian Swamp (or New Zealand Pigmyweed)	*Crassula helmsii*	✓	✓
Wakame	*Undaria pinnatifida*	✓	✓
Waterweed, Curly	*Lagarosiphon major*	✓	✓
Waterweeds	*All species of the genus Elodea.*	✓	

12.7 Appendix G – Bracken Removal

216. Bracken dominance is reduced through repeated cutting. The optimum time to cut is when bracken has just reached maturity, at around 50-75cm high. This is late June or July depending on growth rates and seasonal variations.

Cutting

217. Cutting reduces energy in the rhizomes by preventing photosynthesis in the frond, following depletion during frond development. Cutting also stimulates the rhizome to put up new fronds from dormant buds. These new fronds should be cut as they reach maturity, usually in late August, further depleting the rhizome. Any more growth is caught by frost or senesces before the fronds mature.

218. Bracken spores are potentially carcinogenic if inhaled regularly and repeatedly. Bracken is thought to rarely spore in this area of the country, but fronds should be checked for sori (spore producing zones on the back of leaves) before management takes place. Spores are released in late summer – cutting should either be avoided if spores are being released, or a suitable dust mask should be worn as a precaution.

219. Bracken that is cut once in a year is likely to be stunted the following year, but cutting twice in a year significantly increases the impact. Bracken should be cut initially in late June/July, followed by a second cut six weeks later.

220. Frond density in the year following the initial cut may be high as the plant responds to the stress of cutting. A further two cuts in the second year are likely to result in relatively sparse, stunted growth in the third season, unless there are large storage rhizomes present. Cutting should continue in subsequent years to achieve and maintain very low levels of cover. If cutting is abandoned, bracken re-colonises within five to seven years.

Pulling

221. Hand pulling is only practical for very sparse bracken. It is labour intensive and needs to be done consistently to be effective. Bracken sap has carcinogenic properties and skin contamination with the sap must be avoided, using, for example, strong, non-absorbent gloves and an overall. Bracken stems can also splinter and cut hands, reinforcing the need for gloves.

Chemical options

222. Herbicides should be avoided if possible, however if bracken removal is required and mechanical methods are not proving effective, there are chemical controls available. Professional advice should be sought from Wildscapes or a similar contractor as the chemicals available are subject to regulation and may need special equipment to work safely within the graveyard.