

# Chester Millennium Greenway, NWS 134 (Chester Railway Path, Route 5)

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## Habitat Management Plan

FEBRUARY 2016

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Head Office  
Sustrans  
2 Cathedral Square  
College Green  
Bristol  
BS1 5DD

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Registered Charity No. 326550 (England and Wales) SC039263 (Scotland)  
VAT Registration No. 416740656

### Report prepared by;

Bernie Higgins MCIEEM (Ecologist, Greener Greenways)  
The Walker Building, 58 Oxford Street, Digbeth, Birmingham, B5 5NR  
Telephone: 0121 633 5519

### Report Checked by;

David Watson MCIEEM (Sustrans Ecologist)  
The Walker Building, 58 Oxford Street, Digbeth, Birmingham, B5 5NR  
Telephone: 0121 633 5500

### For further information please contact;

Alice Irvine (Area Manager; North West)  
5th Floor, Hanover House, 30-32 Charlotte Street, Manchester, M1 4FD  
Telephone: 07799 037 044

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# Executive Summary

This document is the habitat management plan for Chester Millennium Greenway, also known as the Chester Railway Path) in Cheshire. This is 14.2km (8.8 mile) attractive open cycleway runs from Station Lane, Mickle Trafford out into the Wirral's rich arable farmlands to Hawarden Bridge train station at Connah's Quay along a disused railway line. The Mickle Trafford to Dee Marsh railway line once carried steel to and from the steelworks on the banks of the Dee at Hawarden Bridge. It is part of National Cycle Network Route 5.

In order to provide an initial assessment of the potential ecological baseline of the route a desk study and Phase 1 Habitat Survey were conducted in September and October 2013 and May 2014.

Three internationally important sites were identified within 5km of the greenway. These were the Dee Estuary, River Dee and Bala Lake, and Buckley Newt Sites and also incorporated seven SSSI). The desk study also identified the presence of a Local Nature Reserve within 5km of the greenway.

When considered as a whole, the mosaic of semi-natural habitats along the greenway is considered to have moderate ecological value at a regional level. This is because of its structural diversity, overall area, and potential function as a wildlife corridor. The most valuable habitats within the mosaic are the patches of semi-improved neutral grassland along the route which may support populations of notable invertebrates and may form part of a wider network of valuable grasslands in the landscape. These patches were also considered to be of moderate value at a regional level. The woodland patches are considered to have moderate ecological value at a local scale as they are semi-mature. Other habitats within the mosaic are less valuable in isolation but still form an important component of the habitat mosaic and contribute to the structural and species diversity. Also of note on the route was the presence of invasive non-native species including Japanese knotweed and giant hogweed, and other introduced species such as snowberry, gunnera and laurel.

The habitat mosaic and in particular the patches of semi-improved grassland are considered to be potentially important for invertebrates and they are therefore are a significant consideration of future management along this route. Eight butterfly species and a soldier beetle *Cantharis* sp., were recorded during the 2014 surveys. The greenway provides foraging and sett building habitat for badger and two possible badger setts were recorded along the route. Nesting and foraging habitat for a variety of generalist bird species are present along the greenway. Thirty bird species were directly recorded during the 2014 surveys. The route may also support amphibians, reptiles and a variety of mammal species including bats, hedgehog and water vole. Further survey would be required to determine what species are present. Rabbits and shrew were recorded during the 2014 surveys. Species with statutory protection may be present, and therefore certain actions would need further assessment by a suitably experienced ecologist before works could proceed.

The aim of the habitat management plan is to keep the route accessible for all users whilst also maximising the value of the route to nature conservation by:

- *Preserving, enhancing and extending the better quality grassland habitats on the route by:*
  - *Improving the diversity of target patches of poor-semi-improved grassland;*
  - *Maintaining and increasing the extent of patches of semi-improved grassland;*
- *Preserving, enhancing and extending the woodland habitats on the route by:*
  - *Improving the structural and species diversity of woodland habitat; and,*
- *Maintaining and increasing the structural diversity of the habitat mosaic; and,*
- *Preventing the spread of, or eradicating, other invasive and non-native species, particularly giant hogweed.*

Further ecological surveys are proposed to continue to assess the ecological baseline of the site, particularly surveys of invertebrates (specifically club-tailed dragonfly, lesser silver water beetle and butterflies), amphibians and water voles. It should be noted that this management plan is based on a preliminary ecological assessment only with basic habitat prescriptions that aim to increase diversity.

It is anticipated that the Habitat Management Plan will be refined following further investigation of nature along the route. This management plan is a working document that will be updated as additional information is gathered regarding nature on the route and will be reviewed every 5 years.

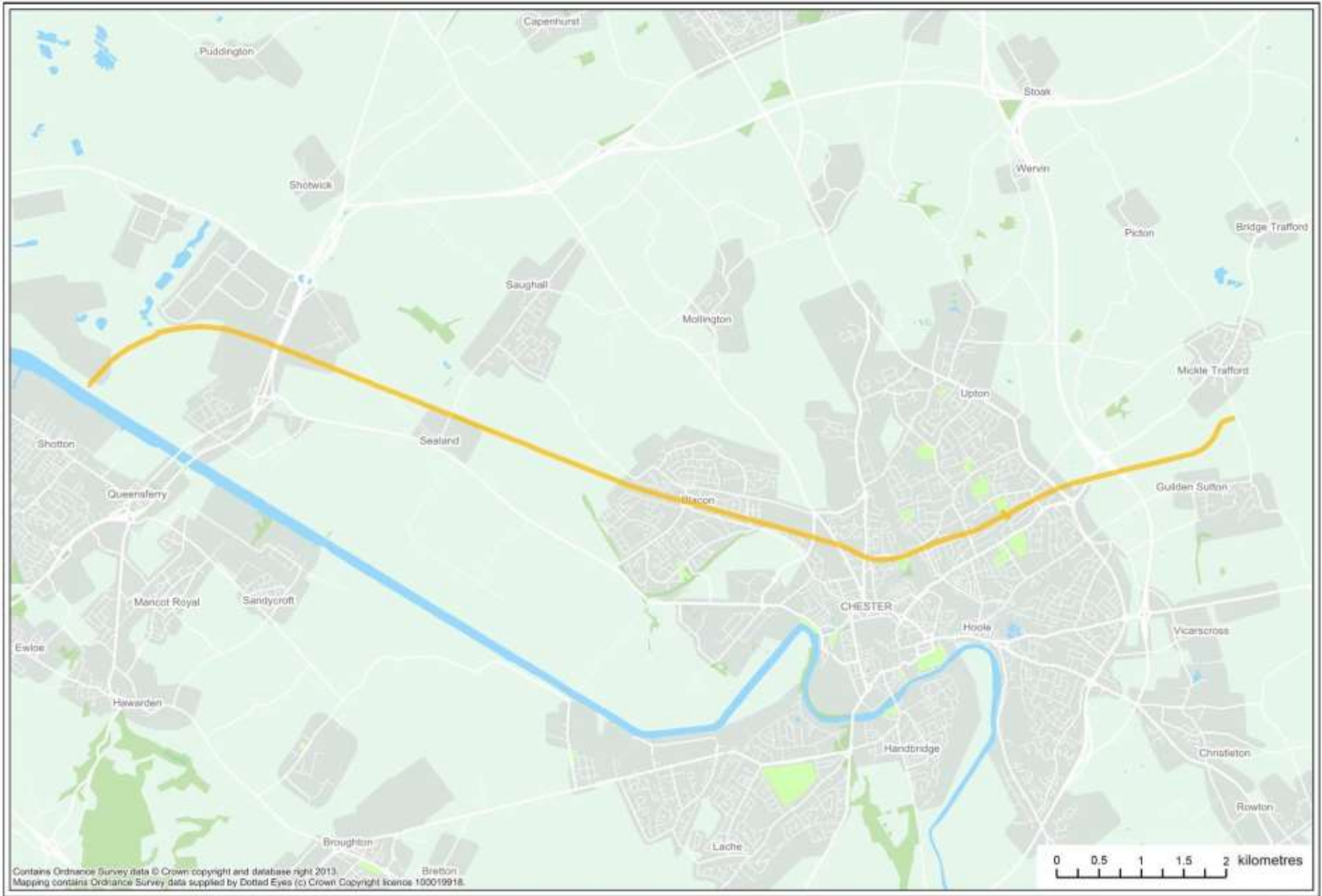
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# 1 Introduction

## 1.1 General Greenway Information

<b>Site name</b>	Chester Millennium Greenway, Route 5 also known as the Chester Railway Path
<b>Grid reference</b>	SJ 3111 6950 (Start of traffic free route) SJ 4473 6910 (End of traffic free route)
<b>Location</b>	The report focuses on Sustrans/RPL owned land, which starts near Station Lane, Mickle Trafford and ends at Hawarden Bridge train station at Connah's Quay.
<b>Status</b>	There are no statutory or non-statutory designations on the route. The closest statutory protected site is 500m from the route.
<b>Length</b>	14.8 km (9.2 miles)
<b>Area</b>	48.5 ha. (119.8 acres)
<b>Parish</b>	Saughall, Hoole Village, Mickle Trafford,
<b>County</b>	Cheshire, Flintshire
<b>Planning Authority</b>	Cheshire West and Chester Council, Flintshire County Council
<b>Map coverage</b>	1:50,000 O.S. Landranger 117 1:25,000 O.S. Explorer 226 Sustrans map leaflet available: Chester to Connah's Quay
<b>Access</b>	The route is easily accessible via public transport, with Hawarden railway station located at the western end of the greenway. Chester railway stations is also located within easy reach of the route. There are no restrictions placed on the traffic free greenway, and can be easily reached by a number of access points from adjacent roads along the route.
<b>Tenure</b>	The freehold of the greenway is owned by RPL/Sustrans.



**Drawing 1.1: Location of the Greener Greenway**

## 2 How to Use This Management Plan

In May 2013 Sustrans' Greener Greenways project was launched with the support of a grant from The Esmée Fairbairn Foundation. The three core aims of the project are:

- To survey, protect and enhance biodiversity along 280km of traffic-free greenways.
- To increase community engagement in looking after and learning about nature along the greenways, thus fostering community ownership.
- To evaluate the project's impact and disseminate its successes in order to shape our own and others' practices.

In order to achieve these aims management plans have been created detailing the current biodiversity interest of each greenway in the project, what management activities are most appropriate along each route and ideas for involving local conservation and volunteer groups in helping to maintain and improve the greenways.

This report includes the habitat management plan for the Chester Millennium Greenway, Route 5 in Cheshire and Flintshire. It provides information that can be used by the Sustrans maintenance team, volunteer coordinator, area managers and volunteer group leaders to help plan events, surveys and work days and to make sure that their activities are carried out at the right time of year and in the most appropriate locations. This report also includes notes on potential constraints to management including legally protected species and sites, important habitats and locations with invasive species.

It should be noted that this management plan is based upon a preliminary study only and that liaison with local experts is recommended to further investigate the wildlife along the route. Sustrans plan to undertake a range of further surveys utilising staff, volunteers and the wider public. It is anticipated that management prescriptions will be amended as additional information regarding habitats and species is gathered.

Where possible, opportunities for community engagement, habitat creation and eye-catching projects have been suggested. These opportunities are likely to include at least some features that fall outside route management but are provided as suggestions for future small scale funding bids or as collaborative projects with other conservation or community groups.

For more detailed information on the ecological interest on the route please see the Chester Millennium Greenway Preliminary Ecological Appraisal report (Sustrans, 2014).

Information on how to carry out prescribed management activities can be found in the Sustrans Ecological Technical Information Notes on the Susnet website or on the ecology section of the Volnet website.

For further information on any part of this report or the Greener Greenways project please contact the Sustrans ecology team.

## 3 Current Interest

### 3.1 Physical

The geology of the area is slowly permeable clay to the east of Chester, resulting in seasonally wet grasslands and woodlands and some waterlogging on low lying ground. Between Chester and Connah's Quay the geology is more typical of coastal flats with a naturally high groundwater and brackish or salt water conditions with many areas used as flood meadows or coastal grazing marsh. Geology along the disused railway is often distinct from the surrounding area due to the presence of imported ballast and subsoil resulting in drier and more free-draining conditions.

### 3.2 Ecological

Sustrans has undertaken a site visit and desk study to identify the current ecological interest of the route. The information gathered by these studies has then been used to identify opportunities and constraints in relation to managing vegetation.

Results of the desk study and field visit are provided in the Chester Millennium Greenway Preliminary Ecological Appraisal (see appendix 1) and are summarised below.

It should be noted that this management plan is based upon a preliminary study only and that liaison with local experts is recommended to further investigate the nature along the route. It is anticipated that these prescriptions will be amended as additional information regarding habitats and species is gathered. Sustrans plan to undertake a range of further surveys utilising staff, volunteers and the wider public.

Three internationally important sites were identified within 5km of the greenway. These are the Dee Estuary, River Dee and Bala Lake, and Buckley Newt Sites (these sites also incorporate seven SSSIs). The desk study also identified the presence of a Local Nature Reserve within 5km of the greenway.

These sites were predominantly designated for estuarine and salt-water habitats and for the waterfowl and aquatic species they support. The habitats on the greenway have little in common with these habitats and as such management on the greenway has limited potential to benefit these sites. However, maritime grasslands were a component of several designated sites. Although the grassland habitats on the greenway would be significantly different to this maritime grassland, they may form part of a wider patchwork of grassland habitats that reduce habitat fragmentation for these sites. As such the better quality grassland habitats should be preserved, enhanced and extended to help protect some of the wildlife populations in these sites.

The River Dee SSSI was noted to support the club-tailed dragonfly. This species is known to travel large distances from the rivers in which they breed and little is known about their terrestrial habits, but they are known to forage in woodland canopies and scrub habitats. As such, this species could potentially use the habitats along the greenway, but their significance to this species is unknown.

The Deeside and Buckley Newt SAC comprises a series of sites which support one of the largest breeding populations of great crested newts in the UK and significant populations of other amphibian species. The River Dee, situated between these sites and the greenway, forms a major barrier to newts and although the greenway could support great crested newts the management of the greenway is unlikely to impact the population of newts in the SAC.

Burton Mill Local Nature Reserve includes ecologically valuable woodland. Although the woodland on the greenway is likely to be of a lesser quality than those in the LNR, and despite the large distance between the two areas, woodlands on the route form part of a wider network across the local landscape that reduce habitat fragmentation and isolation of this site. As such the woodland

habitats should be preserved for their inherent value and enhanced and extended to help protect this LNR and the wider woodland network.

The ecological value of the greenway to these sites can be maximised by:

- Preserving, enhancing and extending the better quality grassland habitats on the route;
- Preserving, enhancing and extending the woodland habitats on the route; and,
- Surveying for club tailed dragonfly to determine whether the route is used by this species and inform management practices.

### **3.3 Flora**

The route contains a mixture of low growing flowers and grasses (grassland), taller flowering plants and shrubs such as nettles and thistles (ruderal), taller bushes and plants such as bramble (scrub) and trees forming either open parkland or more shady woodlands where there is a dense canopy.

When considered as a whole, the mosaic of semi-natural habitats along the greenway is considered to have moderate ecological value at a regional level. This is because of its structural diversity, overall area, and its potential function as a wildlife corridor.

The most valuable habitats within the mosaic are the patches of semi-improved neutral grassland along the route which may support populations of notable invertebrates and may form part of a wider network of valuable grasslands in the landscape. These patches were also considered to be of moderate value at a regional level.

The woodland patches are considered to have moderate ecological value at a local scale as they are semi-mature. Other habitats within the mosaic are less valuable in isolation but still form an important component of the habitat mosaic and contribute to the structural and species diversity.

Also of note on the route was the presence of invasive non-native species including Japanese knotweed and giant hogweed, and other introduced species such as snowberry, gunnera and laurel.

We have legal obligations to ensure that management does not cause the spread of Japanese knotweed and giant hogweed in the wild, and that they do not cause a nuisance to neighbours. As giant hogweed poses a health and safety risk to maintenance staff and the general public it should be eradicated from the route as a matter of urgency.

The ecological value of habitats along the route can be improved by (listed in order of priority):

- Eradicating giant hogweed;
- Improving the diversity of target patches of grassland and increasing the extent of flower rich grassland generally;
- Maintaining and increasing the structural diversity of the habitat mosaic;
- Improving the structural and species diversity of woodland habitat; and,
- Preventing the spread of, or eradicating, other invasive and non-native species.

### **3.4 Fauna**

The habitat mosaic and in particular the patches of semi-improved grassland are considered to be potentially important for invertebrates and they are therefore a significant consideration of future management along this route. The greenway provides foraging and sett building habitat for badger and two possible badger setts were recorded along the route. Nesting and foraging habitat for a variety of generalist bird species are present along the greenway. The route may also support amphibians, reptiles and a variety of mammal species including bats, hedgehog and water vole.

Further survey would be required to determine what species are present. Further surveys (listed in order of priority) that would be appropriate to volunteers and would provide useful information about the route include:

- Targeted invertebrate surveys for butterflies, club-tailed dragonfly and lesser silver water beetle;
- Surveys to determine if amphibian species are breeding in the ponds;
- A water vole survey along ditches and rivers near to the route.

For all these species the state of ponds and waterways and the quality of the habitat mosaic along the greenway are an important factor in determining the species and population size present. Recommendations to improve the waterbodies and to maintain and increase the extent and species diversity of the habitat mosaic have been made in Section 5 and these would be the most effective interventions to assist wildlife on the greenway.

Additional actions that could be undertaken to assist these fauna are:

- Retain standing and fallen deadwood wherever it is considered safe to do so for invertebrate habitat piles and hibernacula for reptiles and amphibians;
- Consider opening up shaded wet ditches by targeted clearance of trees to increase the quality of those water bodies for water voles, invertebrates and breeding amphibians;
- Maintaining a continuous line of taller vegetation (hedgerow, scrub or trees) along the corridor to maintain a sheltered and shaded route for commuting bats;
- Create new ponds and ditches for invertebrates and amphibians; and,
- Create egg laying habitats for reptiles along the route where safe and appropriate to do so.

Species with statutory protection may be present, and therefore the following works would need further assessment by a suitably experienced ecologist;

- Any repair work to bridges, lighting schemes or projects to remove vegetation from bridges must have assessed the impact on bats;
- Any works by watercourses must have assessed the potential impacts on fisheries, water vole and nesting birds such as kingfisher.
- Any vegetation clearance must take disturbance to nesting birds into consideration.
- Any work within 30m of a suspected badger sett that involves significant vegetation clearance, tree felling or machinery must be assessed to determine impact on badgers.
- Any significant ground moving works will need to take reptiles and great crested newts into account.

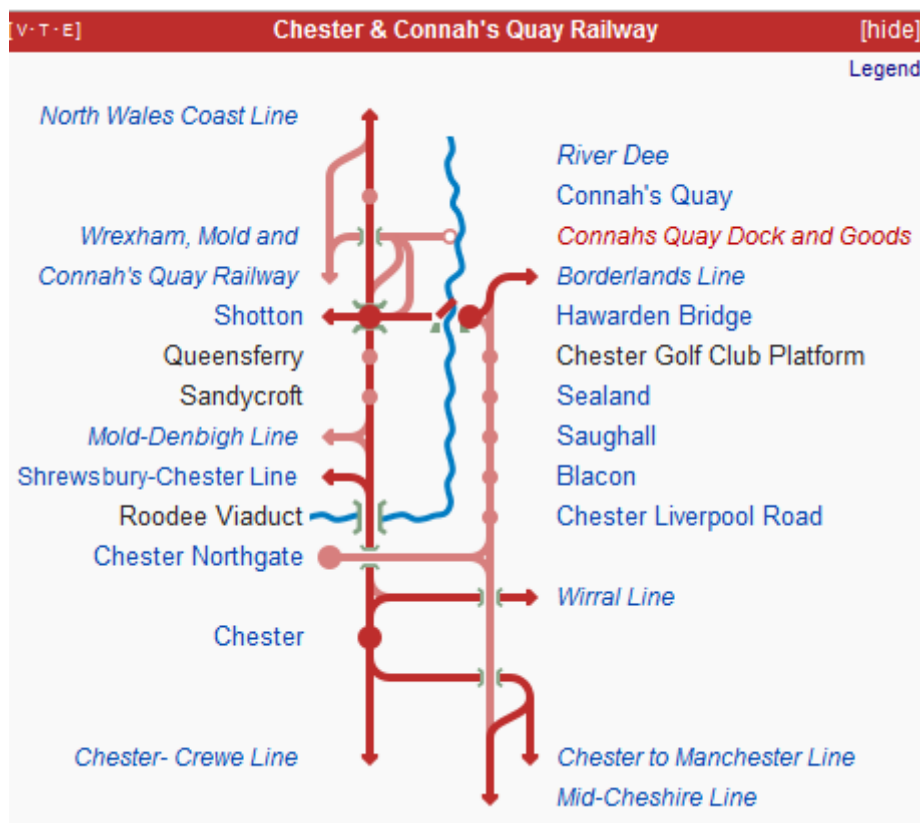
### **3.5 Ecological relationships and implications for management**

The greenway is a long unbroken corridor of vegetation across a largely arable, urban and industrial landscape that allows wildlife to cross features that would otherwise act as barriers such as the M53 and the Shropshire Union Canal. It is therefore an important piece of green infrastructure for both wildlife and people.

The route provides an important migration route between green spaces in the locality such as designated sites, grasslands, woodlands and the wider countryside. The route also provides a sheltered location for amphibian, bird, invertebrate, mammal and reptile species. Management will need to ensure that the routes function as a sheltered corridor is maintained.

### 3.6 Past Land Use

The Mickle Trafford to Dee Marsh railway line once carried materials to and from the steelworks on the banks of the Dee at Hawarden Bridge. It opened on the 31<sup>st</sup> March 1890 and closed on 20th April 1984. The station platforms had been demolished by this time. On 31st August 1986 the line reopened for goods services with only a single track, but it closed again in June 1992. The track was mothballed for a while but it was lifted before the end of the decade. In 2000 a footpath and cycleway was opened along the course of the line.



### 3.7 Public use

The route is used by cyclists and pedestrians for both leisure and commuting purposes. There are a number of schools and large employers within close proximity of the route and the greenway offers a pleasant means of commuting.

The route benefits from an active volunteer group, known as the Millennium Greenway Friends. Local campaigner, Audrey Hodgkinson, founded the group initially to oppose the Chester Deeside Transport System (CDTS) 'Guided Busway' which was proposed in 1995 and finally rescinded in 2003. Sustrans began construction of the greenway in 1998, with phase one opening in 2000 and phase two opening in 2009. Since then the Millennium Greenway Friends group have moved from campaigning for to managing the greenway for the local community. The group have developed a successful partnership with Newton Primary School, providing assembly talks for the school and in return the school have donated bird boxes made by Year 4 and a cheque which paid for the seeding of 5 areas during spring 2014.

As the route is a long linear corridor it is frequently used by cyclists who like to use the route for time trials and therefore race along the greenway at speed. A campaign to encourage the fair and equitable use of the route by all was launched in the autumn 2014.

## 4 Management objectives

### 4.1 Rationale

The management of the immediate verges of the path, and overhanging shrubs and trees is essential to keep the path clear and accessible for all users. Historically, the wider verges along greenways in the National Cycle Network have usually been left unmanaged; however, the appropriate management of these verges can contribute significantly to nature conservation.

The National Cycle Network includes 4,000 miles of Greenway: traffic-free route typically located along disused railways and canal towpaths. These are a transport resource but are also corridors of natural habitat that typically run for many kilometres. If managed appropriately, these greenways will not only be an important wildlife resource but will form part of a landscape-wide network linking otherwise isolated habitats and allowing the movement of species across the country.

The dominant habitats present along the greenway are semi-improved grassland and broad-leaved woodland. There has been no loss of habitat along the route. All habitats recorded onsite will require sympathetic habitat management over the next few years in order to maintain and/or enhance their wildlife value within the local landscape.

### 4.2 Factors influencing management (constraints)

**Not every management activity will be possible or desirable in every location every year. The works proposed in section 5 include a variety of options that can be used, moved or altered to take account of available resources, the results of surveys, public feedback and the effects of previous management.**

Some management activities will require specialist tools, training or the use of specialist contractors. Care should be taken to coordinate workdays to make the best use of available resources and not ask volunteers to carry out works for which they are not adequately prepared.

Several areas of the route include steep slopes or cross features such as roads or rivers. Care should be taken not to expose dangerous slopes and create a potential hazard to path users.

In some locations vegetation screens the route from neighbouring residential properties. Care should be taken not to expose private residences to increased view, either actual or perceived, that could result in local residents feeling overlooked.

The route may include a number of health and safety issues for volunteers such as dog faeces, sharp objects, asbestos or ground contamination. Management in these areas will be limited by the types of hazard present.

Due to incidents of vandalism and anti-social behaviour in some areas, any cut vegetation will have to be secured on the same day it is created to prevent possible acts of arson or the timber being thrown onto the nearby roads. This could include the creation of dead hedges, hidden habitat piles or the removal of vegetation from the route.

The works proposed in section 5 are predominantly aimed at maintain and improving existing habitats along the route. Maintenance of existing habitats should remain the priority in the first instance. Any additional habitat creation work should only be carried out once external funding has been approved and works have been agreed with the route manager and landowner.

### 4.3 Aims

1. To maintain access along the route.
2. To maintain, restore and enhance the different grasslands along the route and improve connections between habitat patches in the wider landscape.
3. To maintain, restore and enhance the different woodlands along the route and improve connections between habitat patches in the wider landscape.
4. To maintain, restore and enhance the different wetlands along the route and improve connections between habitat patches in the wider landscape.
5. To protect notable plant and animal species that occur along the route, including common blue and dingy skipper butterflies.
6. To provide suitable opportunities for nesting and hibernating wildlife.
7. To increase the abundance and diversity of foraging resources such as flowers, seeds, berries and insects along the route.
8. To carry out surveys to help identify important habitats and monitor the success of management.
9. To meet all legal and other obligations.
10. To minimise harm to infrastructure such as the path and bridges along the route.
11. To provide opportunities for engagement with volunteers, local conservation organisations and the wider public.

### 4.4 Management Objectives

The following objectives set out criteria to assess the success of management prescriptions for the route and provide a positive direction for future versions of this management plan. These objectives are deliberately challenging and are subject to revision depending on available resources.

#### **Objectives to meet Aim 1: To maintain access along the route**

- A. Maintain an area of vegetation no more than 15cm tall or manage linear habitat (e.g. hedgerows) within 1m of the path to maintain an open route.
- B. Maintain a clear area with no vegetation at least 2.5m tall above all sections of open route, 3.5m where the path is frequently used by horses.
- C. Identify and record areas of path with evidence of root heave or damage by vegetation on the route calendar and monitor these areas annually.

#### **Objectives to meet Aim 2: To restore and enhance the different grasslands along the route and improve connections between habitat patches in the wider landscape.**

- A. Achieve a coverage of undesirable species (bracken, broad-leaved dock, common nettle, common ragwort, cow parsley, creeping thistle, curled dock, marsh ragwort and spear thistle) of less than 5% in managed grasslands.
- B. Achieve a coverage of wildflowers and sedges throughout managed grasslands (excluding the undesirable species listed above, creeping buttercup and white clover) of more than 20%.
- C. Achieve a coverage of bare ground (including localised areas, for example, rabbit warrens) of less than 10% in managed grasslands.
- D. By ensuring the cover of invasive trees and shrubs is less than 5%, and indicators of water logging (such as large sedges, rushes, reeds) remains/is less than 30%.
- E. Introduce, encourage or maintain the presence of populations of at least two indicator species in managed grasslands along the route (refer to appendix 2 for list of indicator species).

**Objectives to meet Aim 3: To restore and enhance the different woodlands along the route and improve connections between habitat patches in the wider landscape.**

- A. Achieve a coverage of non-native and invasive species of less than 10% of the mature tree and scrub in managed woodlands.
- B. Achieve a diverse age and height structure in managed woodlands.
- C. Create or retain more than 1 example of standing or fallen dead trees of over 20 centimetres diameter in each woodland larger than 0.1 ha.
- D. Introduce, encourage or maintain the presence of populations of at least two indicator species in managed woodlands larger than 0.1 ha (refer to appendix 2 for list of indicator species).

**Objectives to meet Aim 4: To restore and enhance the different wetlands along the route and improve connections between habitat patches in the wider landscape.**

- A. Achieve a coverage of non-native and invasive species in managed waterbodies of less than 10% (refer to appendix 3 for a list of legally controlled species).
- B. Achieve a coverage of macro-algae in managed waterbodies of less than 30%.
- C. Achieve a coverage of undesirable species (common duckweed, fennel pondweed and yellow water-lily) of less than 50% in managed ponds.
- D. Ensure that less than 20% of managed ditches are in heavy shade (unless the ditch is adjacent to a hedge or within a woodland).

**Objectives to meet Aim 5: To protect notable plant and animal species that occur along the route, including common blue and dingy skipper butterflies.**

- A. Carry out all routine maintenance and management works at the appropriate time of year.
- B. Check for evidence of protected or notable species before carrying out any activities that could cause disturbance.
- C. Where notable plants or animals are identified during surveys add a note to the maintenance calendar and this plan to highlight these areas and adjust management accordingly.

**Objectives to meet Aim 6: To provide suitable opportunities for nesting and hibernating wildlife.**

- A. Achieve a coverage of dense scrub, hedgerow and woodland vegetation suitable for nesting over at least 50% of the greenway.
- B. Create 2 dead wood and/or cut vegetation features per km of route in areas not at risk of antisocial behaviour or in such a way as to minimise the risk of such behaviour.
- C. Create at least 2 opportunities for wildlife such as bat / invertebrate boxes per km of route in suitable locations. Clean/repair and monitor these features at least annually (see appendix 4).

**Objectives to meet Aim 7: To increase the abundance and diversity of foraging resources such as flowers, seeds, berries and insects along the route**

- A. Create and maintain a route calendar to ensure vegetation clearance takes place at the appropriate time of year and seed heads, berries and other food sources are not removed prematurely.
- B. Achieve a coverage of wildflowers and sedges throughout managed grasslands (excluding the undesirable species listed in Objective 2a, creeping buttercup and white clover) of more than 20%.
- C. Introduce, encourage or maintain the presence of populations of at least two indicator species in managed grasslands along the route (see appendix 2 for list of indicator species).
- D. Achieve a diverse age and height structure in managed woodlands.
- E. Create or retain >1 example of standing or fallen dead trees of over 20 centimetres diameter in each woodland larger than 0.1 ha.
- F. Introduce, encourage or maintain the presence of populations of at least two indicator species in managed woodlands (see appendix 2 for list of indicator species).

**Objectives to meet Aim 8: To carry out surveys to help identify important habitats and monitor the success of management.**

- A. Recruit 14 Sustrans wildlife champions for the Chester Millennium Greenway.
- B. Carry out at least 6 species-specific surveys or volunteer training days along the route per year (e.g. by inviting local experts and conservation organisations to run events).
- C. Report at least 108 survey results or incidental records to Sustrans per year via iRecord or other citizen science projects.
- D. Publically reward and congratulate volunteers who provide records and take part in surveys at least once per year.

**Objectives to meet Aim 9: To meet all legal and other obligations**

- A. Identify, record and protect any badger setts, bat roosts and nesting birds on the route.
- B. Undertake surveys prior to any maintenance/management works that could negatively impact protected species.
- C. Identify, record and remove invasive species on the route, in particular giant hogweed and Japanese Knotweed – refer to appendix 3 for a list of legally controlled species.

**Objectives to meet Aim 10: To minimise harm to infrastructure such as the path and bridges along the route**

- A. Ensure all Sustrans/RPL owned structures are free from obscuring vegetation prior to scheduled structural inspections.
- B. Maintain a 1m wide mown (low vegetation) strip along the path.
- C. Maintain a 2-3 metre wide mown (low vegetation) strip under and around bridges and other structures on the route.
- D. Remove tree saplings within 5m of bridges and other structures to prevent future damage by roots or branches.

**Objectives to meet Aim 11: To provide opportunities for engagement with volunteers, local conservation organisations and the wider public**

- E. Carry out at least two presentations or events per year aimed at encouraging and enthusing volunteers to undertake the habitat enhancement works or wildlife surveys
- F. Carry out at least one wildlife or conservation based event per year on the route such as a Bioblitz, nature walk or wild food forage.
- G. Carry out at least one wildlife or conservation based educational visit to the Chester Millennium Greenway route per year

# 5 Habitat Management Prescriptions

## 5.1 Pre-commencement Works – Sustrans Staff

Management Prescription	Detail and variations	Priority	Timing	Responsibility
1) Contact neighbouring landowners where the route passes through designated sites, parks or areas with invasive species to agree and coordinate maintenance	<ul style="list-style-type: none"> <li>Ensure landowners are happy to allow works detailed below on/adjacent to land not owned by Sustrans/RPL. In particular tree felling, tree planting and ditch clearance works.</li> </ul>	1	Before any works can take place outside path verges.	Primary: Area manager  Support: Volunteer coordinator, Volunteer group leaders
2) Meet with maintenance teams	<ul style="list-style-type: none"> <li>Meet with team leaders or managers twice a year to agree a schedule of works for the next 6 months. Try to make sure they understand the aims of the proposed management as well as the practicalities and keep in touch to coordinate activities such as grass cutting and raking by volunteers.</li> <li>Agree how best to keep lines of communication open so we get reports of maintenance issues as quickly as possible.</li> <li>Invite maintenance teams to training events (we can always use more surveyors, especially ones that are out and about on a daily basis).</li> </ul>	1	Ongoing.	Primary: Area manager  Support: Volunteer coordinator, Volunteer group leaders
3) Coordinate with local conservation groups to agree approach and team up on work days	<ul style="list-style-type: none"> <li>Consult with local wildlife, Friends of ... , community, school or other groups who may have resources, skills or volunteers that could help with management, events or community engagement.</li> <li>Useful contacts:               <ul style="list-style-type: none"> <li><a href="http://www.millenniumgreenwayfriends.org.uk/">http://www.millenniumgreenwayfriends.org.uk/</a></li> <li>Cheshire Wildlife Trust</li> <li>University of Chester – MSc in Wildlife Conservation (Dr Howard P Nelson)</li> <li>Chester National Trust Volunteers</li> <li>The Woodland Trust</li> <li>British Trust for Conservation Volunteers</li> <li>Farming Wildlife Advisory Group</li> <li>The Ecological Network for Cheshire project (ECONet)</li> <li>Cheshire Bat Group (<a href="http://www.record-lrd.co.uk/c1.aspx?Mod=Article&amp;ArticleID=G00020001">www.record-lrd.co.uk/c1.aspx?Mod=Article&amp;ArticleID=G00020001</a>)</li> <li>Cheshire &amp; Wirral Amphibian &amp; Reptile Group</li> <li>Cheshire Active Naturalists (<a href="http://www.cheshireactivenaturalists.org.uk/">http://www.cheshireactivenaturalists.org.uk/</a>)                   <ul style="list-style-type: none"> <li>Amphibian &amp; Reptile Group (CANARG)</li> </ul> </li> <li>Wirral and Cheshire Badger Group (<a href="http://wcbg.org.uk/">wcbg.org.uk/</a>)</li> <li>Cheshire Mammal Group (<a href="http://www.record-lrd.co.uk/Group.aspx?Mod=Article&amp;ArticleID=G00010001">www.record-lrd.co.uk/Group.aspx?Mod=Article&amp;ArticleID=G00010001</a>)</li> <li>Cheshire and Wirral Ornithological Society (<a href="http://www.cawos.org">www.cawos.org</a>)</li> </ul> </li> </ul>	2	Ongoing.	Primary: Volunteer coordinator  Support: Volunteer group leaders

## 5.2 Volunteer Support and Community Engagement Works - Sustrans Staff

Management Prescription	Detail and variations	Priority	Timing	Responsibility
4) Create a Greenway Calendar	<ul style="list-style-type: none"> <li>Prepare a detailed calendar of surveys, events and habitat management works for the next six months based on this management plan and feedback from the maintenance team, contractors, partners, volunteers and the wider public.</li> </ul>	1	Twice a year to coincide with maintenance team meetings.	Primary: Area manager, Volunteer coordinator  Support: Volunteer group leaders, Maintenance team
	<ul style="list-style-type: none"> <li>Record completed management works, surveys, events and other relevant information in the calendar so that future management plans can take account of past experiences.</li> <li>Where habitats are divided into sections to promote management on a long term (3-5 year) cycle make sure to record which sections have been managed in which year and why.</li> <li>Where trees are managed make sure to record their location, reason for management, type of management and if ecoplugs were used.</li> </ul>	1	Ongoing	
	<ul style="list-style-type: none"> <li>Prepare and deliver an annual programme of targeted species surveys. Survey priorities based on local nature reserves and historic records include:               <ul style="list-style-type: none"> <li>Birds (dawn chorus walks, seasonal migrant spotting, etc.)</li> <li>Invertebrates (butterflies, bumblebees, dragonflies, etc.)</li> <li>Wildflowers (in particular grassland and ancient woodland plants)</li> <li>Mammals (including badgers, bats and hedgehog)</li> </ul> </li> </ul>	1	Twice a year as part of the route calendar.	Primary: Volunteer coordinator  Support: Volunteer group leaders
5) Support a steering group for the greenway	<ul style="list-style-type: none"> <li>Steering group to meet either quarterly or twice a year to coincide with maintenance team meetings.</li> <li>National Greener Greenways updates to be provided via the Greener Greenways newsletter</li> </ul>	1	Quarterly or twice a year.	Primary: Volunteer coordinator  Support: Area manager

Management Prescription	Detail and variations	Priority	Timing	Responsibility
6) Support a volunteer group for the greenway	<ul style="list-style-type: none"> <li>• Train and equip volunteers to undertake the planned surveys and maintenance works including first aid training.</li> <li>• Aim to make volunteer champions who can then train and support others. Record training and remind volunteers of certificate renewal dates as they arise.</li> <li>• Install storage for tools on or near to the route. Create a list of tools and PPE with target dates for regular inspections, repairs, sharpening and replacement.</li> <li>• Implement a booking in/out system for tools and make sure all instructions and H&amp;S information are available and where appropriate on display.</li> <li>• Carry out a tool inspection/sharpening day twice a year prior to first work day in Sep/Oct and prior to first grass cut in Mar/Apr.</li> <li>• Provide funding for tea and biscuits</li> </ul>	1	As required  Tool inspection in Sep/Oct and Mar/Apr	Primary: Volunteer coordinator  Support: Volunteer group leaders
	<ul style="list-style-type: none"> <li>• Promote the annual works/survey programmes via newsletters, publicity at events, social media and any other available method.</li> <li>• Celebrate volunteer successes via prizes or special mention in promotional material.</li> </ul>	1	Year round	
	<ul style="list-style-type: none"> <li>• Evaluate volunteer participation in work parties/surveys. Try to get feedback on what activities are most popular and why. Use this information to decide what future activities to put in the calendar.</li> </ul>	2	Year round	
	<ul style="list-style-type: none"> <li>• Support the creation of a Friends of ... group.</li> <li>• Help with drafting a constitution and assigning roles, insurance etc.</li> <li>• Provide support when approaching third parties for funding or when coordinating work days.</li> </ul>	2	Once regular volunteers are on board	Primary: Volunteer group leaders  Support: Volunteer coordinator
7) Undertake an annual event to promote awareness of the NCN and the wildlife it supports	<ul style="list-style-type: none"> <li>• Organise, promote and deliver an annual guided bike ride / walk with stopping points at conservation areas showcasing the work to date.</li> <li>• Organise, promote and deliver a wildlife based event (e.g. a BioBlitz, nature walk, wild food festival, etc.).</li> <li>• Evaluate the event participation/success and record it on the calendar.</li> </ul>	1	During school holidays	Primary: Volunteer coordinator  Support: Volunteer group leaders

### 5.3 Large Scale Works - Maintenance Team and Contractors

Management Prescription	Detail and variations	Location/Section	Priority	Timing
8) Carry out annual route inspection	<ul style="list-style-type: none"> <li>Walk the route and identify any potential issues such as invasive/injurious species.</li> <li>Carry out a visual inspection of structures etc. including the effect of nearby trees.</li> <li>Carry out a tree inspection to look for unsafe, damaged or diseased trees (appendix 4).</li> <li>Monitor areas of giant hogweed, Japanese knotweed, rhododendron and other invasive species (see appendix 3).</li> </ul>	Whole Route	1	At least once per year
	<ul style="list-style-type: none"> <li>Carry out any necessary remedial works and/or record issues in the route calendar to plan works at an appropriate time of year.</li> </ul>	As required	Variable depending on the issue identified	
9) Cut grassland verges	<ul style="list-style-type: none"> <li>Cut vegetation twice a year to maintain a 1m mown strip either side of the route. This mowing regime can be brought forward if growth is vigorous.</li> </ul>	All grassland verges	1	1st cut: Mar/Apr; 2nd cut: Aug/Sep
	<ul style="list-style-type: none"> <li>Where possible remove the cut grass and make compost piles or hay bales (in areas at low risk of anti-social behaviour) to reduce thatch and allow space for flowers.</li> <li>Coordinate with volunteers to allow cut grass to be raked and removed.</li> <li>Trial different cuts in areas where removal of the cut grass can be achieved.</li> </ul>	All grassland verges	1	As part of main grass cuts
	<ul style="list-style-type: none"> <li>Implement an additional 'tall grass' region between the boundary vegetation and the path verge to create a more gradual change in vegetation height.</li> <li>Cut this vegetation less frequently than the mown strip either side of the route, ideally once a year.</li> </ul>	Grassland verges wider than 1m	2	As part of main grass cuts
	<ul style="list-style-type: none"> <li>Part of each grassland area should be left unmown to leave some seed heads for birds and shelter for invertebrates over winter and to provide a patchwork of different structures in the vegetation, particularly in wider mown bays along the route. These un-mown 'headlands' should vary in their location each year.</li> <li>The edges of the unmown area should be wobbly rather than straight as this increases the variety of microhabitats present</li> </ul>	Grassland verges wider than 1m	2	As part of main grass cuts
	<ul style="list-style-type: none"> <li>Cut and treat small trees and introduced shrubs encroaching on the edge of grassland patches. Where appropriate use ecoplugs on the stumps to prevent regrowth.</li> </ul>	Grassland verges wider than 1m	2	As part of Aug/Sep 'tall grass' cuts

Management Prescription	Detail and variations	Location/Section	Priority	Timing
10) Manage route boundaries	<ul style="list-style-type: none"> <li>Trim hedgerows where they are close to the path to remove overhanging vegetation.</li> <li>Aim to retain sections with nuts or berries until early spring.</li> <li>Keep bushy areas where these do not impede path users.</li> <li>Maintain scrub/hedgerows directly adjacent to the route boundary to prevent informal access onto the route and avoid neighbouring properties feeling overlooked.</li> </ul>	Hedgerows close to the open sections of the route	1	Feb-Mar (to avoid bird nesting season and keep berries over winter)
	<ul style="list-style-type: none"> <li>Management should be on rotation and should avoid cutting every hedgerow every year. For example clear one side of the path in odd years and the other in even years. Alternatively clear the areas next to the path every year and the tops and backs of hedges every three years to allow them to produce berries and become bushy.</li> <li>Retain tall grass and taller vegetation where this forms the base of a hedgerow. Cut vegetation can be used to thicken hedgerow bases.</li> <li>If hedgerows become bare at the base with thick woody trunks report this to the Sustrans route manager who will assess the need for coppicing or hedge laying. Take lots of photos to help this process.</li> </ul>	All hedgerows  Retain cut vegetation in areas with a low risk of anti-social behaviour	2	
11) Manage trees	<ul style="list-style-type: none"> <li>Walk the route and identify any potential tree health and safety issues.</li> <li>Any damaged or ivy covered trees that could require management should be assessed for bats, alternatively take lots of photos and contact the Sustrans ecologist for advice.</li> </ul>	Whole Route	1	At least once per year
	<ul style="list-style-type: none"> <li>Meet with Sustrans staff to identify and mark up trees requiring work.</li> <li>Manage semi-mature or damaged trees where these are close to structures or pose a risk to path users in open sections. Where possible avoid using a mechanical flail to manage trees.</li> <li>Consider managing mature trees within 5m bridges and other structures found on the route.</li> <li>Selectively remove non-native trees where thinning is required (see appendix 3).</li> </ul>	As required	1	Oct-Feb (to avoid bird nesting season)
	<ul style="list-style-type: none"> <li>Identify 1-2 large trees per 500m section that are in a suitable location to leave un-manged for the foreseeable future until fully mature/veteran. Trees should be located away from the path and structures and should not have obvious defects or an unstable shape. Assume trees will double in size over time.</li> </ul>	In areas with semi-mature trees	3	As part of tree inspections
12) Manage areas of dense scrub	<ul style="list-style-type: none"> <li>Cut and re-use approximately 960 square metres of scrub per year.</li> <li>Different blocks of scrub should be cut in different years or alternate patches within large blocks cut in different years.</li> <li>Ideally scrub management should be conducted every 3-5 years depending on how large the initial scrub block is. For example a 100m long 5m deep block could be divided into ten 30m<sup>2</sup> sections (with a 2m wide buffer along the route boundary). In Year 1 Section 1 and 6 will be managed, in year 2 Section 2 and 7 etc. Sections need not be marked out on site as last year's management should still be evident.</li> </ul>	960m <sup>2</sup> = 32 x 30m <sup>2</sup> blocks	2	Oct-Feb (to avoid bird nesting season)

Management Prescription	Detail and variations	Location/Section	Priority	Timing
13) Keep areas around structures clear of vegetation	<ul style="list-style-type: none"> <li>Maintain a 2-3 metre mown (low vegetation) strip under and around bridges and other structures on the route.</li> </ul>	Whole Route	1	Mar/Apr, Aug/Sep or Oct-Feb depending on vegetation type
	<ul style="list-style-type: none"> <li>Remove saplings within 5m of bridges and other structures found on the route by mowing or cutting and treat larger tree stumps with ecoplugs.</li> <li>Remove young saplings or buddleia from walls or the tops of structures by hand. Treat stumps with ecoplugs where complete removal cannot be achieved without damaging brickwork.</li> <li>Clear ivy where brickwork is clearly visible through it. Where ivy is dense cut a 30cm section from the base of ivy plants and allow the upper parts to die off over time.</li> <li>Retain any specialist vegetation on cliffs and walls such as ferns, mosses and liverworts.</li> </ul>	Whole Route	1	Oct-Feb (to avoid bird nesting season)
14) Manage invasive non-native species	<ul style="list-style-type: none"> <li>Cut the roots of giant hogweed plants with a sharp spade approximately 10cm below ground level. Treat cut giant hogweed stands with a Glyphosate based herbicide including surrounding vegetation that may contain an active seed bank.</li> <li>Make sure appropriate PPE and safety systems are in place or use specialist contractors for this work.</li> </ul>	East of Blacon Hall Road (TN24)	1	Cutting in spring  Chemical treatment April-May
	<ul style="list-style-type: none"> <li>Treat identified stands of Japanese knotweed with Glyphosate based herbicide, ideally by injection or gel wipes. Treatment is most effective in late summer before leaves change colour/fall.</li> </ul>	Whole Route	1	At least once per year, ideally in July-Sep.
	<ul style="list-style-type: none"> <li>Support volunteers by clearing access to areas with Himalayan balsam.</li> <li>Hand pull Himalayan balsam in early spring before plants begin to flower. Once any one plant has two flowers or more stop management until next year.</li> <li>Cut back Russian vine and snowberry in early summer before flowering. Larger stands may require treatment with a suitable herbicide to prevent recurrence.</li> <li>Make a note of any other invasive or non-native species along the route and monitor regularly.</li> </ul>	Whole Route	1	Clear balsam in March - May

*It is an offence under the Wildlife and Countryside Act 1981 (as amended) to damage or destroy a bird nest whilst it is in use. Where trees, scrub or other vegetation may contain a bird nest works must be avoided until after birds have left the nest. Ideally this work will take place in October to February when birds are not nesting, but in situations where trees pose an imminent risk to path users, structures or neighbouring properties works can take place at other times of year. Contact the Sustrans ecologist for advice on what to do in high risk situations.*

## 5.4 Small Scale Works – Volunteer groups (activities achievable within one work day)

Management Prescription	Detail and variations	Location/Section	Priority	Timing
15) Manage grassland and remove cut grass	<ul style="list-style-type: none"> <li>Rake off cut areas of grassland, in particular after the taller sections are cut in the autumn. Aim to remove any thatch of dead grass and expose small patches of bare soil to encourage germination of wildflowers.</li> <li>Coordinate raking with maintenance teams as part of the works calendar, ideally rake grass the same week it's cut but not on the same day to keep machinery and volunteers separate.</li> </ul>	Wherever grassland has been cut.	1	1st cut: Mar/Apr;  2nd cut: Aug/Sep
	<ul style="list-style-type: none"> <li>Cut grassland in areas that maintenance teams cannot reach to prevent scrub and taller vegetation from encroaching.</li> <li>Some areas should be left unmown to leave seed heads for birds and shelter for invertebrates over winter and to provide a patchwork of different structures in the vegetation, particularly in wider mown bays along the route. These un-mown 'headlands' should vary in their location each year.</li> <li>The edges of all mown areas should be wobbly rather than straight as this increases the variety of habitats present. Volunteers could follow contractors adding wobbles to machine cut areas.</li> <li>Ensure taller vegetation is retained around path corners and access points to encourage users to stay on the path.</li> <li>Ensure an un-manged strip/buffer of 1m is left at the bottom of any trees, hedgerows or boundary features.</li> </ul>	<p>Verge cuts in less accessible areas where tall grass or taller vegetation is present.</p> <p>Ensure 'headlands' are retained over winter</p>	2	
16) Manage scrub and create scallops	<ul style="list-style-type: none"> <li>Remove any small trees in grassland verges or near to structures.</li> <li>Thin any large stands of bramble scrub on verges but retain patches as cover for birds, reptiles and small mammals.</li> <li>Retain any semi-mature or mature trees as landscape features. Reduce scrub cover around trees to promote an open parkland structure.</li> <li>Clear areas of tall vegetation or rank grassland to prevent scrub from encroaching but retain a line of vegetation, especially at hedgerow bases or as a buffer around retained scrub, to allow animals to move along the greenway under cover.</li> </ul>	<p>Grassland verges and taller rank grassland where large stands of scrub are present.</p> <p>Not in or adjacent to woodlands.</p>	1	Oct-Feb (to avoid bird nesting season)
	<ul style="list-style-type: none"> <li>Different blocks of scrub should be cut in different years or alternate patches within large blocks cut in different years.</li> <li>Ideally scrub management should be conducted every 3-5 years depending on how large the initial scrub block is. For example a 100m long 5m deep block could be divided into ten 30m<sup>2</sup> sections (with a 2m wide buffer along the route boundary). In Year 1 Section 1 and 6 will be managed, in year 2 Section 2 and 7 etc. Sections need not be marked out on site as last year's management should still be evident</li> <li>The edges of the cut area should be wobbly rather than straight (often called scallops) as this increases the variety of micro-habitats present. Volunteers could follow contractors adding wobbles to machine cut areas.</li> </ul>	<p>Grassland verges and taller rank grassland where large stands of scrub are present.</p> <p>Not in or adjacent to woodlands.</p>	2	Oct-Feb (to avoid bird nesting season)

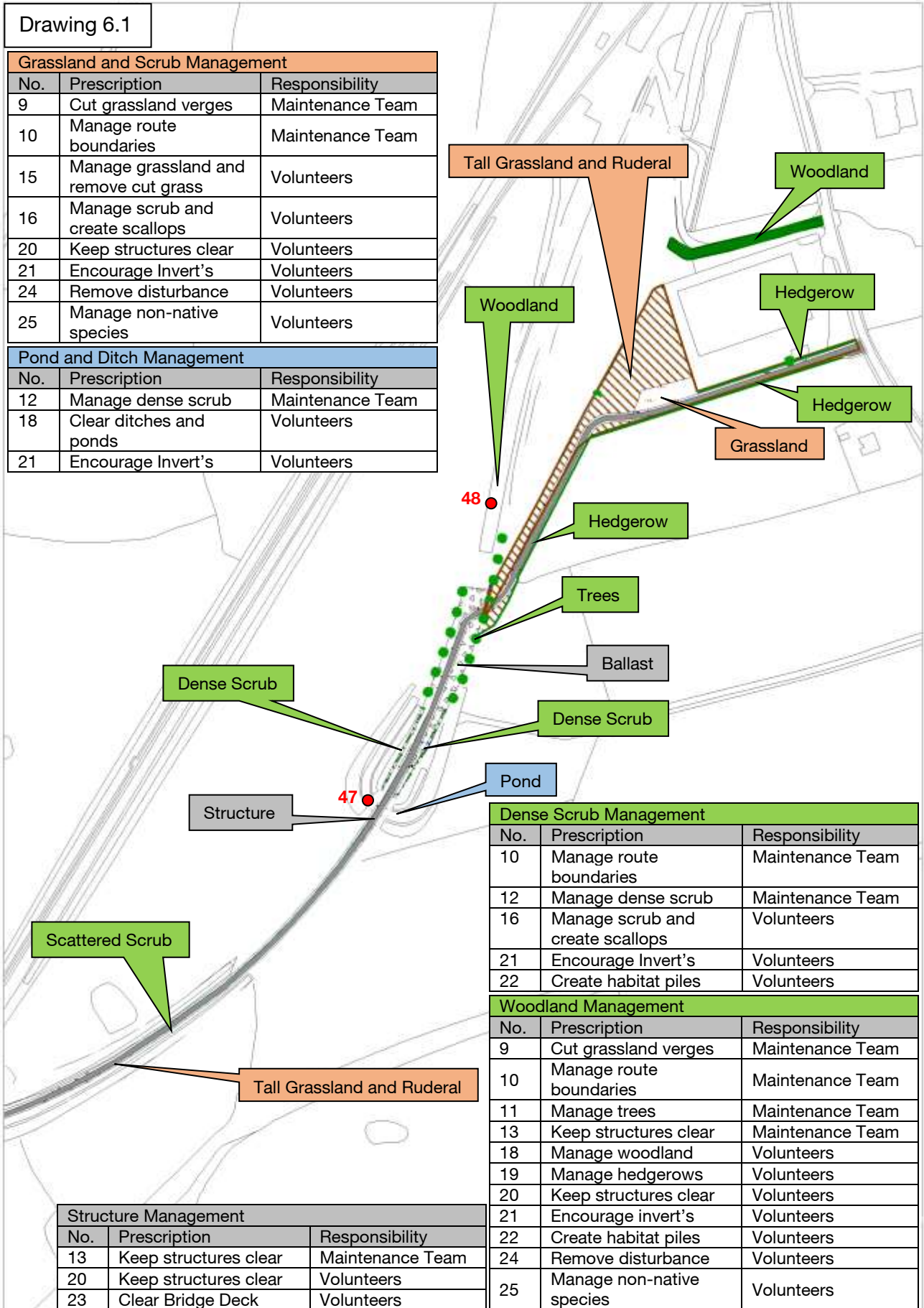
Management Prescription	Detail and variations	Location/Section	Priority	Timing
17) Clear ditches and ponds	<ul style="list-style-type: none"> <li>• Cut and remove encroaching scrub along ditches where access is available.</li> <li>• Where ponds are excessively silted deepen small sections to create a slope and a variety of water levels. Ideally only deepen areas without existing aquatic vegetation.</li> <li>• In areas with bank erosion or trampling use cut material to create barriers to support the pond banks and prevent further damage.</li> <li>• Monitor to identify whether further management should be conducted.</li> </ul>	Within all accessible ditches and ponds along the path verges.	2	Oct-Feb (to avoid bird nesting season and breeding amphibians)
18) Manage woodland	<ul style="list-style-type: none"> <li>• Ideally woodland management should be conducted every 3-5 years depending on how large the initial woodland is. For example a 100m long 5m deep area could be divided into ten 30m<sup>2</sup> sections (with a 2m wide buffer along the route boundary). In Year 1 Section 1 and 6 will be managed, in year 2 Section 2 and 7 etc. Sections need not be marked out on site as last year's management should still be evident.</li> <li>• When removing trees for reasons other than health and safety or to preserve structures try to target non-native species and allow native species to reach maturity. (see appendix 3).</li> <li>• Avoid managing more open woodland areas, or locations with underground bulbs. Keep an eye out for snowdrops and bluebells in early spring.</li> </ul>	All woodlands	2	Oct-Feb (to avoid bird nesting season)
	<ul style="list-style-type: none"> <li>• Thin dense saplings to create open gaps in the tree canopy either as short round 'glades' or longer linear 'rides'.</li> <li>• Thin dense scrub and taller vegetation to allow space for wildflowers to develop but retain patches as shelter for animals and birds. Retain a line of vegetation, especially along woodland edges to allow animals to move along the greenway.</li> <li>• Different blocks of woodland should be cut in different years or alternate patches within large blocks cut in different years.</li> <li>• Retain dead wood as large immobile trunks to reduce anti-social behaviour. Weave cut branches into spiky hedgerows or create dead hedges with bramble to make material harder to remove.</li> </ul>	Woodland with a closed canopy	1	
19) Manage hedgerows	<ul style="list-style-type: none"> <li>• Trim hedgerows identified on the route calendar where they are close to the path to remove overhanging vegetation. Aim to retain sections with nuts or berries until early spring. Keep bushy areas where these do not impede path users.</li> <li>• If hedgerows become bare at the base with thick woody trunks report this to the route manager who will assess the need for coppicing or hedge laying. Take lots of photos to help this process.</li> </ul>	Hedgerows bordering the route.	1	Feb-Mar (to avoid bird nesting season and retain berries over winter).
	<ul style="list-style-type: none"> <li>• Management should be on rotation and should avoid cutting every hedgerow every year. For example clear one side of the path in odd years and the other in even years. Alternatively clear the areas next to the path only, allowing the tops and backs of hedges to grow out and become bushy. This should be set out in the route calendar.</li> <li>• Retain taller vegetation where this forms the base of a hedgerow. Cut vegetation can be used to thicken hedgerow bases in areas with a low risk of anti-social behaviour.</li> </ul>	Areas to be trimmed in any one year should be identified in the route calendar.	2	Long spurs or small obstacles can be removed by hand as required.

Management Prescription	Detail and variations	Location/Section	Priority	Timing
20) Keep areas around structures clear of vegetation	<ul style="list-style-type: none"> <li>• Clear a 2-3 metre buffer under and around bridges and other structures on the greenway to allow inspections to take place.</li> <li>• Manage woody vegetation such as young saplings or buddleia from walls or the tops of structures by hand to avoid damaging brickwork. Manage saplings within 5m of bridges and other structures on the greenway to allow access to the structure for inspections.</li> <li>• Clear ivy where brickwork is clearly visible through it. Where ivy is dense cut a 30cm section from the base of ivy plants and allow the upper parts to die off over time.</li> <li>• Retain any specialist vegetation on cliffs and walls such as ferns, mosses and liverworts.</li> </ul>	Whole Route	1	<p>Cut grass Mar/Apr and Aug/Sep.</p> <p>Clear scrub/ivy Oct-Feb.</p>
21) Encourage invertebrates	<ul style="list-style-type: none"> <li>• Make gaps in dense scrub in more open areas, especially on south facing embankments. Retain flowering species such as buddleia or rose. Consider cutting shapes in the embankment to create a varied habitat mosaic including areas of bare ground for butterflies, leaf litter for beetles and taller grasses for crickets.</li> </ul>	Within grassland, woodland edge and scrub habitats	2	Oct-Feb (to avoid bird nesting season)
22) Create habitat piles/hibernacula	<ul style="list-style-type: none"> <li>• Cut vegetation from scrub and tree management should be used to create habitat piles in areas with a low risk of anti-social behaviour, ideally on the edge of areas of taller vegetation.</li> </ul>	At least 2m from the path, ideally in areas of retained scrub near species rich grassland.	2	All year. Once created piles can be added to at any time.
23) Clear bridge deck	<ul style="list-style-type: none"> <li>• Clear taller woody vegetation from the parapet walls along the bridge and rake thoroughly to promote low growing plants and bare ground.</li> <li>• Retain a strip of short grass and wildflowers along the middle of the bridge deck connected to nearby habitats to allow animals to cross the bridge under cover.</li> </ul>	Park Farm, Ermine Rd, North West Coast Railway, Parkgate Rd, A5480, Shropshire Union Canal, Blacon Hall Rd, drains east of Station Cottages, Morriston Farm drain, Birkenhead junction drain.	2	<p>Cut grass Aug/Sep. Clear scrub Oct-Feb</p>
24) Remove human disturbance	<ul style="list-style-type: none"> <li>• Collect litter and fly tipped material where safe and appropriate to do so. Contact the landowner via Sustrans where volunteer action is not appropriate.</li> </ul>	As required	2	All year
25) Manage non-native species	<ul style="list-style-type: none"> <li>• Remove any Himalayan balsam by hand pulling <b>before</b> plants are able to produce flowers. Collect pulled stems in bags or hang up to dry, do not store/compost wet stems on site. Once any one plant has more than one flower stop management until next year.</li> <li>• Cut back Russian vine and snowberry in early summer before flowering.</li> <li>• Consult with the route manager/maintenance team about cutting back bamboo, gunnera and other garden escapes to agree the best response on a case by case basis.</li> <li>• Make a note of any other invasive or non-native species along the route and report its location to the maintenance team (ideally via iRecord) and record it on the calendar.</li> <li>• Do <b>NOT</b> attempt to manage Japanese knotweed, report it and leave it to the maintenance team.</li> </ul>	As required	2	<p>Clear balsam March - May</p> <p>Clear Russian Vine and snowberry in Oct - Feb (to avoid bird nesting season)</p>

## 5.5 Ideas and Possibilities for Future Projects

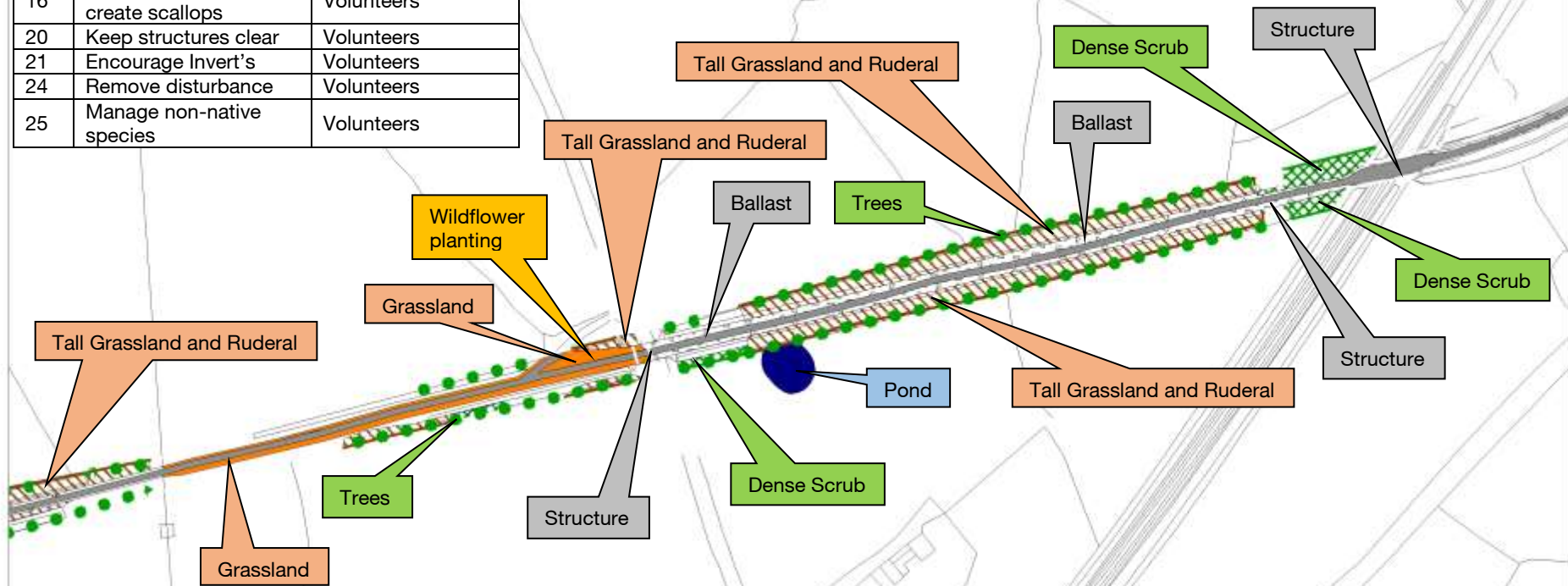
Management Prescription	Detail & Variation	Location	Priority	Timing
26) Provide interpretation material to promote awareness of the NCN and the wildlife it supports	<ul style="list-style-type: none"> <li>Develop a series of interpretation boards to highlight wildlife interest along the route. Ideally these would include an area that can be filled in or changed seasonally to give up to date information and retain interest.</li> <li>Possibly include a list of planned volunteer activities/events to encourage local people and regular path users to participate.</li> </ul>	As required	3	At any time
27) Plug planting and wildflower seeding	<ul style="list-style-type: none"> <li>Plant newly created woodland 'glades' and 'rides' with species such as dogs mercury, bluebells, wood anemone and wood avens. (see appendix 2).</li> <li>Plant open areas of wet woodland with species such as meadowsweet and hemp agrimony. (see appendix 2).</li> </ul>	Newly created woodland glades in areas with little existing ground flora	3	Replant woodlands after clearance
	<ul style="list-style-type: none"> <li>Sew wildflower seeds at access points, 'island' locations between the path and access ramps and areas of improved grassland with few flowering species present.</li> <li>All planting should ideally be locally sourced and must be native species typical of the local area. Seek advice from local conservation organisations and specialist recorders when deciding what to plant.</li> </ul>	Access points such as the ramps at Saughall Rd, the Shropshire Union Canal, the North West Coast Railway, Mannings Lane the A41 or Park Farm. Highly visible locations such as the entrance at Lime Wood Fields, alongside Total Fitness Chester, at the English/Welsh border or on the embankments alongside the Welsh Road suspension bridge.	3	Cut and rake grassland in Aug - Sep and re-seed in Feb -March
28) Create new wetland habitats  Pond and ditch enhancements	<ul style="list-style-type: none"> <li>Create new ponds in damp areas more than 2m from the path, ideally within 50m of existing ponds. New ponds should include a variety of depths, orientations, slopes and should ideally include shelves or islands to provide the maximum variety of water depths.</li> <li>Create depressions in grassland areas to collect water and encourage marshy conditions.</li> <li>Plant newly created ponds with species such as flag iris, water mint, water plantain and frogbit. (see appendix 2).</li> <li>Plant open areas of wet grassland and bog with species such as meadowsweet and cuckoo flower. (see appendix 2).</li> </ul>	Damp grassland, the base of slopes and near to existing wetland habitats.  Near to Birkenhead Junction (TN2), east of the Parkway access (TN6) west of Green Ln, west of Seahill Rd, east of Station Cottages, west of Blacon Hall Rd, west of the Shropshire Union Canal, west of the North West Coast Railway, between the A56 and A41 and north of Park Farm.	3	Digging at any time.  Clear scrub in Oct – Feb (to avoid bird nesting season)
29) Create outdoor classroom areas	<ul style="list-style-type: none"> <li>Consult with local schools and youth groups to design a suitable space, possibly including seating, screens and interpretation in a location that will not compromise other path users.</li> <li>Create trails, habitat piles, activities and interactive artworks to engage children and assist in learning.</li> </ul>	Diverse locations with wide verges such as Blacon Station	3	Dependant on what work is required.

# 6 Habitat Management Plan



Drawing 6.2

Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers



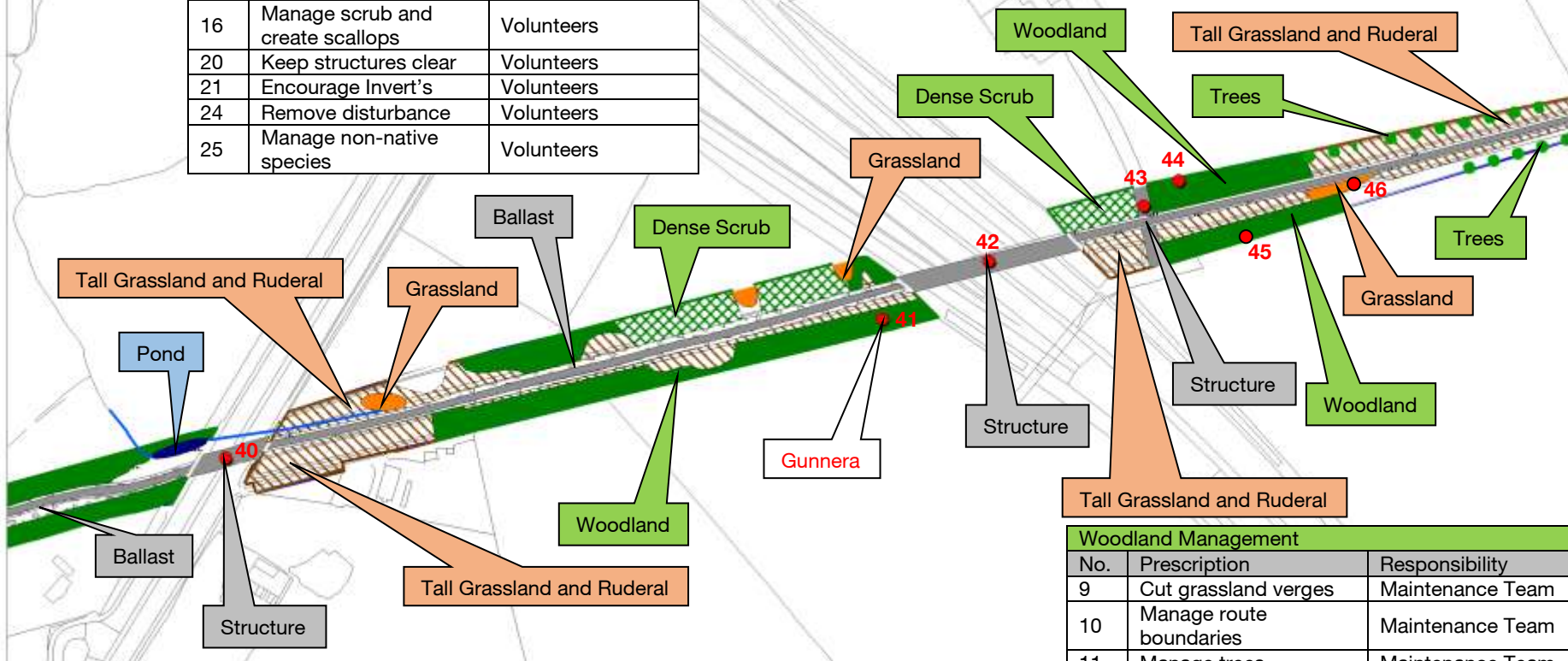
Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

Drawing 6.3

Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers



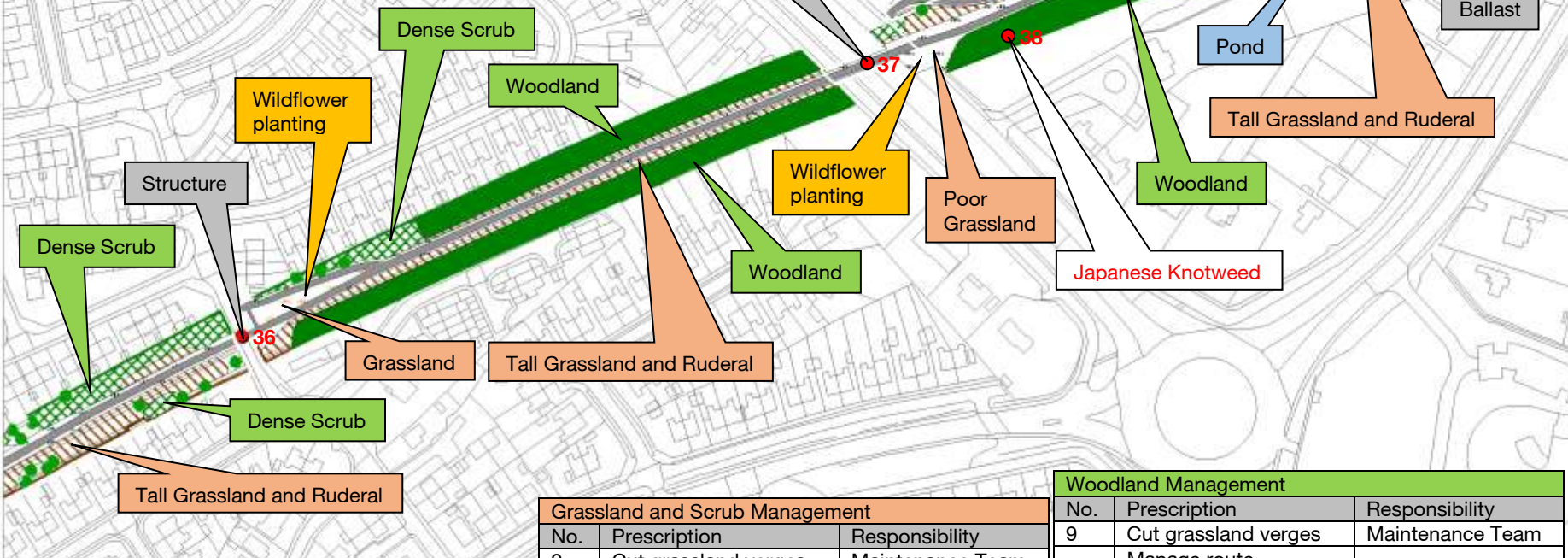
Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Drawing 6.4

Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers



Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

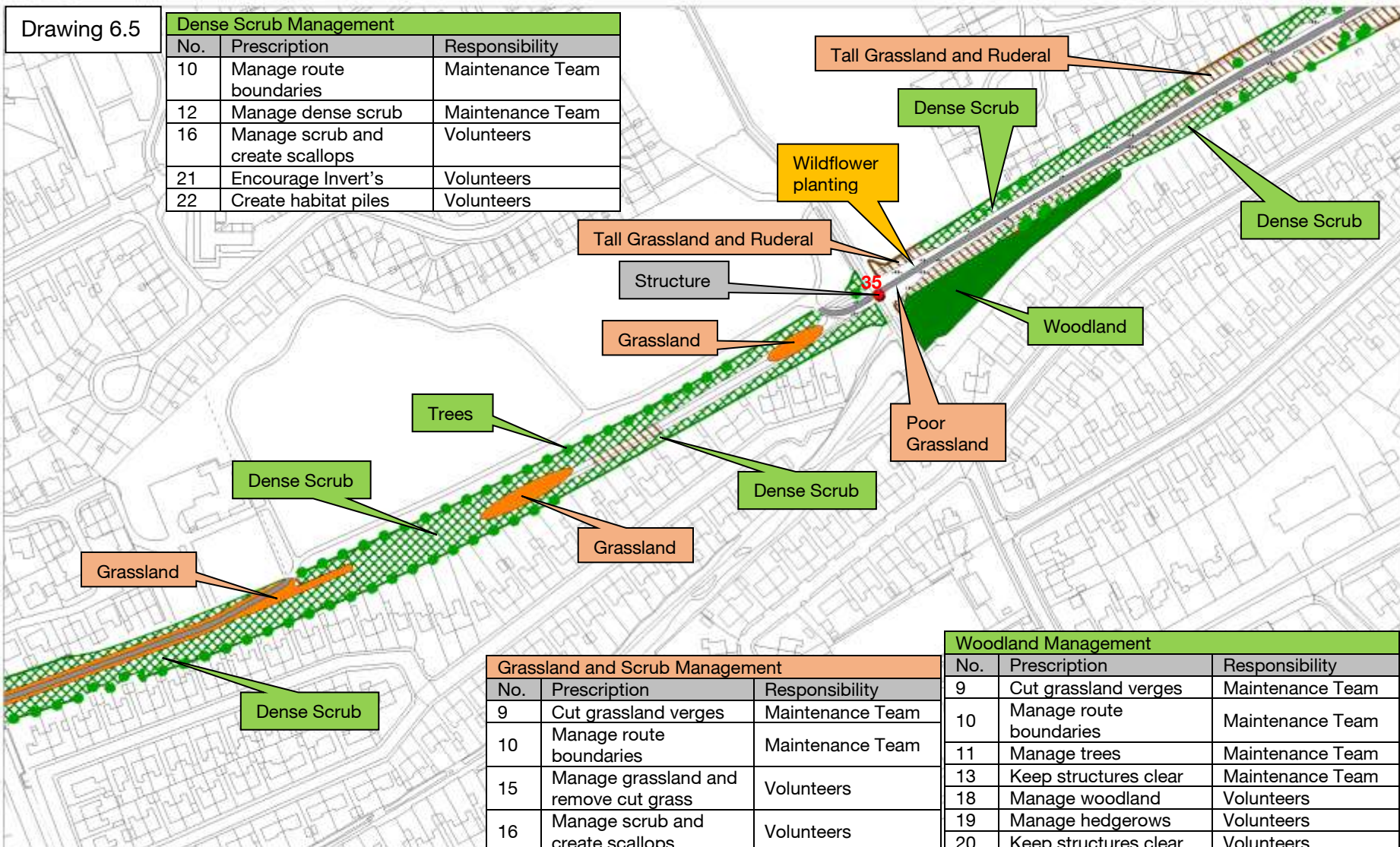
Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

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Drawing 6.5

Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers



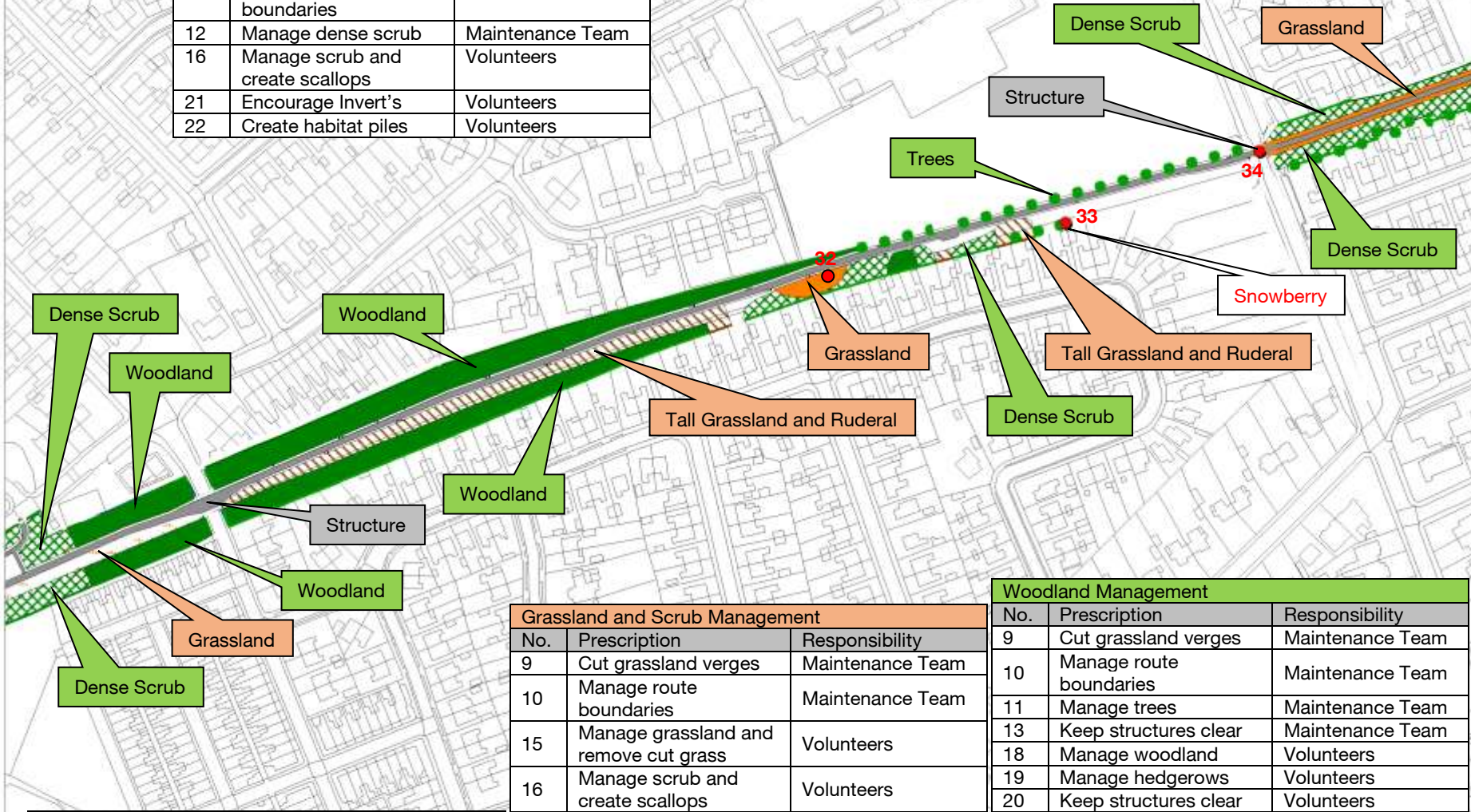
Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Drawing 6.6

Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers



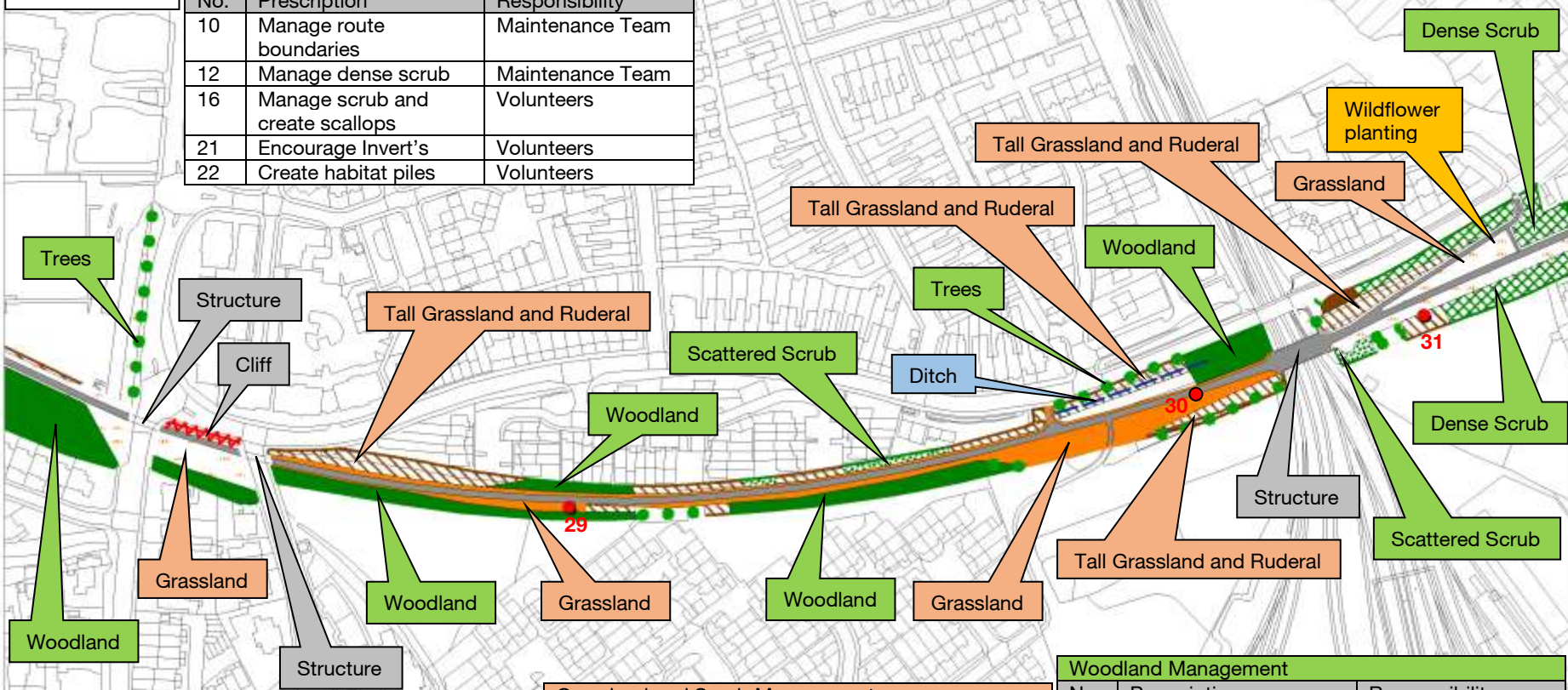
Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Drawing 6.7

Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers



Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

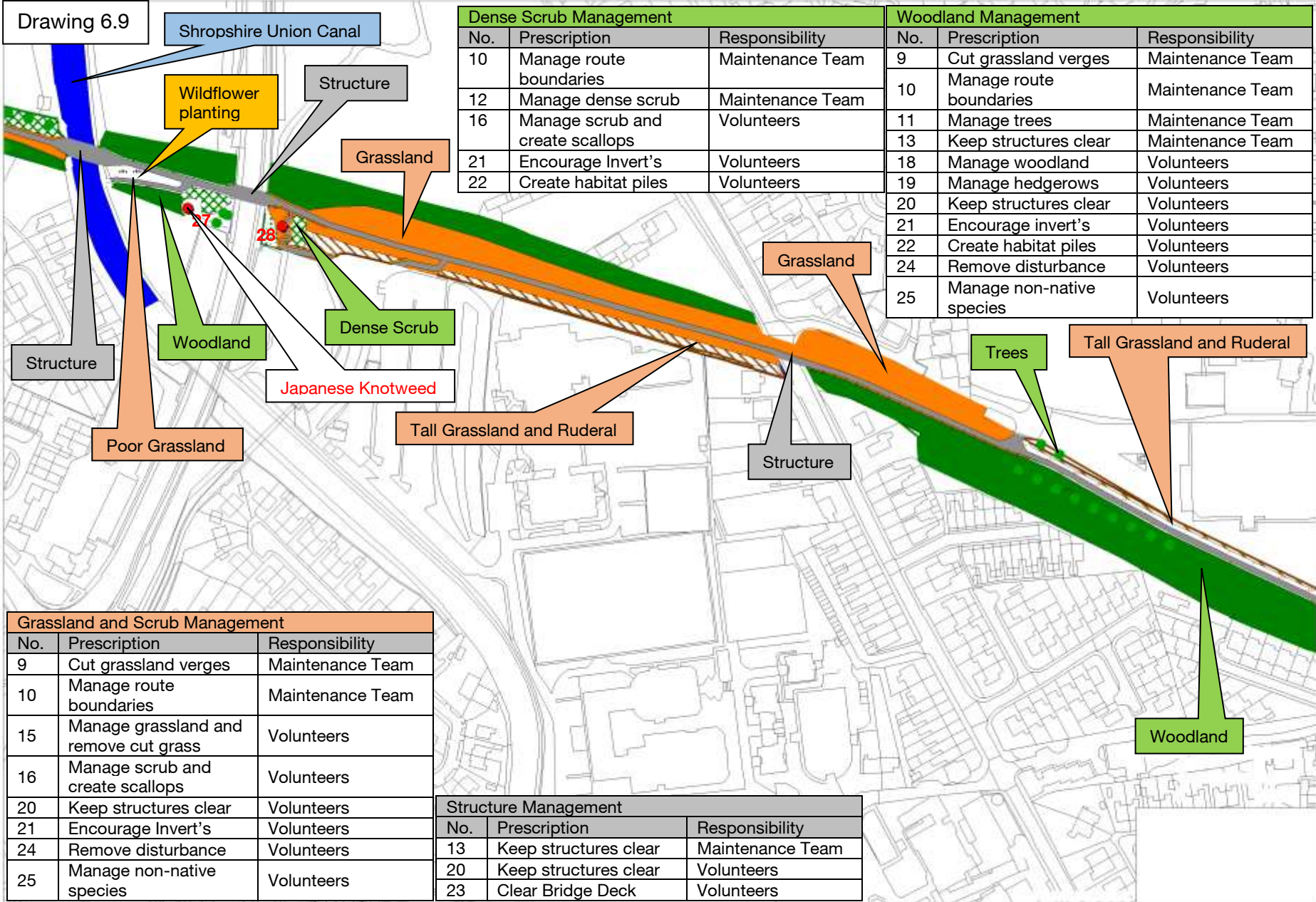
Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

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Drawing 6.9



Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

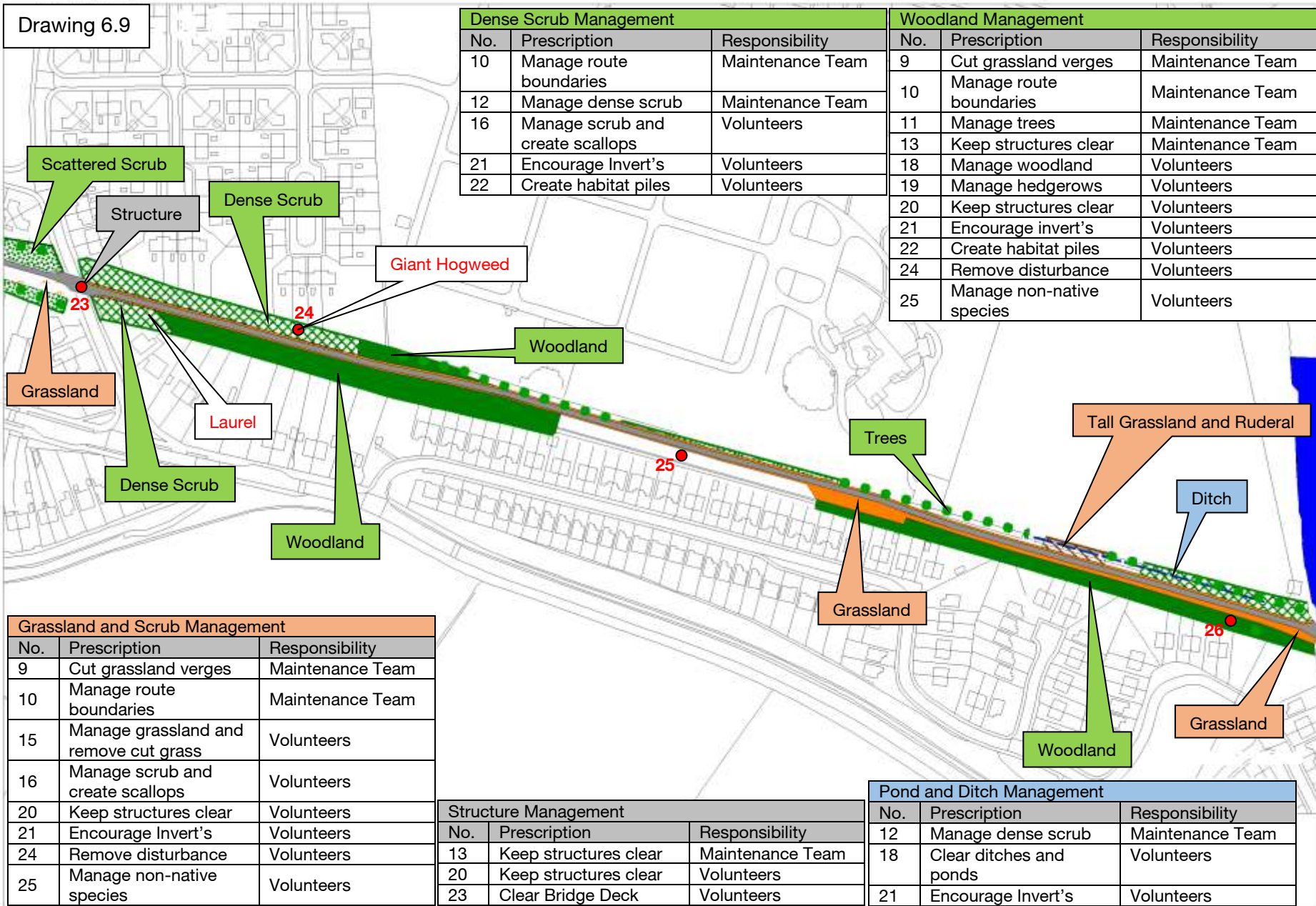
Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

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Drawing 6.9



Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

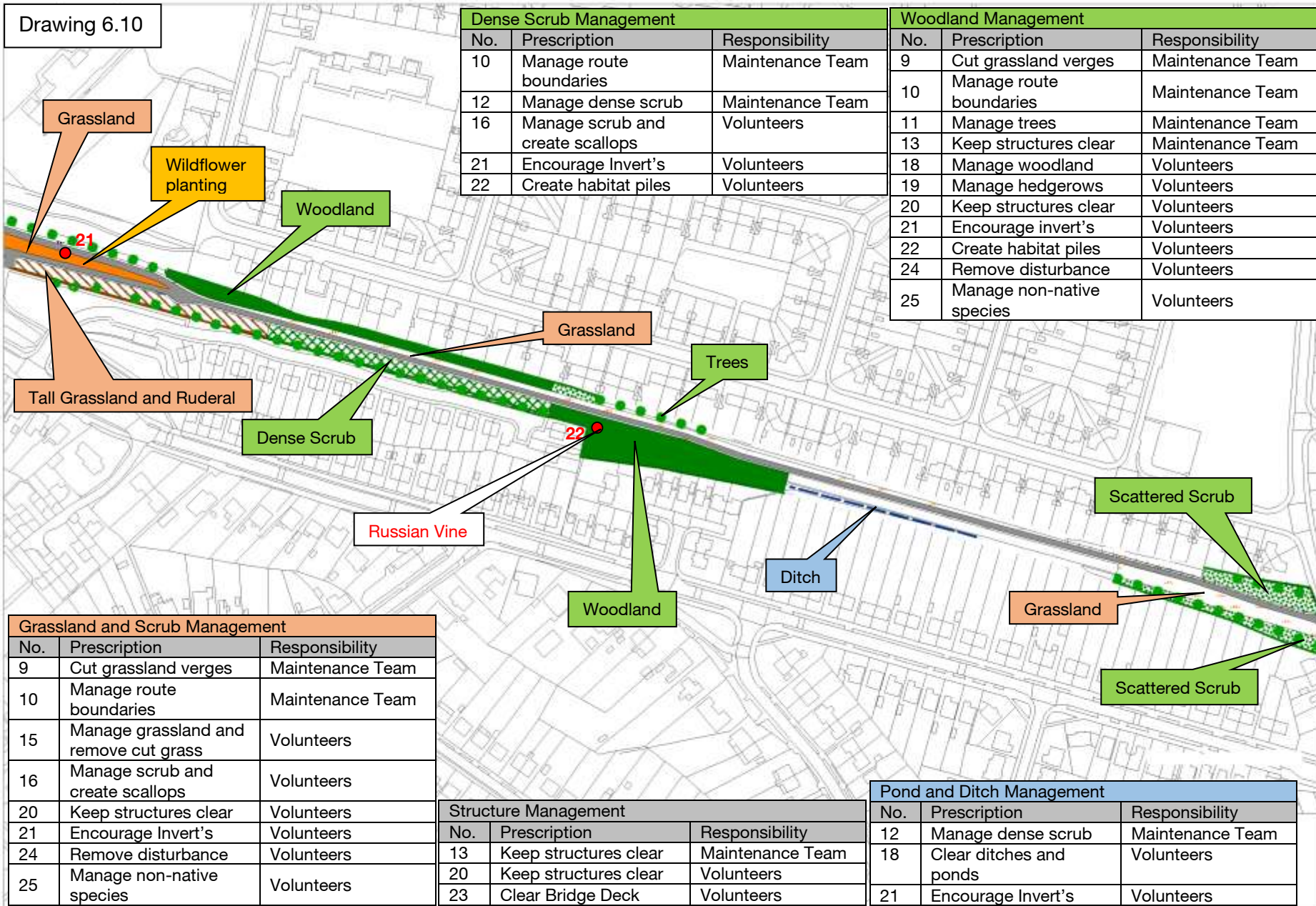
Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

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Drawing 6.10



Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

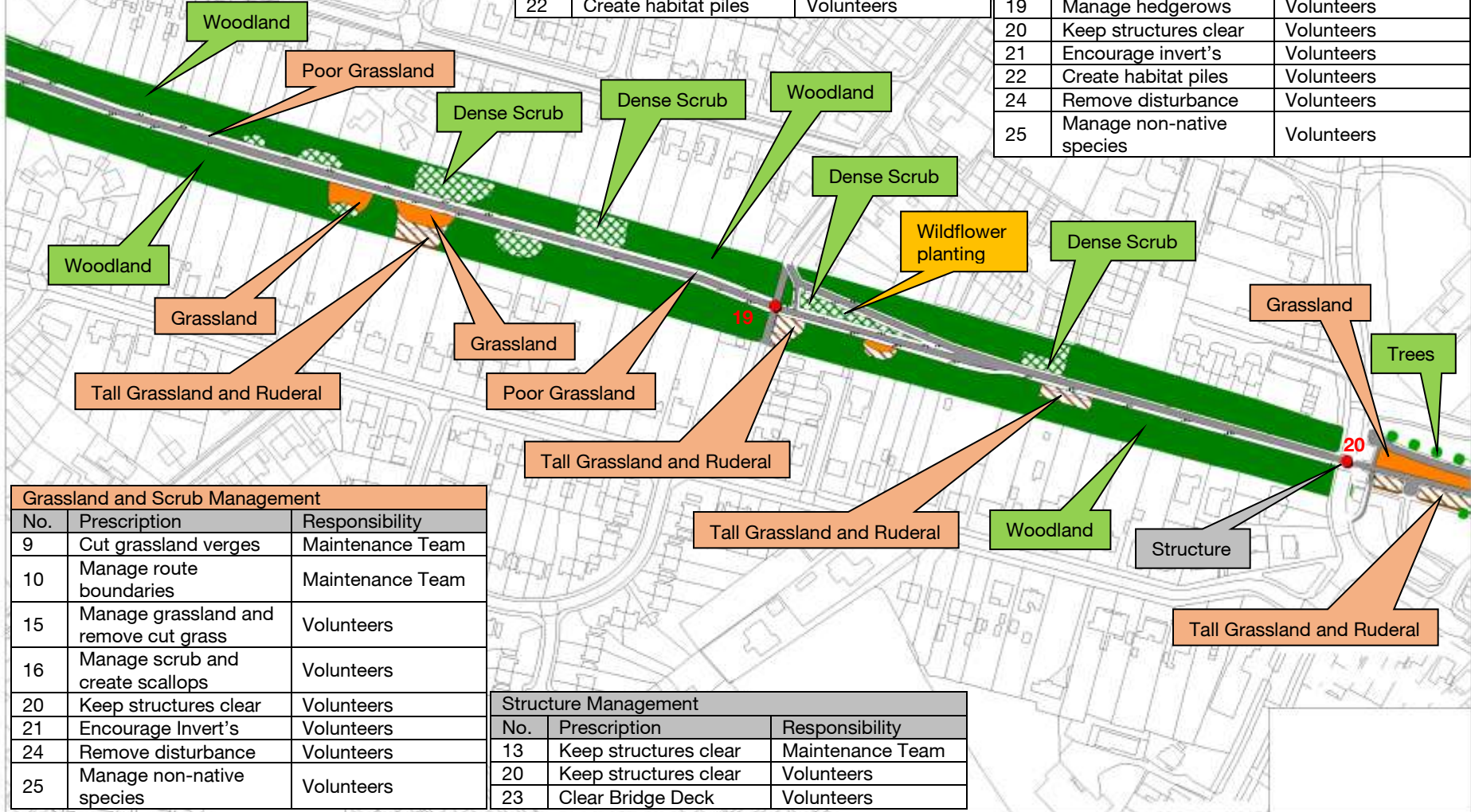
Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

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Drawing 6.11

Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

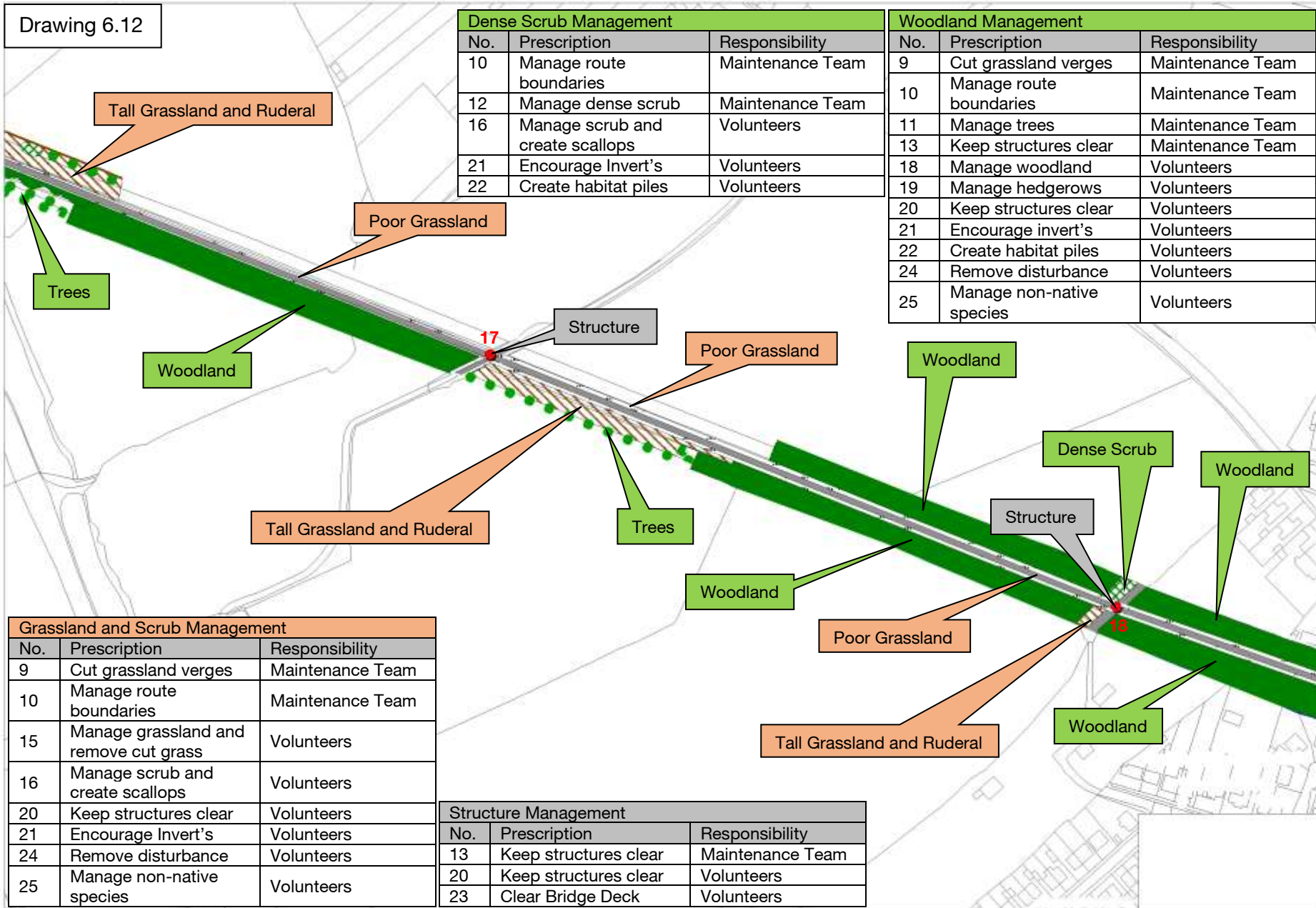
Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers



Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

Drawing 6.12



Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

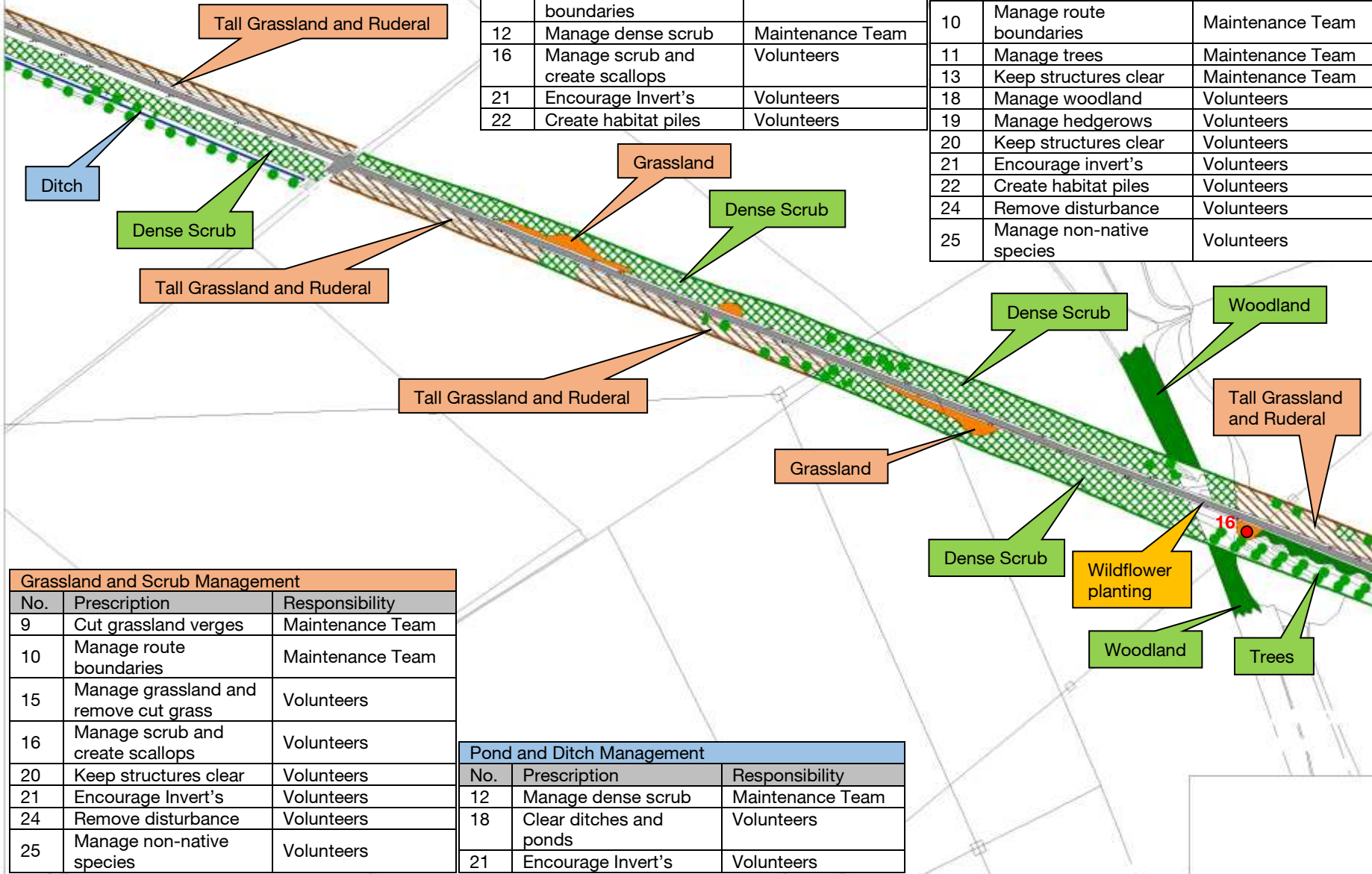
Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

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Drawing 6.13



Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

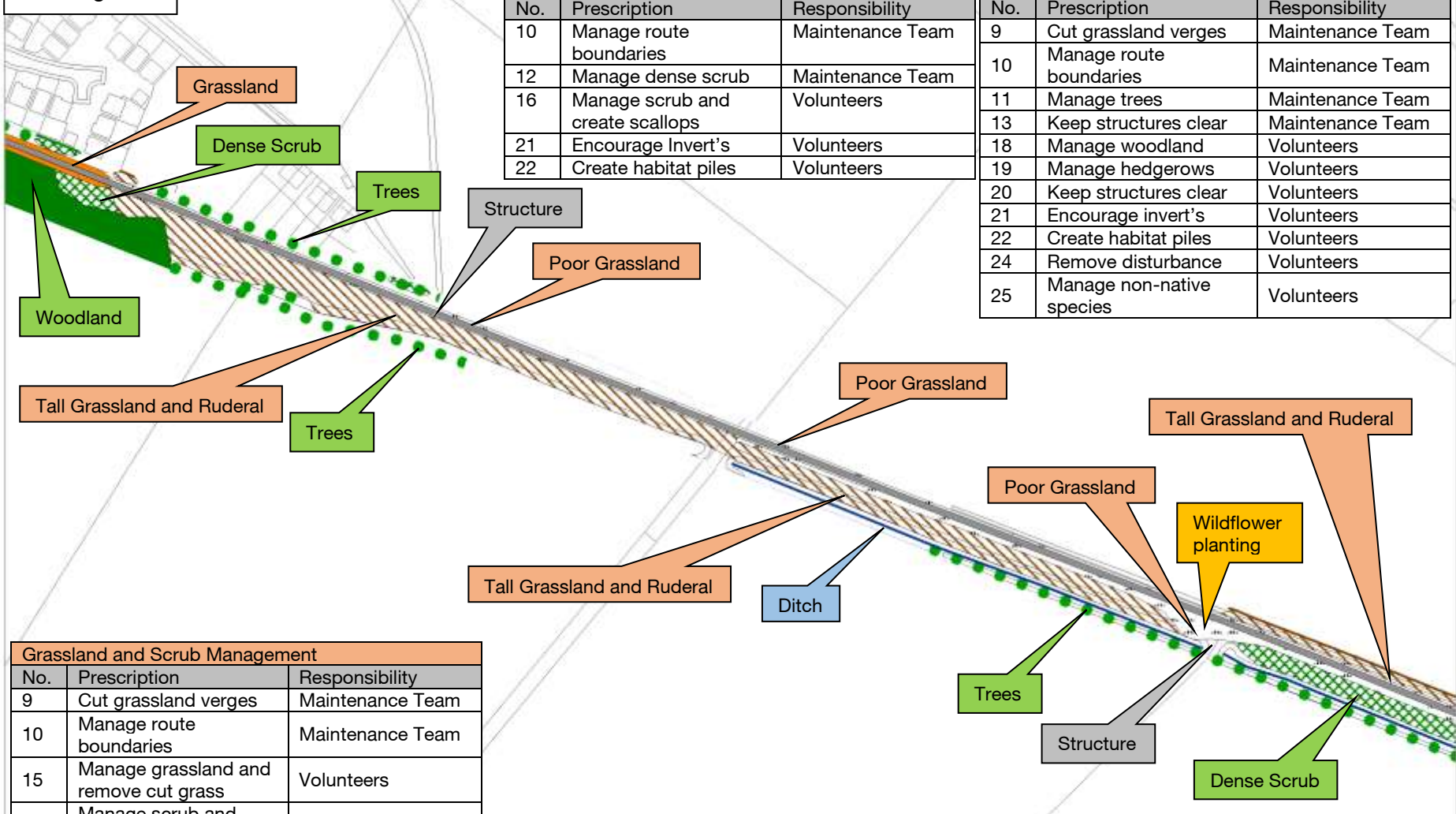
Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

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Drawing 6.14



Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

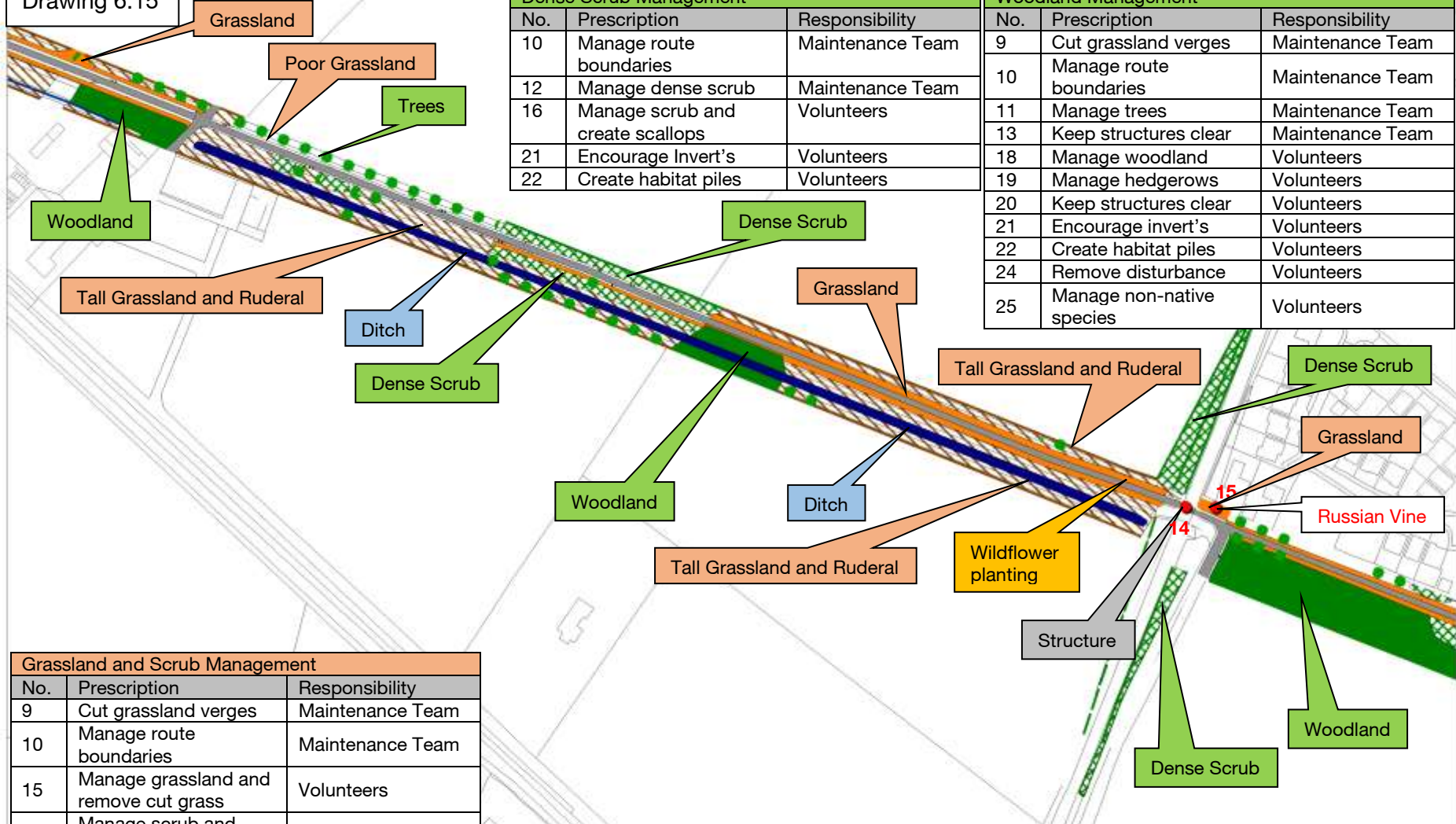
Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

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Drawing 6.15



Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

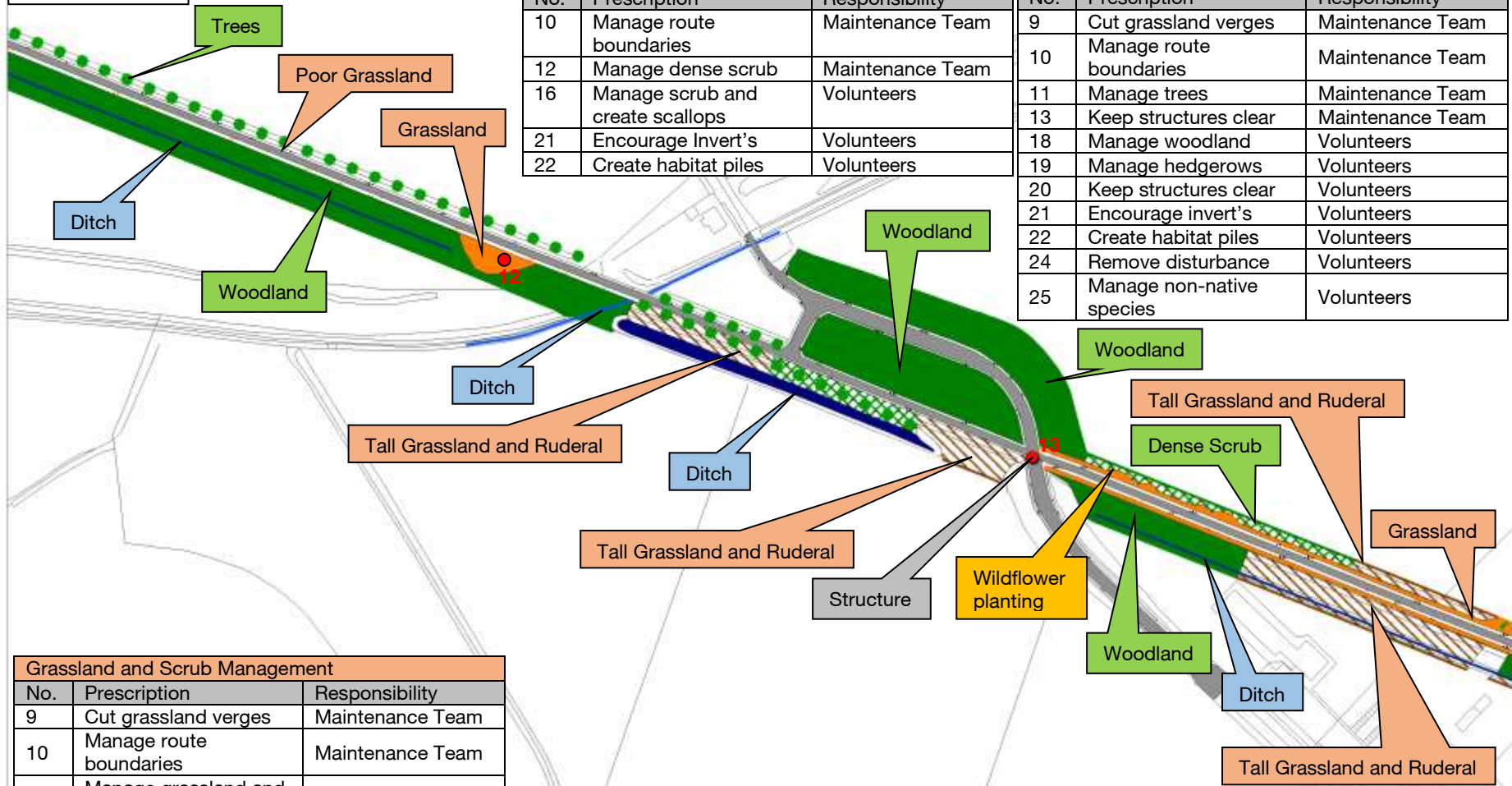
Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

Drawing 6.16



Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

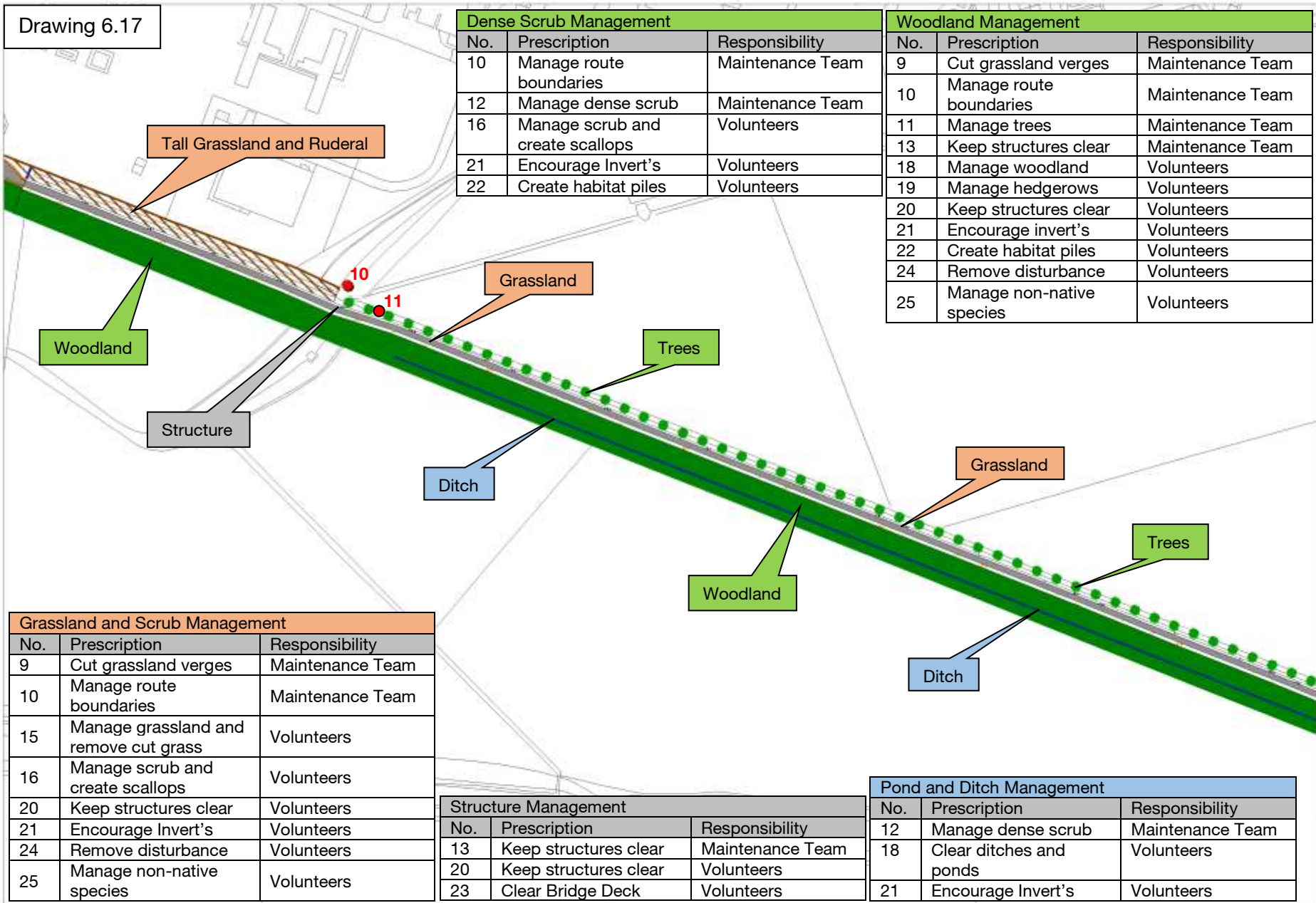
Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

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Drawing 6.17



Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

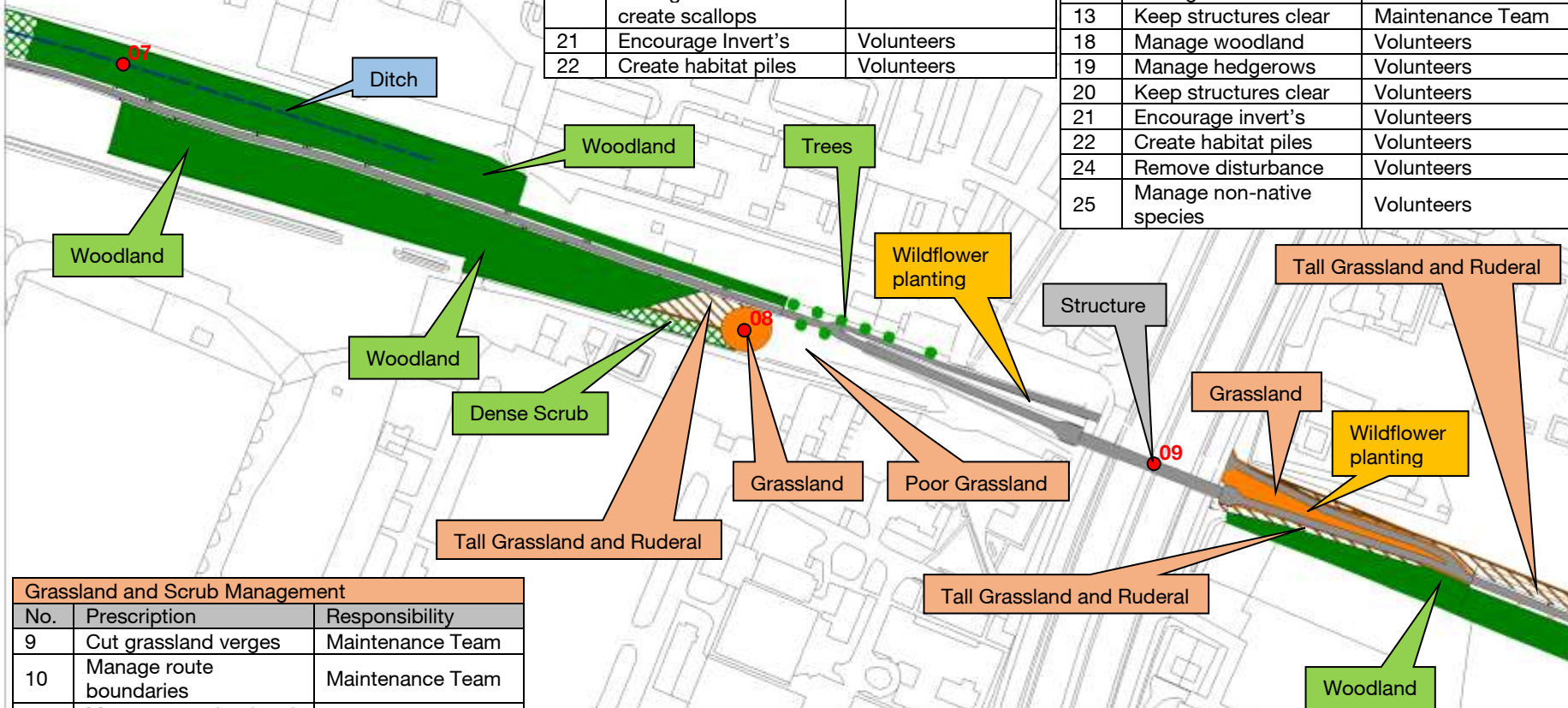
Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

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Drawing 6.18

Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers



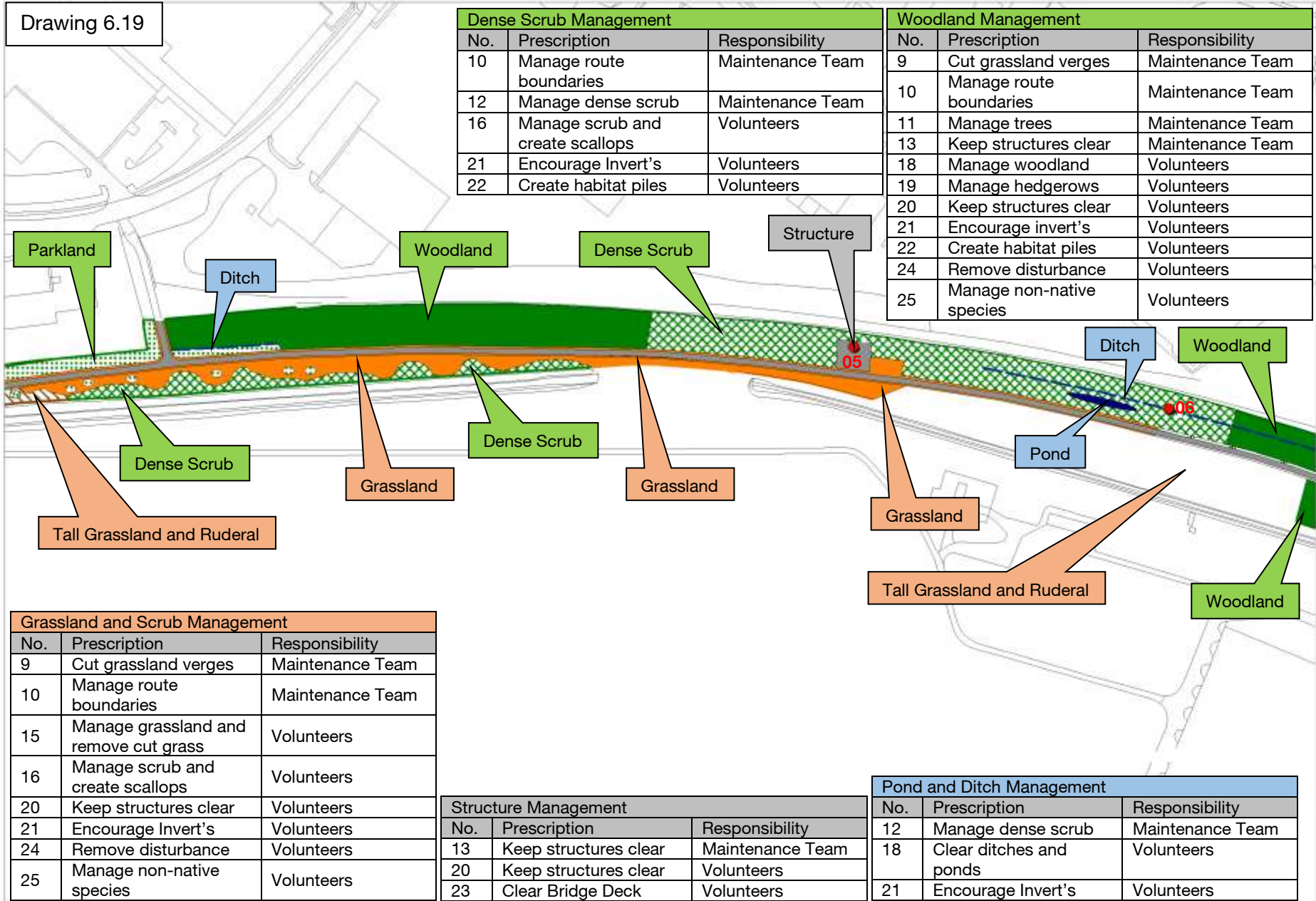
Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

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Drawing 6.19



Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

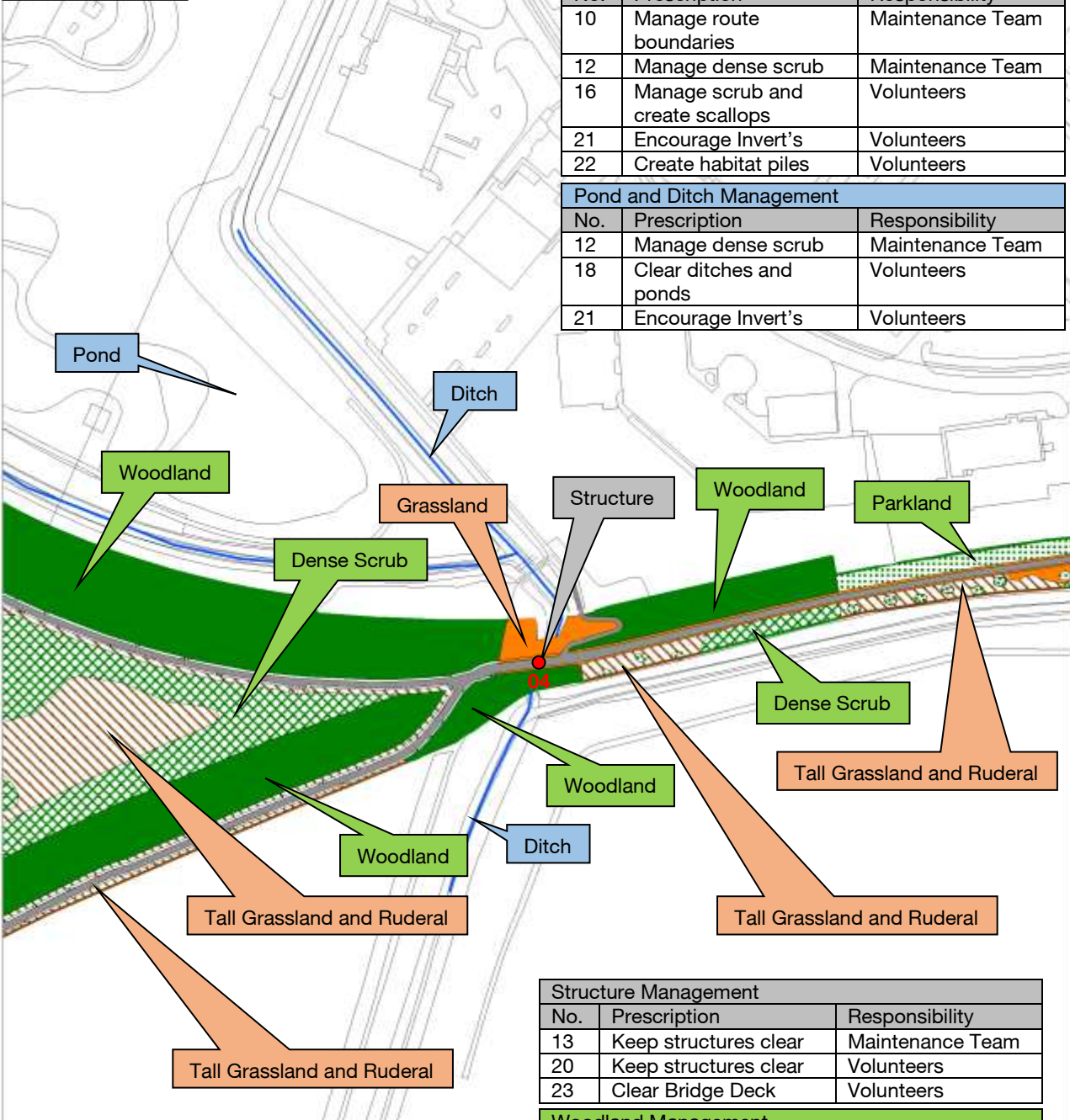
Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

Drawing 6.20



Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

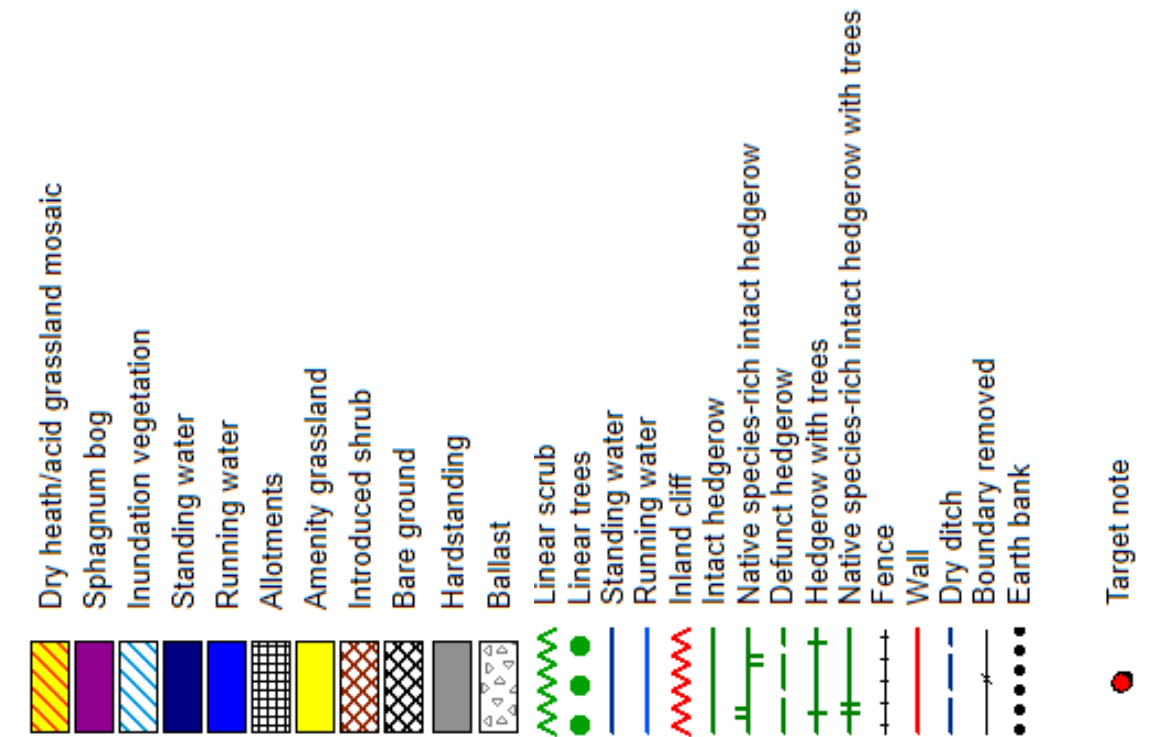
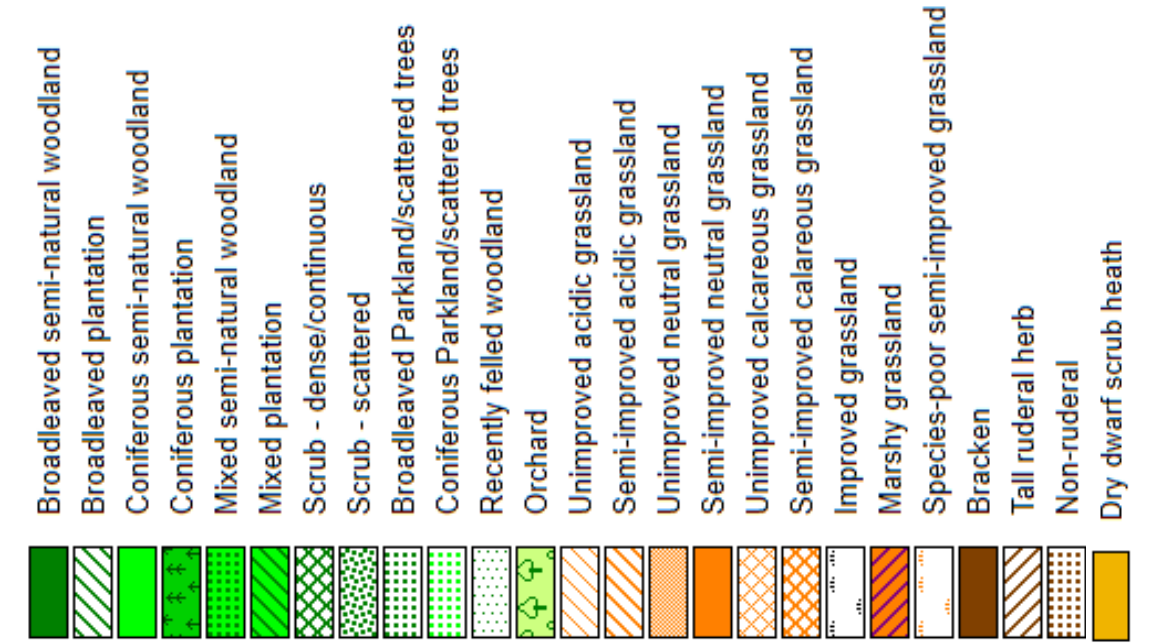
Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

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Habitat Key:



Drawing 6.21

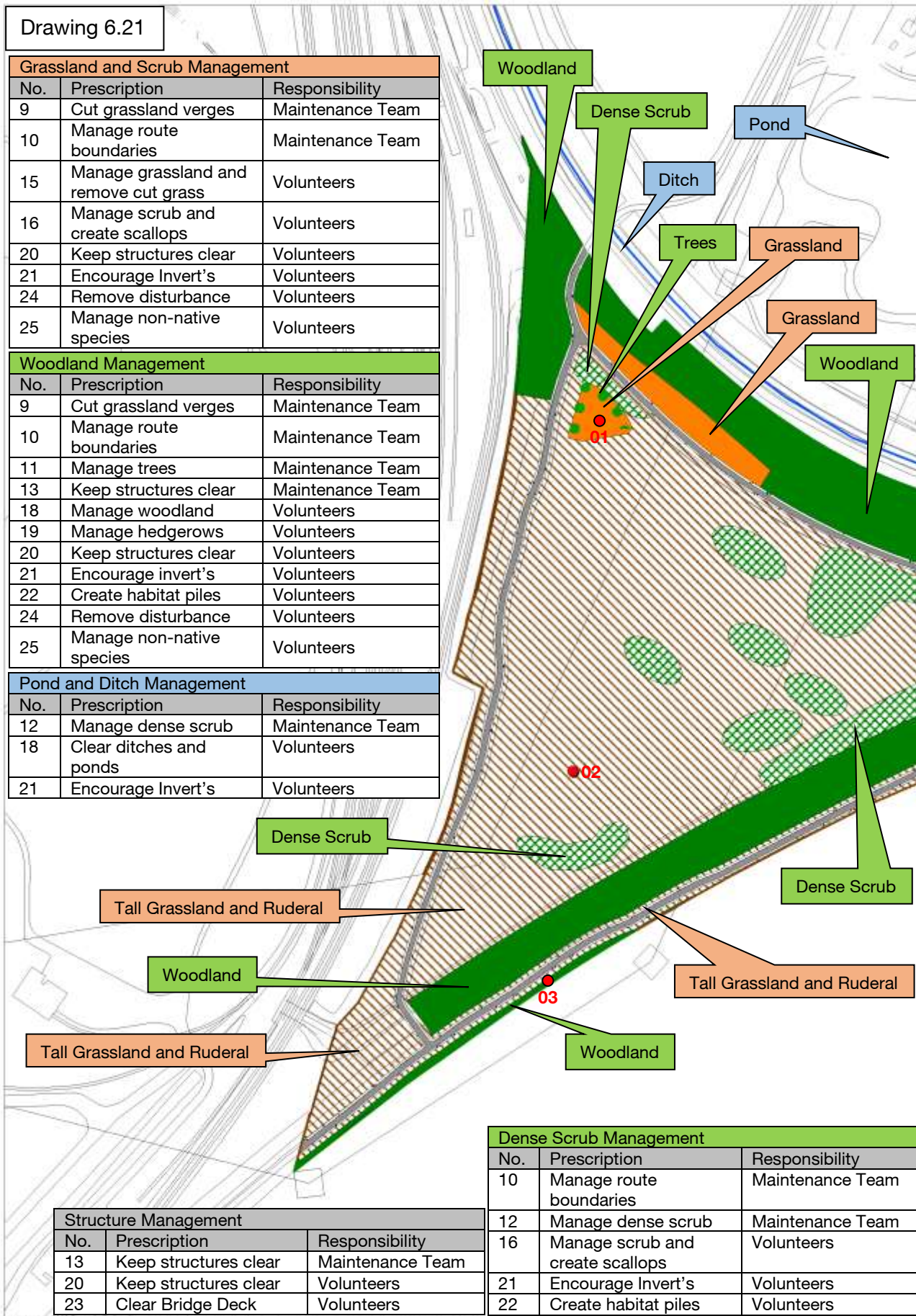
Grassland and Scrub Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
15	Manage grassland and remove cut grass	Volunteers
16	Manage scrub and create scallops	Volunteers
20	Keep structures clear	Volunteers
21	Encourage Invert's	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Woodland Management		
No.	Prescription	Responsibility
9	Cut grassland verges	Maintenance Team
10	Manage route boundaries	Maintenance Team
11	Manage trees	Maintenance Team
13	Keep structures clear	Maintenance Team
18	Manage woodland	Volunteers
19	Manage hedgerows	Volunteers
20	Keep structures clear	Volunteers
21	Encourage invert's	Volunteers
22	Create habitat piles	Volunteers
24	Remove disturbance	Volunteers
25	Manage non-native species	Volunteers

Pond and Ditch Management		
No.	Prescription	Responsibility
12	Manage dense scrub	Maintenance Team
18	Clear ditches and ponds	Volunteers
21	Encourage Invert's	Volunteers

Dense Scrub Management		
No.	Prescription	Responsibility
10	Manage route boundaries	Maintenance Team
12	Manage dense scrub	Maintenance Team
16	Manage scrub and create scallops	Volunteers
21	Encourage Invert's	Volunteers
22	Create habitat piles	Volunteers

Structure Management		
No.	Prescription	Responsibility
13	Keep structures clear	Maintenance Team
20	Keep structures clear	Volunteers
23	Clear Bridge Deck	Volunteers



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## Target Notes

Target Note	Drawing Number	Description
1	3.1	Semi-improved grassland within the tall ruderal habitat and opposite verge. The verge had a 1.5m mown edge. The grassland was forb rich and included common vetch <i>Vicia sativa</i> , vetchling <i>Lathyrus</i> sp., bird's-foot trefoil, ribwort plantain <i>Plantago lanceolata</i> , tare <i>Vicia hirsuta</i> , black medic <i>Medicago lupulina</i> and occasional silverweed <i>Argentina anserina</i> . The verge had a greater proportion of coarser grasses although fine grasses were still present. Forb species in the verge included those recorded in the smaller patch and greater mullein <i>Verbascum thapsus</i> , ragwort <i>Jacobaea vulgaris</i> , white campion and sheep's sorrel <i>Rumex acetosella</i> . Some scattered trees were present in the grassland. Anthills and common blue butterfly were recorded in this habitat patch.
2	3.1	A depression that was dry at the time of the survey but the vegetation suggested that it sometimes held water. Species present included reedgrass, hard rush and sedge <i>Carex</i> sp. as well as species less suited to waterlogged conditions such as creeping cinquefoil <i>Potentilla reptans</i> .
3	3.1	Semi-improved grassland verges with fine and coarse grasses. Forbs recorded included those tolerant of some nutrient enrichment such as creeping buttercup, meadow buttercup <i>Ranunculus acris</i> , creeping cinquefoil, bird's-foot trefoil and ribwort plantain.
4	3.2	Area of semi-improved grassland that encompasses an area on a bridge top. On the bridge top the grassland had a thin sward that was becoming invaded by bramble and silver birch saplings. Off the bridge, the grassland included mown verges 1.5m in width with at least 1m unmown but becoming wider to the east where scattered trees were also present within the grassland. The semi-improved grassland was diverse and included mouse-eared hawkweed, forget-me-not, bird's-foot trefoil, yarrow <i>Achillea millefolium</i> , vetch, tare and black knapweed <i>Centaurea nigra</i> . A variety of grass species were present including bent <i>Agrostis</i> sp., crested dog's-tail <i>Cynosurus cristatus</i> , meadow grass <i>Poa</i> sp., soft brome <i>Bromus hordeaceus</i> , barren brome, sweet vernal <i>Anthoxanthum odoratum</i> and Yorkshire fog <i>Holcus lantus</i> . Some areas of more vigorous growth were present with curled dock, vetch, hogweed, black knapweed and nettle.
5	3.3	Establishing vegetation on hard standing. This was dominated by mouse-ear hawkweed with fine grasses becoming established around the edges of the habitat. The adjacent semi-improved grassland was diverse and forb rich. Forb species included mouse-eared hawkweed, perforate St.John's-wort <i>Hypericum perforatum</i> and mignonette <i>Reseda lutea</i> . Common blue butterfly were recorded in this habitat type.
6	3.3	A drain, dry at the time of the survey but including vegetation typical of wet conditions such as reedmace <i>Typha</i> , hard rush and meadowsweet <i>Ulmaria filipendula</i> .
7	3.4	Drain holds water in this location. Water is approximately 4m wide. It is shaded by adjacent trees, predominantly alder <i>Alnus glutinosa</i> , with no aquatic or emergent vegetation noted. Vegetation surrounding the drain was tall ruderal species, predominantly nettle with male fern also present.
8	3.4	Rabbit grazed semi-improved grassland with a short sward. Although patches of tall ruderal vegetation were present (curled dock, spear thistle and ragwort), a variety of forb species were present in the short mown sward including mouse-ear hawkweed, creeping cinquefoil, bird's-foot trefoil and pink flower in photo. Anthills were present in this grassland and common

		blue butterfly was recorded in this habitat patch.
9	3.4	Underbridge over the A550. Bridge is a modern construction tied arch bridge with metal deck. The abutments were steep but vegetated, similar to a green wall type habitat. The vegetation on these steep embankments was semi-improved grassland of moderate diversity. The south-facing embankment was more forb and species rich than the north facing embankment. Grass species included fine grasses such as bent, fescue and sweet vernal grass in addition to false oat grass and cock's foot. A large variety of forb species were also present including black knapweed, white campion and poppies <i>Papaver</i> sp.. A variety of tall ruderal species were also present in the sward but did not dominate the habitat including; comfrey, prickly sow thistle <i>Sonchus oleraceus</i> , sorrel <i>Rumex acetosa</i> , woad <i>Isatis tinctoria</i> , broad leaved dock <i>Rumex obtusifolius</i> , hogweed and ragwort.
10	3.5	Brick overbridge. Brickwork in good condition although some gaps potentially suitable for roosting bats. Polypody, hart's tongue and wall rue also present although in limited quantities.
11	3.5	A very large mature alder present at this location.
12	3.6	A patch of semi-improved grassland with some scattered bramble scrub present. A variety of grass species were present including meadow grass, barren brome and cock's-foot. A variety of forb species were present including yarrow, creeping cinquefoil, ribwort plantain, tare, vetch, cranesbill and meadow buttercup. Common blue butterfly and ant hills present in this habitat patch.
13	3.6	Overbridge constructed of brick with metal girders. Generally in good condition but some gaps in brickwork provide features that could be used by roosting bats. Ivy <i>Hedera helix</i> present over the abutments and will need to be cleared for inspection.
14	3.7	Brick bridge with metal girders. Brickwork in generally good condition but small gaps between stones on abutment provide potential roosting locations for bats. The brick abutments were overgrown with ivy, needs removal for inspection.
15	3.7	Russian vine <i>Fallopia baldschuanica</i>
16	3.9	Semi-improved grassland with moderate diversity. Contains coarse grasses (such as cock's-foot and false oat grass) and a variety of forbs, most of which are tolerant of nutrient improvement.
17	3.10	Stone overbridge with some small gaps that provide low potential to be used by bats. The structure was moderately clear of vegetation although ivy was growing up one side of the bridge and harts tongue was also present. Elder and bramble were growing close to the bridge.
18	3.10	Brick built bridge with some possible gaps in brickwork that could be used by roosting bats. Some ivy was growing on the bridge but the surrounding vegetation was managed. Grass was mown to approximately 5m in width for a distance of approximately 20m to the bridge.
19	3.11	Brick built overbridge with some ivy and wall rue growing on the structure. Generally in good condition with low potential to be used by roosting bats.
20	3.11	Overbridge constructed of stone and brick.

21	3.11	Verges comprise semi-improved grassland, 1m of which is mown and 2m unmown further from the bridge, but being 6m wide (half of which was mown) around the bridge. A variety of grass species were present including wood false brome, reflecting the adjacent wooded habitat types, finer species such as bent and crested dog's-tail and coarser species. Forb species present included ox-eye daisy <i>Leucanthemum vulgare</i> , black knapweed, meadow vetchling, common vetch and veronica speedwell <i>Veronica filiform</i> . Scattered bramble was present in the sward near the bridge.
22	3.12	Russian vine present.
23	3.13	Blacon Hall Road underbridge. Deck comprises hard standing across the span. The scrubby habitat to the immediate west of the bridge included laurel.
24	3.13	Giant hogweed.
25	3.13	Verges comprise semi-improved grassland, 1.5m of which is mown and 2m unmown. Grass species include finer species such as fescue and sweet vernal. Taller species around the edge of this habitat included hedge woundwort <i>Stachys sylvatica</i> , figwort <i>Scrophularia</i> sp. and cow parsley <i>Anthriscus sylvestris</i> .
26	3.14	Mature oak <i>Quercus</i> sp. tree.
27	3.14	Large stand of Japanese knotweed.
28	3.14	Semi-improved grassland located on a bank. This is dominated by grass species west of the underbridge, but forb rich to the east of the underbridge, albeit with relatively low diversity. The grassland around the edges of this habitat had a high proportion of tall ruderal species in the sward.
29	3.15	A small cleared plot present at this point where wildflower seeding has been undertaken by a local school. Set at the edge of an area of semi-improved grassland.
30	3.15	A small cleared plot present at this point where wildflower seeding has been undertaken by a local school. Set at the edge of an area of semi-improved grassland.
31	3.15	A small cleared plot present at this point where wildflower seeding has been undertaken by a local school.
32	3.16	Semi-improved grassland. Grass species present included meadowgrass, bent and false-oat grass. A variety of leguminous species were present in this habitat patch including bush vetch, vetchling and tare. Other forbs recorded in this habitat patch included ragwort. At the edge of this habitat, a small cleared plot was present where wildflower seeding had been undertaken by a local school.
33	3.16	A small cleared plot present at this point where wildflower seeding has been undertaken by a local school. The vegetation behind the plot included a stand of snowberry <i>Symphoricarpos albus</i> .
34	3.16	Newton Lane overbridge.
35	3.17	Brick overbridge with some gaps in the brickwork. Wall rue was recorded growing on the bridge.

36	3.18	Mannings lane overbridge. The dense continuous scrub habitat to the east of this bridge was dominated by scrubby elm.
37	3.18	Brick overbridge with multiple spans. The bridge was generally in good condition but had gaps between spans and cracks and gaps under the lintel that provided good features for roosting bats. Some saplings were growing in the 5m zone.
38	3.18	A stand of Japanese knotweed is present in the woodland understorey, along with a small stand of bamboo.
39	3.19	Double span overbridge. One span constructed of concrete and the other of brick. The gap between the spans provided a feature that could be used by roosting bats. A gap is also present in the concrete half that had potential to be used by roosting bats.
40	3.19	Rabbit grazed semi-improved grassland. This has a short sward with species such as violet <i>Viola</i> sp., yarrow and coltsfoot <i>Tussilago farfara</i> present with patches of tall ruderal vegetation of a variety of species. Tall ruderal species included prickly sow thistle, comfrey, burdock and thistles.
41	3.19	A large rabbit <i>Oryctolagus cuniculus</i> warren was present along this embankment which included holes that had potentially been enlarged by a larger mammal such as badger <i>Meles meles</i> .
42	3.19	Overbridge under the A55. Bridge has concrete structure with gaps that may provide low quality roosting opportunities for bats.
43	3.19	Brick overbridge with some ivy starting to grow up it. Will need to be controlled before it obscures bridge inspections. Brickwork was in very good condition but a crack was present under the arch which provided high potential to be used by roosting bats.
44	3.19	Possible multi-hole badger sett on embankment.
45	3.19	A mature tree on bank immediately above the path supporting fungi on a scar from branch removal.
46	3.19	Semi-improved grassland with a low to moderate diversity. Grass species present included meadowgrass., cock's-foot and soft brome. Forb species included square-stalked St. John's-wort <i>Hypericum quadrangulum</i> , black knapweed, common vetch and forget-me-not. Patches of nettle were also present in this habitat.
47	3.21	Underbridge over a muddy farm track.
48	3.21	Railway corridor fenced off with no public access. At the southern end saplings had been planted. Planted species included hazel, field maple, hawthorn, willow and self-set ash saplings. This area was not inspected.

## **7 Bibliography and References**

# Appendix 1: Preliminary Ecological Appraisal

## Appendix 2: Positive Indicator Species

### Grassland Indicator Species

### Woodland Indicator Species

Common Name	Scientific Name	Common Name	Scientific Name
Adder's Tongue Fern	( <i>Ophioglossum vulgatum</i> )	Betony	( <i>Stachys officinalis</i> )
Autumn Gentian	( <i>Gentianella amarella</i> )	Bluebell	( <i>Hyacinthoides non-scripta</i> )
Betony	( <i>Betonica officinalis</i> )	Bugle	( <i>Ajuga reptans</i> )
Bird's foot Trefoil	( <i>Lotus corniculatus</i> )	Foxglove	( <i>Digitalis purpurea</i> )
Bush Vetch	( <i>Vicia cracca</i> )	Garlic Mustard	( <i>Alliaria petiolata</i> )
Common Milkwort	( <i>Polygala vulgaris</i> )	Greater Stitchwort	( <i>Stellaria holostea</i> )
Common Spotted Orchid	( <i>Dactylorhiza fuchsii</i> )	Hart's Tongue Fern	( <i>Fern Phyllitis scolopendrium</i> )
Common Twayblade	( <i>Listera ovata</i> )	Hedge Bedstraw	( <i>Galium mollugo</i> )
Cowslip	( <i>Primula veris</i> )	Hedge Woundwort	( <i>Stachys sylvatica</i> )
Crosswort	( <i>Galium cruciata</i> )	Meadowsweet	( <i>Filipendula ulmaria</i> )
Cuckoo Flower	( <i>Cardamine pratensis</i> )	Nettle-leaved Bellflower	( <i>Campanula trachelium</i> )
Devil's-bit Scabious	( <i>Succisa pratensis</i> )	Perforate St John's Wort	( <i>Hypericum perforatum</i> )
Dyer's Greenweed	( <i>Genista tinctoria</i> )	Primrose Primula	( <i>Primula vulgaris</i> )
Field Scabious	( <i>Knautia arvensis</i> )	Ragged Robin	( <i>Lychnis flos-cuculi</i> )
Field Woodrush	( <i>Luzula campestris</i> )	Ramsons (Wild Garlic)	( <i>Allium ursinum</i> )
Grass of Parnassus	( <i>Parnassia palustris</i> )	Red Campion	( <i>Silene dioica</i> )
Greater Bird's-foot Trefoil	( <i>Lotus uliginosus</i> )	Sanicle	( <i>Sanicula europa</i> )
Greater Burnet	( <i>Sanguisorba officinalis</i> )	Selfheal	( <i>Prunella vulgaris</i> )
Green-winged Orchid	( <i>Orchis morio</i> )	Violets	( <i>Viola spp</i> )
Harebell	( <i>Campanula rotundifolia</i> )	Wood Anemone	( <i>Anemone nemorosa</i> )
Heath Milkwort	( <i>Polygala serpyllifolia</i> )	Wood Avens	( <i>Geum urbanum</i> )
Kidney Vetch	( <i>Anthyllis vulneraria</i> )	Wood Sage	( <i>Teucrium scorodonia</i> )
Knapweed/Hardhead	( <i>Centaurea nigra</i> )	Wood Sorrel	( <i>Oxalis acetosella</i> )
Lady's Bedstraw	( <i>Galium verum</i> )	Woodruff Galium	( <i>Galium odoratum</i> )
Limestone Bedstraw	( <i>Galium sternerii</i> )	Yellow Archangel	( <i>Lamiastrum galeobdolon</i> )
Lousewort	( <i>Pedicularis sylvatica</i> )		
Marjoram	( <i>Origanum vulgare</i> )		
Marsh Marigold	( <i>Caltha palustris</i> )		
Meadow Cranesbill	( <i>Geranium pratense</i> )		
Meadow Saxifrage	( <i>Saxifraga granulata</i> )		
Meadow Vetchling	( <i>Lathyrus pratensis</i> )		
Meadowsweet	( <i>Filipendula ulmaria</i> )		
Mountain Pansy	( <i>Viola lutea</i> )		
Pepper Saxifrage	( <i>Silaum silaus</i> )		
Pignut	( <i>Conopodium majus</i> )		
Ragged Robin	( <i>Lynchnis flos-cuculi</i> )		
Restharrow	( <i>Ononis repens</i> )		
Rockrose	( <i>Helianthemum chamaecistus</i> )		
Sawwort	( <i>Serratula tinctoria</i> )		
Self-heal	( <i>Prunella vulgaris</i> )		
Sneezewort	( <i>Achillea ptarmica</i> )		
Southern Marsh Orchid	( <i>Dactylorhiza praetermissa</i> )		
Stemless Thistle	( <i>Cirsium acaulon</i> )		
Tormentil	( <i>Potentilla erecta</i> )		
Wild Thyme	( <i>Thymus drucei</i> )		
Yellow Rattle	( <i>Rhinanthus minor</i> )		

## Appendix 3: Legally Controlled and Non-native Species

### Legally controlled or pest species

### Non-native woodland species

Common Name	Scientific Name	Common Name	Scientific Name
American Skunk-cabbage	( <i>Lysichiton americanus</i> )	Cedar	( <i>Cedrus libani</i> )
Broad-leaved dock <sup>1</sup>	( <i>Rumex obtusifolius</i> )	Cherry Plum	( <i>Prunus cerasifera</i> )
Canadian Goldenrod	( <i>Solidago canadensis</i> )	Copper Beech	( <i>Fagus sylvatica f. purpurea</i> )
Canadian Waterweed	( <i>Elodea canadensis</i> )	Cypress	( <i>Cupressus x leylandii</i> )
Carolina Watershield	( <i>Cabomba caroliniana</i> )	Douglas Fir	( <i>Pseudotsuga menziesii</i> )
Common ragwort <sup>1</sup>	( <i>Senecio jacobaea</i> )	European Larch	( <i>Larix decidua</i> )
Cotoneaster	( <i>Cotoneaster species</i> )	Holm Oak	( <i>Quercus ilex</i> )
Creeping or field thistle <sup>1</sup>	( <i>Cirsium arvense</i> )	Horse Chestnut	( <i>Aesculus hippocastanum</i> )
Curled dock <sup>1</sup>	( <i>Rumex crispus</i> )	Huntingdon Elm	( <i>Ulmus x hollandica 'vegeta'</i> )
Curly Waterweed	( <i>Lagarosiphon major</i> )	Irish Yew	( <i>Taxus baccata 'fastigiata'</i> )
Evergreen Oak	( <i>Quercus ilex</i> )	London Plane	( <i>Platanus x hispanica</i> )
False Acacia	( <i>Robinia pseudoacacia</i> )	Norway Maple	( <i>Acer platanoides</i> )
Floating Pennywort	( <i>Hydrocotyle ranunculoides</i> )	Norway Spruce	( <i>Picea abies</i> )
Garlics <sup>1</sup>	( <i>Allium species</i> )	Red Oak	( <i>Quercus rubra</i> )
Giant Hogweed	( <i>Heracleum mantegazzianum</i> )	Rhododendron	( <i>Rhododendron ponticum</i> )
Giant Rhubarbs	( <i>Gunnera species</i> )	Sitka Spruce	( <i>Picea sitchensis</i> )
Giant Salvinia	( <i>Salvinia molesta</i> )	Sweet Chestnut	( <i>Castanea sativa</i> )
Himalayan Balsam	( <i>Impatiens glandulifera</i> )	Sycamore	( <i>Acer pseudoplatanus</i> )
Hottentot Fig	( <i>Carpobrotus edulis</i> )	Turkey Oak	( <i>Quercus cerris</i> )
Japanese knotweed	( <i>Fallopia japonica</i> )	Walnut	( <i>Juglans regia</i> )
Japanese Rose	( <i>Rosa rugosa</i> )	Western Hemlock	( <i>Tsuga heterophylla</i> )
Montbretia	( <i>Crocsmia x crocosmiifolia</i> )	White Poplar	( <i>Populus alba</i> )
New Zealand Pigmyweed	( <i>Crassula helmsii</i> )		
Nuttall's Waterweed	( <i>Elodea nuttallii</i> )		
Parrot's Feather	( <i>Myriophyllum aquaticum</i> )		
Rhododendron	( <i>Rhododendron ponticum</i> )		
Russian-vine	( <i>Fallopia baldschuanica</i> )		
Spear thistle <sup>1</sup>	( <i>Cirsium vulgare</i> )		
Water Fern	( <i>Azolla filiculoides</i> )		
Water Lettuce	( <i>Pistia stratiotes</i> )		
Water Primrose	( <i>Ludwigia grandiflora</i> )		
Turkey Oak	( <i>Quercus cerris</i> )		

<sup>1</sup> Legally controlled weed species: These species are native and should only be eradicated where they pose a risk to agricultural land or livestock

## **Appendix 4: Monitoring Forms**

Path damage and root heave monitoring form.

Tree and scrub disease and pest monitoring form.

Nest box monitoring form (bats, birds, dormice, inverts).

[Link to Volnet.](#)