

Marconi Ponds

Local Nature Reserve Management Plan

2020 – 2025



**Produced by Elgan Adlard, Chelmsford City Council Parks Volunteer Leader.
An update on the Management Plan produced by Plumb Associates in 2015.**

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Introduction

1.0 General information

1.1 Area

Approximately 1.4ha

1.2 Ownership

Chelmsford City Council since 2004

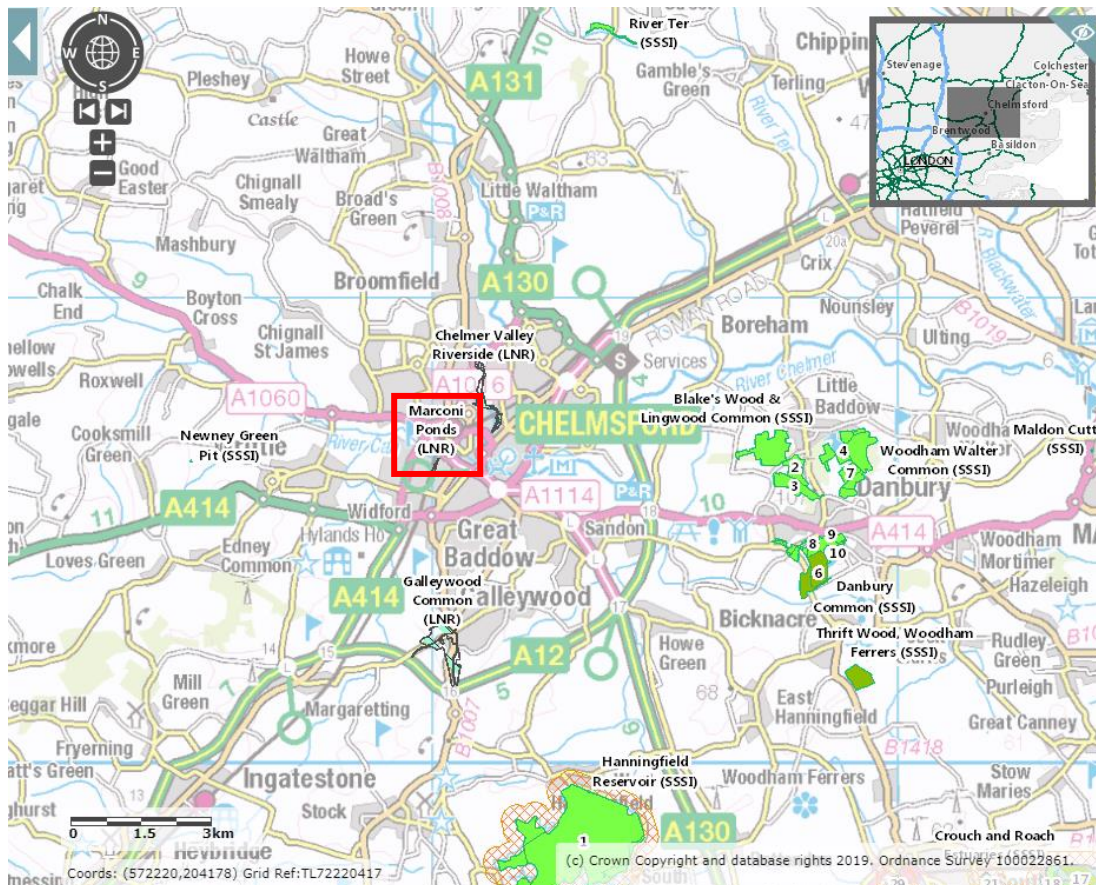


Figure 1: Marconi Ponds, Chelmsford. (Magic Map, 2019).

1.3 Site location

The site is situated within Chelmsford (see figure 1) at the northern end of Parkinson Drive. The railway embankment forms the eastern site boundary and E2V and a cycleway the western boundary. The northern end of the site extends towards the River Chelmer and Central Park, see figure 2.

1.4 Management

The site is the responsibility of the Council's Parks and Green Spaces team. Since 2006 the site has been managed by the Friends of Marconi Ponds with support from Council staff. The Parks and Green Spaces Volunteer Leader is the main link between the Council and Friends. The Chair of the Chelmsford Biodiversity Forum, Steve Plumb, provides specific technical guidance.



Figure 2: Marconi Ponds Nature Reserve (Google maps, 2019).

1.5 Designations

The site was designated a Local Wildlife Site in 2015. It is identified as Open Space in the Council's Site Allocations Development Plan Document. It was declared a Local Nature Reserve in 2018.

1.6 Site history (Jones, 2007)

Originally farmland the site was dug for brick clay after the railway was built in the 1840s. It was then used as a rubbish dump before becoming part of the Crompton Works. The main pond was used to supply water for cooling machines and was first shown on the 1938 OS map. Subsequently part of the site was also used as allotments. Prior to the main factory site being redeveloped the Marconi Ponds area had been unmanaged for several years resulting in scrub developing in the central area and species such as stinging nettle becoming dominant in the northern area. The site was popular with bottle diggers due to the large number of Victorian bottles present. Unfortunately, the diggers often left deep holes, which were dangerous.

The site was transferred by the developer to the Council in 2004 as part of the planning agreement for The Village development. The covenant restricts its use to nature conservation and informal recreation.

Once the Council received the site it allowed public access and installed a new fence around the ponds and constructed a path through the site. The first volunteer groups began managing the site from 2005, and the Friends of Marconi Ponds held their inaugural meeting in May 2007.

1.7 Management achievements since 2004

1. Creation of a new path through the site
2. Removing remaining bottles from adjacent to the ponds to prevent further bottle digging. This has resulted in the development of the marsh area (See plan 1)
3. Dredging the ponds to manage the reeds and improve the inflow to help maintain water levels.
4. Improved management of the northern grassland which has increased the species diversity.
5. Coppicing scrub to improve its age structure and therefore opportunities for nesting birds.
6. New hedges planted along the boundary with the railway embankment and cycleway fence in the pond area.
7. Construction of a pond-dipping platform and path to enable the ponds to be used safely for environmental education.
8. Installation of activity trail through the site.
9. Installation of a willow tunnel and a willow dome.
10. Provision of two new interpretive panels at the entrances.
11. Annual open day events are held to help promote the site.
12. Winning the Green Pennant Award and Cathy Carlile Gold Awards in 2010.
13. Awarding of Green Flag Community Award each year since 2010.
14. Awarded just over one thousand pounds from the John Lewis Community Matters Scheme 2018.
15. Increased number of visits to the site by schools and youth group.

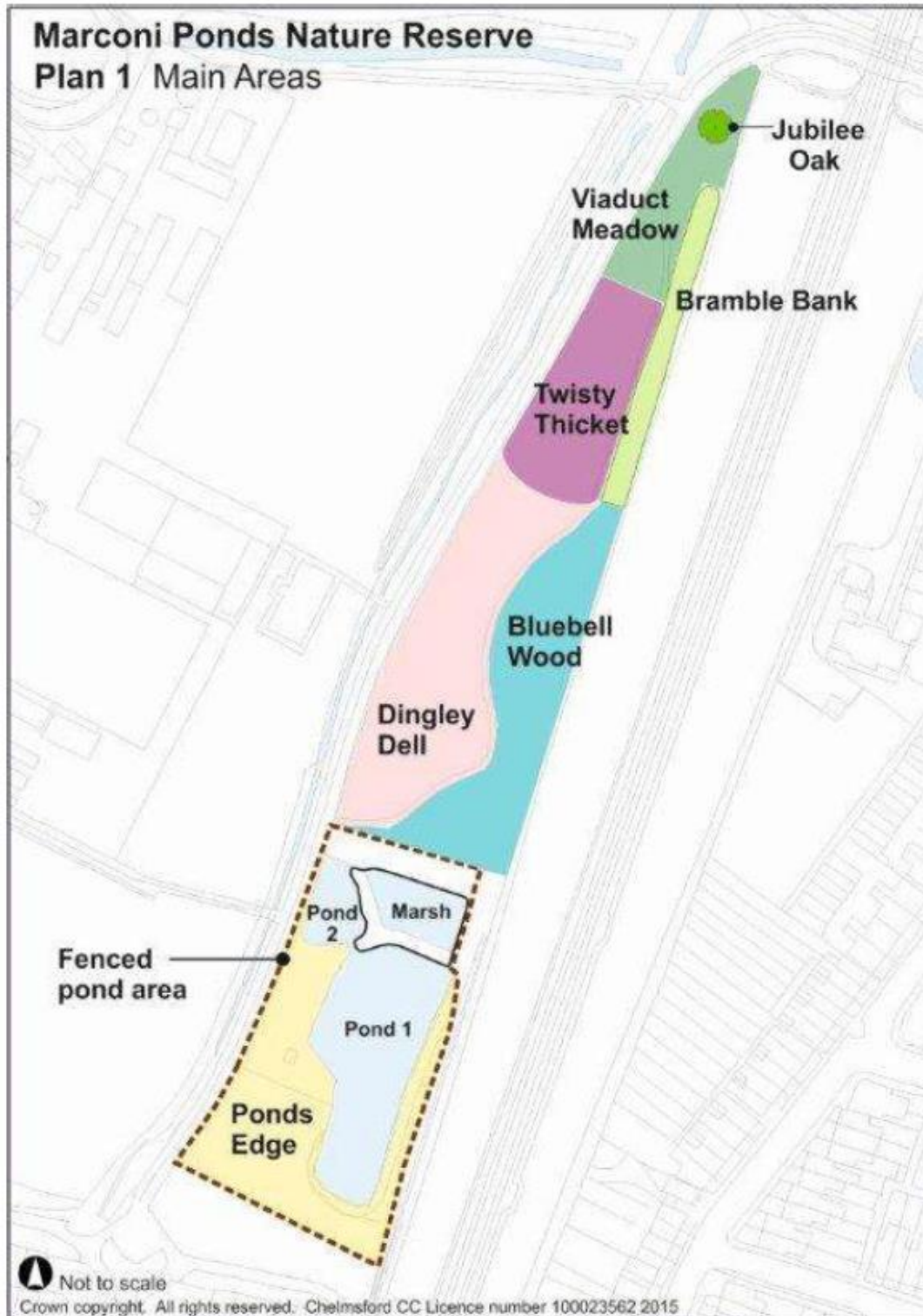
1.8 Management achievements since 2015

1. Achieved local nature reserve status in 2018.
2. Desilting and removal of reeds from the large pond (area 24) by a contractor in 2018.
3. Several large willow trees coppiced along the path through the reserve.
4. Hedgerow laid along boundary with cycleway (area 27).
5. Construction of dead hedging along ungated paths.
6. Continued coppicing and thinning of woodland areas.
7. Planted over 200 native tree species.
8. Planted over 600 wildflower plugs in the woodland and grassland areas.
9. Installation of Oak carved posts.
10. Installation of 3 new recycled plastic benches.
11. Construction of a bug hotel and creation of 3 hibernacula.
12. Retainment of the Community Green Flag Award.
13. Awarded just over one thousand pounds from the John Lewis Community Matters Scheme 2018.

Key to the success of the site management has been the development of the Friends of Marconi Ponds Nature Reserve. This active group leads on the management and development of the site including organising the annual open days and other activities. The group has been very successful in attracting grants, sponsorship and other funding.

2.0 Site description

The site can be divided into three main habitat areas, at the northern end of the site is open grassland, the central area is dominated by scrub and developing woodland and the ponds and wetland are at the southern end. These areas have been further divided into different character areas (see Plan 1).



2.1 Viaduct Meadow

The northern part of the site was still largely open with little scrub present when the Council acquired it. It was however dominated by tall grasses and coarse herb species such as stinging nettles and Canadian Goldenrod. Bramble was spreading from the railway embankment. Since 2005 this area has been cut and raked in the late summer or autumn which has helped to reduce the dominance of the more competitive vegetation.

The top layer of soil was scraped within the central part of the block north during the winter 2009 to try to reduce the vigour of the nettles and other dominant species. Wildflower plugs were planted to increase the species diversity. There is still an issue with competitive species such as horseradish spreading into the central area. Stinging nettle and bramble still dominate the bank closest to the railway.

The area south of the path contains a better mix of species such as black knapweed, meadow crane's-bill, meadow vetchling red campion and yellow toadflax. In the past Canadian Goldenrod was dominant; however regular removal has enabled a more diverse range of species to establish. It is still necessary to remove some Canadian Goldenrod each year to prevent it re-establishing. Ongoing monitoring and assessment of these areas will allow for adjustment of management if necessary.

2.2 Central wooded area

The central area contains a mix of scrub and developing woodland. Hawthorn is the main shrub species with willows dominating the woodland. There are more open areas that are dominated by dense bramble or nettles into which buddleia is establishing. Unsurfaced paths have been created within the wooded areas. There are four sub-areas.

2.2.1 Twisty Thicket

This comprises tall, dense mainly hawthorn scrub with limited ground flora. Work has begun to coppice small groups of these trees to provide denser cover for birds and diversify the age structure.

2.2.2 Bramble Bank

A species rich hedge was planted in 2007 along the eastern boundary adjacent to the railway embankment. The rest of the bank is largely dominated by brambles and hogweed. Where the vegetation has been cut more regularly beside the path other species such as red campion have established.

2.2.3 Bluebell Woods

This area contains the largest trees on the site, which link to the more wooded part of the railway embankment. The trees are mainly large sallow with some birch. There are patches of Male Fern growing in the shadier areas. It has the most woody character at present.

2.2.4 Dingley Dell

This area contains several large trees, mainly sallow and birch; however there are several open areas containing mainly stinging nettle, bramble and buddleia. The largest open area is at the northern end bordering Twisty Thicket.

2.3 The Ponds

The southern third of the site contains two ponds that are surrounded by a mix of grassland, scrub and trees.

The main pond used to contain large numbers of fish; however, these died when the pond dried out during the summer of 2006. Subsequently the amount of submerged and emergent vegetation has increased and there is evidence of more dragonflies and other invertebrates in the area.

The pond was dredged in 2010 and again in 2018 to create more open water as reeds had established across most of the pond. A block of reeds was retained along the eastern edge. The pond has a maximum depth of approximately 2.5m in the centre.

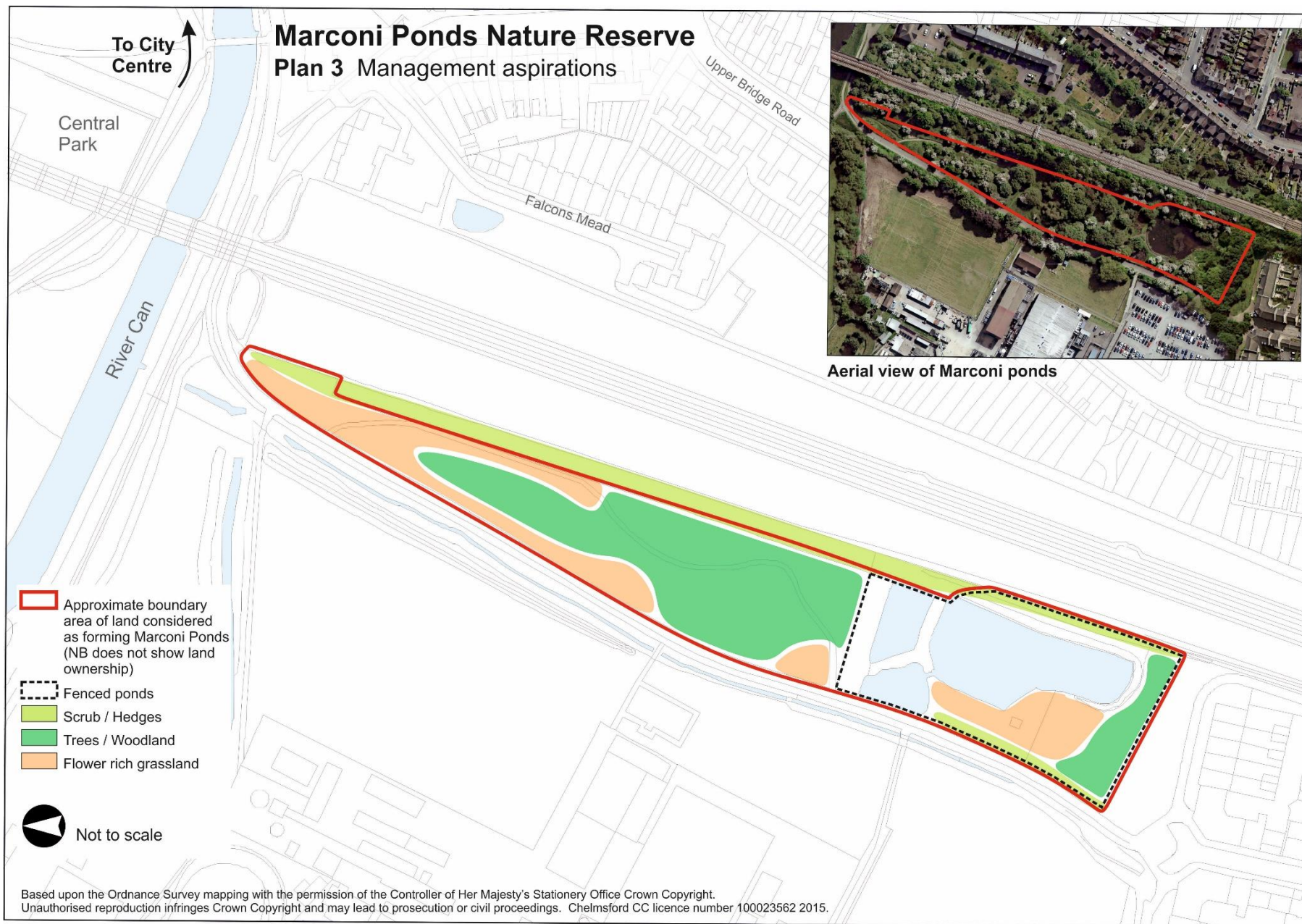
The main pond inflow is via a culvert pipe that runs from the ditch to the west of the cycleway to the pond. It has been unblocked and the sluice in the ditch modified to improve the flow into the ponds; however, during periods of high rainfall it is necessary to block the pipe to prevent the whole site flooding.

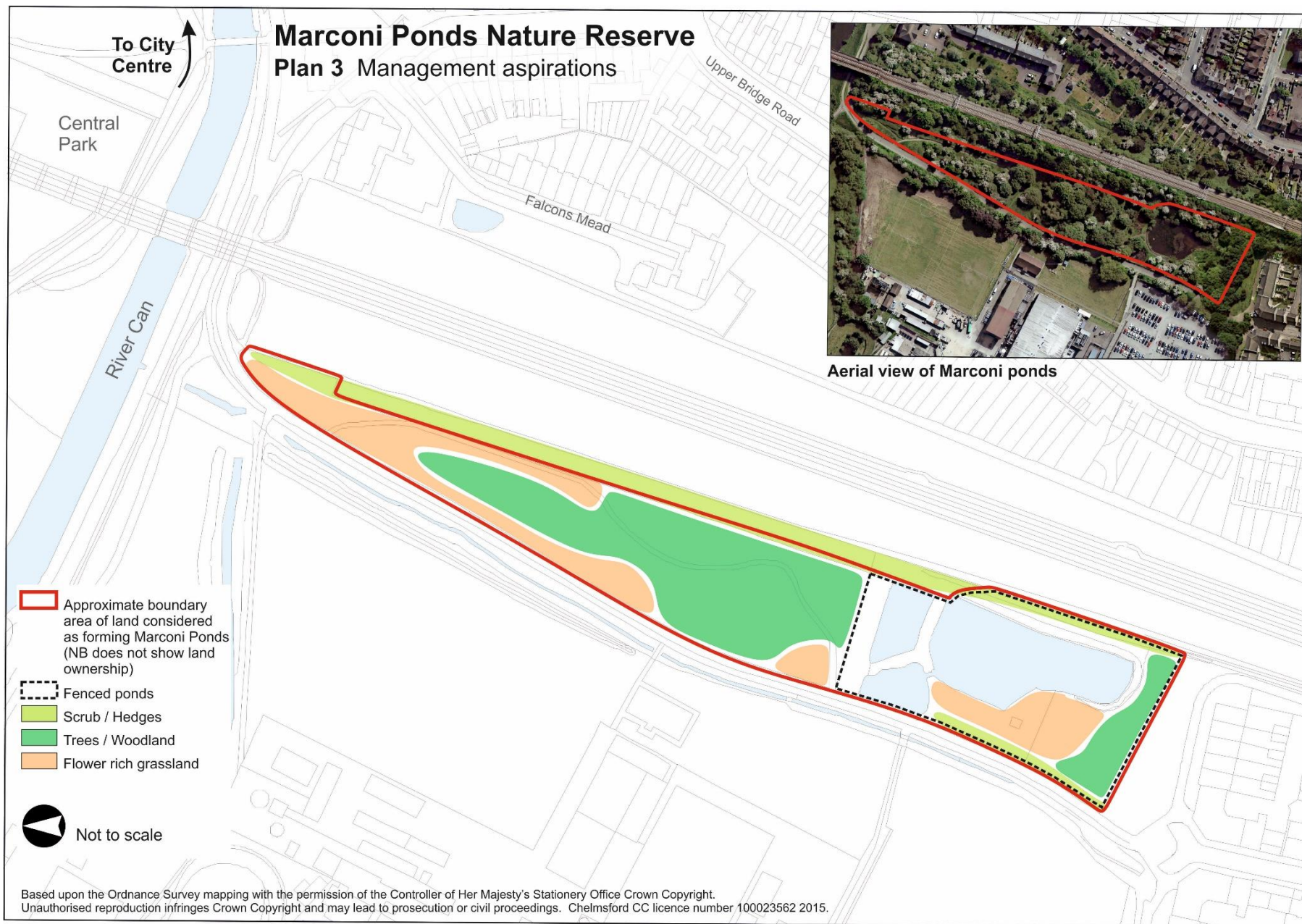
The small pond was initially dug out in 2004 as it was completely covered by Reedmace however, the reeds re-established quickly as water levels were very low. The pond was dug out again in summer 2010.

The Council erected a fence around the ponds in 2004; however, bottle digging continued and therefore in March 2005 a bottle digging club could complete a dig of the area to the north of the ponds. This left this area overall about 0.5m lower than the surrounding area. Since that time the area has developed wetland vegetation dominated by rushes which complements the adjoining pond habitat. Increasing young trees are establishing in this area.

A hedge was planted along the boundary with the cycleway in spring 2010. There are areas of tall hawthorn scrub close to the small brick former pump house. Along the southern edge of the site there is a belt of mainly willow trees which screen the Village development.

A path and pond dipping platform constructed by the Friends Group enable the main pond to be used by community and school groups for environmental education.





3.0 Site Evaluation

The site is small but contains a diverse mix of habitats including grassland, scrub, woodland, ponds and wetlands. While such diversity is good for environmental education it does mean that some patches are small and isolated. A key aim of the management plan is to continue to consolidate the key habitat areas and ensure better connectivity within the site. Plan 2 illustrates the current distribution of habitats while Plan 3 shows what the management actions aim to achieve. Maroni Ponds forms part of a larger network of green space including Central Park and Admirals Park. The railway embankment acts as a habitat corridor running through the city centre linking to the sites such as Writtle Road Cemetery.

3.1 Biodiversity

The site has been dug for clay then infilled with waste, covered with topsoil and used as allotments. The soils therefore are nutrient-rich and support vigorous species such as bramble, stinging nettle, ground-elder and hogweed. The past disturbance and urban location means that there is a limited seed bank which restricts what species can recolonise naturally. A key management objective therefore is to reduce the dominance of competitive species and to introduce a wider diversity of species. The site contains several introduced species that are highly competitive although some have biodiversity value. The most significant species are Canadian Goldenrod, which has spread south from Viaduct Meadow and which out-competes the native species, and buddleia, which is a good nectar source for some butterfly species but has a limited value for most other species and is invasive.

The site contains a good number of bird species. Common lizard, slow-worm and common toad have continued to be recorded. Badgers are also known to use the site.

3.1.1 Grassland and open habitats

The nutrient-rich soils and lack of a seedbank mean that much of the grassland is species poor. Stinging nettle, hogweed and other competitive species can rapidly spread into the grassland and open areas unless actively managed. Patches of species rich grassland have developed where vegetation has been cut and cleared regularly and the seed bank supplemented with wildflower seeding or plug planting. The best areas are Viaduct Meadow and to the south of the main pond (area 28). However competitive species continue to dominate much of the remaining open areas and they rapidly recolonise if management is reduced. A management priority will be to reduce the area of species poor grassland and actively create larger areas of species rich grassland.

3.1.1a Viaduct Meadow (Areas 1-4)

The regular cutting and clearing of the main open areas has allowed a more varied flora to establish, particularly to the south of the path (area 4). Regular removal of the Canadian Goldenrod before it has set seed has controlled its spread and allowed other species to establish particularly in area 4. The planting of wildflower plugs has increased the species diversity, which increases the visual amenity of the area as well as providing more nectar sources for invertebrates.

Topsoil in Area 1 was removed in 2009 and had some benefit although a patch of

horseradish has colonised recently, which is being actively removed. The area up to the railway line (area 2) is still dominated by stinging nettle and it is recommended that it is scraped as well. It will be necessary to cut these areas at least twice a year to benefit less competitive species. The cut material needs to be raked off to reduce the build-up of leaf litter.

The sowing of wildflower seed in the bare patches will help increase diversity.

The grassland and open areas are small and are surrounded by competitive species.

An objective over the period of this plan is to increase the size of the grassland patches and to improve the links between them.

3.1.2 Central woodland area (Areas 5-19)

The habitat management in this area was not a priority initially with most of the focus being on the ponds and grassland. Coppicing of the hawthorn began in 2009 and has been successful with good levels of regrowth. Bird and bat boxes have been put up in this area. Since 2015 coppicing has continued in conjunction with successful planting of tree whips to add diversity in structure and species composition.

Close to the cycleway are open areas dominated by nettles and brambles. These detract from visual amenity of the site. These should be cleared and either planted with additional tree and shrub species to increase the area of woodland or managed as grassland. This will be a key management focus during the plan period.

3.1.2a Twisty Thicket (5-7)

The uncoppiced areas of scrub are generally mature, with little new growth being present. There is a limited understorey beneath the dense canopy; dense ivy on the ground is suppressing other species. The more open areas are covered by dense leaf litter from plants such as stinging nettle suppressing less competitive species.

Managing the scrub by coppicing will open up views across the site and improve the age structure of the stands. Coppicing should be carried out in small blocks on a rotation. Larger cut material should be retained to provide additional habitat.

The coppiced areas should be monitored to assess the benefits for ground flora and birds. Additionally, gradual removal of ivy will be carried out to increase the light getting to ground flora.

3.1.2b Bramble Bank (9)

This area is dominated by bramble and it is important to introduce rotational cutting on a three-year cycle to maintain its value as a habitat. Removal of roots of bramble and small trees will be important to allow an open species rich area to develop. It will allow it to provide cover without developing dense, dead areas.

3.1.2c Bluebell wood and Dingley Dell (10-19)

These areas link with a more wooded section of the railway embankment thereby forming a larger wooded block. It will be necessary to coppice the larger willow before they collapse. Since 2015 some coppicing of these willow has been carried out for safety reasons. There are more open areas into which species such as oak, hazel and alder can be planted to improve the habitat value.

Buddleia establishing in this area should be removed as it is highly invasive and of limited ecological value.

3.1.3 The ponds (20-33)

The ponds were dug out in 2010 and 2018 and therefore they will not require significant management over the period of this plan. It will be necessary to maintain the extent of the reeds in both ponds to retain areas of open water. Kingfishers have been occasionally recorded using the southern section of the pond since 2003. Grey Heron and a range of waterfowl have also been recorded.

It is necessary for the marsh grassland area (area 21) to be cut on a two-year cycle to ensure that trees do not establish but to allow rushes etc to develop. To the west of pond 1 are areas of species-rich grassland (area 28) and tall grassland (area 29). Shrub planting has been undertaken in area 31. These provide an important mix of habitat that complements the adjacent ponds, providing terrestrial habitat for amphibians and other species. It is important however to try to extend the flower-rich area to increase its value for foraging invertebrates.

The tree belt on southern boundary (area 33) is an important visual screen to the adjacent residential area. It requires some thinning to benefit the remaining trees. The hedge beside the cycleway will require regular management to allow views across the ponds.

3.1.4 Surveys and monitoring

Currently recording is carried out on site, mainly during practical sessions. More focused monitoring of the key habitat areas is required to determine the effectiveness of the management and to identify any issues that might arise.

3.2 Community and Education

As an urban community nature reserve Marconi Ponds provides great opportunities for engaging the wider community in their local wildlife. The management of the site is led by the Friends of Marconi Ponds, which is made up of local residents. They continue to successfully recruit new members and to engage the local youth groups, schools and other interested bodies in the site.

Access improvement works and construction of a pond-dipping platform has made the site suitable for environmental education and this is being actively encouraged now. Up to 170 young people have visited the site each year from local schools and youth groups to use it for environmental education. The annual open day also bring in over 200 visitors to do craft activities and pond dipping on site.

3.3 Budget

In 2004 the Council received £80,000 as commuted sum under a Section 106 agreement for the adjoining development. This funding ended in 2010 since when the Friends of Marconi Ponds have obtained several grants and donations.

In 2015 the Friends received a large legacy that will help fund works identified in this plan. Future funding sources are community funding schemes, such as the Tesco 'bags of help' scheme.

4.0 Objectives

4.1 Management objectives

The overall aim for managing this site is to maintain and enhance the mosaic of open grassland, woodland, scrub and standing water on the site. The main habitat blocks comprise grassland in the northern, trees and scrubs in the centre and ponds bounded by grassland and trees in the south.

1. To manage the variety of habitats within the site to maximise their biodiversity value.
2. To maintain active community involvement in the site, led by the Friends of Marconi Ponds.
3. To continue to use the site for environmental education.
4. To maintain public access within the site.

4.2 Specific Objectives 2015 to 2020 achievement

Specific objectives	Description	Achievement
Species rich grassland target	Double the size of the species rich grassland from 0.12 to 0.24 through bramble removal, cutting and wildflower plug planting.	Work is ongoing to achieve this objective and improvements have been made with less dominance by nettle and bramble evident.
Woodland	Increase the area of woodland by 10%.	A 5% increase in woodland has been achieved through planting of over 200 native tree whips. Several large Willow have been removed to open up the canopy.
Pond dipping platform	Replacement with a new design.	Not yet achieved due to installation of a new pond edge gabions needing to be carried out first.

4.3 Specific Objectives 2020 to 2025

Specific Objective	Description	Target achievement date
Pond dipping platform.	Replace the existing pond platform with a larger new design (area 24).	By the end of 2025. (After Gabion installation.
Gabion pond edging.	Contractor to install Gabions filled with stone to act as a retaining wall for the pond edge (area 24).	By the end of 2021.
Continue towards species rich grassland target.	Double the size of the species rich grassland from 0.12 to 0.24 through bramble removal, cutting and wildflower plug planting.	By the end of 2025.
Continue towards woodland target.	Increase the area of woodland by 5%.	By the end of 2025.

5.0 Management operations (October 2020 to October 2025)

October to December 2020

Activity	Area	Priority	Completion date	Additional resources
Annual cut and clearance of grassland areas dig out horse radish and bramble roots where possible.	Viaduct meadow 1, 2 & 4 and the Ponds 29 & 28	High	Annually	Green waste to be removed from site.
Plant up hedgerow along Parkinson drive fence.	Ponds 27	Medium	By the end of 2020	Trees required
Annual cut and clearance of half of marsh area and remove any golden rod/brambles where necessary (alternate half each year).	Ponds 21	High	Annually	Green waste to be removed from site.
Cut and clear vegetation along cycle way and dig out bramble and nettle roots where possible.	Dingley Dell 10, 11, 12, 13 Twisty Thicket 6 & 8	High	Every other month	Green waste to be removed from site.
Prune apple tree to reduce growth onto cycle way.	Viaduct meadow 3	Medium	By the end of 2020	Material to be used for dead hedging.
Maintain willow tunnel and dome through cutting and weaving into structure.	The ponds 22 and 32	Medium	Annually	Green waste to be used for dead hedging.
Weed and bark chip around whips planted previously.	Twisty Thicket 5 & 7, Bluebell woods 17 and Dingley Dell 15 & 16	High	Every other month	Bark chips.
Remove rushes from the area near the bank and island.	Th Ponds 25, 30 & 24	High	Annually	

January to March 2021

Activity	Area	Priority	Completion date	Additional resources
Coppice trees coppice 3 trees, Hazel near gates, 2 Hawthorn stands.	Twisty Thicket 5, Dingley Dell 13, 15	High	By the end of March	
Plant whips: Hawthorn, Hazel, field maple and crab apple.	Twisty Thicket 5	Medium	By the end of March	Trees required
Cut back hedge to a minimum height of 1.2m.	The ponds 27	High	Bi-annually	Use material for dead hedging
Remove tree guards from hedgerow trees on bramble bank.	Bramble bank 9	High	By the end of March	Disposal of guards
Coppice/lay hedge along railway embankment.	Bramble bank 9	Medium	Section annually	
Clear vegetation along bramble bank, removing bramble roots where possible.	Bramble bank 9	High	Bi-annually	Green waste to be removed from site.
Coppice overhanging trees next to pond 2.	The ponds 20	High	By end of February	Use material for dead hedging

Contractors to thin trees at the South side of the ponds area near Parkinson Drive	The ponds 31	High	By end of February	Contractors will be required to undertake works safely.
Infill gaps in the hedge with: hazel, hawthorn and field maple.	The ponds 27	Medium	By the end of March	Trees required
Cut and clear along fence line adjacent to cycle track near Parkinson Drive.	The Ponds 27	High	As required	Green waste to be removed from site

April to June 2021

Activity	Area	Priority	Completion date	Additional resources
Path Management – cut edges of main paths.	All	High	As required	
Path Maintenance – Surface main path with road plainings where needed	All	Medium	Annually	Road Plainings
Cut and clear areas containing hogweed and nettle to height of 150mm.	Viaduct meadow 2, Twisty Thicket 8, Bramble Bank, Dingley Dell 10 & 11	High	During the growing season	Green waste to be removed from site.
Monitor species rich area to control invasive/competitive species.	Viaduct meadow 1, 2, 3 & 4	High	During growing season	Green waste to be removed from site.
Weed areas planted with trees and put bark chip around the base.	Twisty Thicket 7, Bluebell Wood 15 & 16	Medium	As required	Bark chip.
Collect materials and build a hibernaculum.	Bluebell Wood	Low	By the end of May	Logs
Prepare for open day	All	High	By Sat 15 th May	

July to September 2021

Activity	Area	Priority	Completion date	Additional resources
Path Management – cut edges of main paths.	All	High	As required	
Cut and clear areas containing hogweed and nettle to height of 150mm.	Viaduct meadow 2, Twisty Thicket 8, Bramble Bank, Dingley Dell 10 & 11	High	During the growing season	Green waste to be removed from site.
Undertake safety inspection of trees on site.	All	High	Annually	Council staff to carry out.
Monitor species rich area to control invasive/competitive species.	Viaduct meadow 1, 2, 3 & 4	High	During the growing season	Green waste to be removed from site.

Weed areas planted with trees and put bark chip around the base.	Twisty Thicket 7, Dingley Dell 15 & 16	Medium	As required	Bark chip.
Cut and clear along fence line adjacent to cycle track near Parkinson Drive.	The Ponds 27	High	As required	Green waste to be removed from site

October to December 2021

Activity	Area	Priority	Completion date	Additional resources
Annual cut and clearance of grassland areas dig out horse radish and bramble roots where possible.	Viaduct meadow 1, 2 & 4 and the Ponds 29 & 28	High	Annually	Green waste to be removed from site.
Annual cut and clearance of half of marsh area and remove any golden rod/brambles where necessary (alternate half each year).	Ponds 21	High	Annually	Green waste to be removed from site.
Cut and clear vegetation along cycle way and dig out bramble and nettle roots where possible.	Dingley Dell 10, 11, 12, 13 Twisty Thicket 6 & 8	High	Every other month	Green waste to be removed from site.
Plant mix of wildflower plug plants in rank grassland.	Viaduct meadow, Bramble bank, the ponds 29	Medium	By the end of 2021	Plug plants to be purchased.
Maintain willow tunnel and dome through cutting and weaving into structure.	The ponds 22 and 32	Medium	Annually	Green waste to be used for dead hedging.
Weed and bark chip around whips planted previously.	Twisty Thicket 5 & 7, Bluebell woods 17 and Dingley Dell 15 & 16	Medium	As required	Bark chips.
Remove rushes from the area near the bank and island.	Th Ponds 25, 30 & 24	High	Annually	

January to March 2022

Activity	Area	Priority	Completion date	Additional resources
Coppice trees 2 Hawthorn stands, coppice 3 Hawthorn.	Dingley Dell 15, Twisty Thicket 7	High	By the end of March	
Plant another 10 whips Hawthorn, Hazel and field maple.	Twisty Thicket 7, Bluebell woods 17	Medium	By the end of March	Trees required.
Cut back hedge to a minimum height of 1.2m.	The ponds 27	High	Bi-annually	Use material for dead hedging.
Clear vegetation along bramble bank, remove bramble roots.	Bramble bank 9	High	Bi-annually	Green waste to be removed from site.
Coppice/lay hedge along railway embankment.	Bramble bank 9	Medium	Section annually	
Coppice overhanging trees next to pond 2.	The ponds 20	High	Annually	
Fill hedge gaps with a mix of hazel, hawthorn and field maple.	All hedgerows	Medium	As required	Trees required.
Cut and clear along fence line adjacent to cycle track near Parkinson Drive.	The Ponds 27	High	As required	Green waste to be removed from site
Coppice 20% of willow on the far side of the pond (Council/contractor).	The Ponds 24	Medium	By end of March	

April to June 2022

Activity	Area	Priority	Completion date	Additional resources
Path Management – cut edges of main paths.	All	High	As required	
Path Maintenance – Surface main path with road plainings where needed	All	Medium	Annually	Road Plainings
Cut and clear areas containing hogweed and nettle to height of 150mm.	Viaduct meadow 2, Twisty Thicket 8, Bramble Bank, Dingley Dell 10 & 11	High	During the growing season	Green waste to be removed from site.
Monitor species rich area to control invasive/competitive species.	Viaduct meadow 1, 2, 3 & 4	High	During growing season	Green waste to be removed from site.
Weed areas planted with trees and put bark chip around the base.	Twisty Thicket 7, Bluebell Wood 15 & 16	Medium	As required	Bark chip.
Prepare for open day	All	High	By Sat 21 st May	

July to September 2022

Activity	Area	Priority	Completion date	Additional resources
Path Management – cut edges of main paths.	All	High	As required	
Cut and clear areas containing hogweed and nettle to height of 150mm.	Viaduct meadow 2, Twisty Thicket 8, Bramble Bank, Dingley Dell 10 & 11	High	During the growing season	Green waste to be removed from site.
Undertake safety inspection of trees on site.	All	High	Annually	Council staff to carry out.
Monitor species rich area to control invasive/competitive species.	Viaduct meadow 1, 2, 3 & 4	High	During the growing season	Green waste to be removed from site.
Weed areas planted with trees and put bark chip around the base.	Twisty Thicket 7, Dingley Dell 15 & 16	Medium	As required	Bark chip.
Cut and clear along fence line adjacent to cycle track near Parkinson Drive.	The Ponds 27	High	As required	Green waste to be removed from site

October to December 2022

Activity	Area	Priority	Completion date	Additional resources
Annual cut and clearance of grassland areas dig out horse radish and bramble roots where possible.	Viaduct meadow 1, 2 & 4 and the Ponds 29 & 28	High	Annually	Green waste to be removed from site.
Annual cut and clearance of half of marsh area and remove any golden rod/brambles where necessary (alternate half each year).	Ponds 21	High	Annually	Green waste to be removed from site.
Cut and clear vegetation along cycle way and dig out bramble and nettle roots where possible.	Dingley Dell 10, 11, 12, 13 Twisty Thicket 6 & 8	High	Every other month	Green waste to be removed from site.
Remove rushes from the area near the bank and island.	Th Ponds 25, 30 & 24	High	Annually	
Maintain willow tunnel and dome through cutting and weaving into structure.	The ponds 22 and 32	Medium	Annually	Green waste to be used for dead hedging.
Weed and bark chip around whips planted previously.	Twisty Thicket 5 & 7, Bluebell woods 17 and Dingley Dell 15 & 16	Medium	As required	Bark chips.

January to March 2023

Activity	Area	Priority	Completion date	Additional resources
Coppice trees 2 trees.	Twisty Thicket 5	High	By the end of March	
Plant another 10 whips Hawthorn, Hazel and field maple.	Dingley Dell 15	Medium	By the end of March	Trees required.
Cut back hedge to a minimum height of 1.2m.	The ponds 27	High	Bi-annually	Use material for dead hedging.
Clear vegetation along bramble bank, removing bramble roots where possible.	Bramble bank 9	High	Bi-annually	Green waste to be removed from site.
Coppice/lay hedge along railway embankment.	Bramble bank 9	Medium	Section annually	
Infill gaps in the hedge with a mix of hazel, hawthorn and field maple.	All hedgerows	Medium	As required	Trees required.
Cut and clear along fence line adjacent to cycle track near Parkinson Drive.	The Ponds 27	High	As required	Green waste to be removed from site

April to June 2023

Activity	Area	Priority	Completion date	Additional resources
Path Management – cut edges of main paths.	All	High	As required	
Path Maintenance – Surface main path with road plainings where needed	All	Medium	Annually	Road Plainings
Cut and clear areas containing hogweed and nettle to height of 150mm.	Viaduct meadow 2, Twisty Thicket 8, Bramble Bank, Dingley Dell 10 & 11	High	During the growing season	Green waste to be removed from site.
Monitor species rich area to control invasive/competitive species.	Viaduct meadow 1, 2, 3 & 4	High	During growing season	Green waste to be removed from site.
Weed areas planted with trees and put bark chip around the base.	Twisty Thicket 7, Dingley Dell 15 & 16	Medium	As required	Bark chip.
Prepare for open day	All	High	By Sat 20 th May	

July to September 2023

Activity	Area	Priority	Completion date	Additional resources
Path Management – cut edges of main paths.	All	High	As required	
Cut and clear areas containing hogweed and nettle to height of 150mm.	Viaduct meadow 2, Twisty Thicket 8, Bramble Bank, Dingley Dell 10 & 11	High	During the growing season	Green waste to be removed from site.
Undertake safety inspection of trees on site.	All	High	Annually	Council staff to carry out.
Monitor species rich area to control invasive/competitive species.	Viaduct meadow 1, 2, 3 & 4	High	During the growing season	Green waste to be removed from site.
Weed areas planted with trees and put bark chip around the base.	Twisty Thicket 7, Dingley Dell 15 & 16	Medium	As required	Bark chip.
Cut and clear along fence line adjacent to cycle track near Parkinson Drive.	The Ponds 27	High	As required	Green waste to be removed from site

October to December 2023

Activity	Area	Priority	Completion date	Additional resources
Annual cut and clearance of grassland areas dig out horse radish and bramble roots where possible.	Viaduct meadow 1, 2 & 4 and the Ponds 29 & 28	High	Annually	Green waste to be removed from site.
Annual cut and clearance of half of marsh area and remove any golden rod/brambles where necessary (alternate half each year).	Ponds 21	High	Annually	Green waste to be removed from site.
Cut and clear vegetation along cycle way and dig out bramble and nettle roots where possible.	Dingley Dell 10, 11, 12, 13 Twisty Thicket 6 & 8	High	Every other month	Green waste to be removed from site.
Maintain willow tunnel and dome through cutting and weaving into structure.	The ponds 22 and 32	Medium	Annually	Green waste to be used for dead hedging.
Weed and bark chip around whips planted previously.	Twisty Thicket 5 & 7, Bluebell woods 17 and Dingley Dell 15 & 16	Medium	As required	Bark chips.

January to March 2024

Activity	Area	Priority	Completion date	Additional resources
Coppice trees 3 trees.	Twisty Thicket 7	High	By the end of March	
Plant another 10 whips Hawthorn, Hazel and field maple.	Ponds 33 & 31 and Twisty Thicket 7	Medium	By the end of March	Trees required.
Cut back hedge to a minimum height of 1.2m.	The ponds 27	High	Bi-annually	Use material for dead hedging.
Clear vegetation along bramble bank, removing bramble roots where possible.	Bramble bank 9	High	Bi-annually	Green waste to be removed from site.
Coppice/lay hedge along railway embankment.	Bramble bank 9	Medium	Section annually	
Infill gaps in the hedge with a mix of hazel, hawthorn and field maple.	All hedgerows	Medium	As required	Trees required.
Cut and clear along fence line adjacent to cycle track near Parkinson Drive.	The Ponds 27	High	As required	Green waste to be removed from site

April to June 2024

Activity	Area	Priority	Completion date	Additional resources
Path Management – cut edges of main paths.	All	High	As required	
Path Maintenance – Surface main path with road plainings where needed	All	Medium	Annually	Road Plainings
Cut and clear areas containing hogweed and nettle to height of 150mm.	Viaduct meadow 2, Twisty Thicket 8, Bramble Bank, Dingley Dell 10 & 11	High	During the growing season	Green waste to be removed from site.
Monitor species rich area to control invasive/competitive species.	Viaduct meadow 1, 2, 3 & 4	High	During growing season	Green waste to be removed from site.
Weed areas planted with trees and put bark chip around the base.	Twisty Thicket 7, Dingley Dell 15 & 16	Medium	As required	Bark chip.
Prepare for open day.	All	High	By Sat 18 th May	

July to September 2024

Activity	Area	Priority	Completion date	Additional resources
Path Management – cut edges of main paths.	All	High	As required	
Cut and clear areas containing hogweed and nettle to height of 150mm.	Viaduct meadow 2, Twisty Thicket 8, Bramble Bank, Dingley Dell 10 & 11	High	During the growing season	Green waste to be removed from site.
Undertake safety inspection of trees on site.	All	High	Annually	Council staff to carry out.
Monitor species rich area to control invasive/competitive species.	Viaduct meadow 1, 2, 3 & 4	High	During the growing season	Green waste to be removed from site.
Weed areas planted with trees and put bark chip around the base.	Twisty Thicket 7, Dingley Dell 15 & 16	Medium	As required	Bark chip.
Cut and clear along fence line adjacent to cycle track near Parkinson Drive.	The Ponds 27	High	As required	Green waste to be removed from site

October to December 2024

Activity	Area	Priority	Completion date	Additional resources
Annual cut and clearance of grassland areas dig out horse radish and bramble roots where possible.	Viaduct meadow 1, 2 & 4 and the Ponds 29 & 28	High	Annually	Green waste to be removed from site.
Annual cut and clearance of half of marsh area and remove any golden rod/brambles where necessary (alternate half each year).	Ponds 21	High	Annually	Green waste to be removed from site.
Cut and clear vegetation along cycle way and dig out bramble and nettle roots where possible.	Dingley Dell 10, 11, 12, 13 Twisty Thicket 6 & 8	High	Every other month	Green waste to be removed from site.
Maintain willow tunnel and dome through cutting and weaving into structure.	The ponds 22 and 32	Medium	Annually	Green waste to be used for dead hedging.
Weed and bark chip around whips planted previously.	Twisty Thicket 5 & 7, Bluebell woods 17 and Dingley Dell 15 & 16	Medium	As required	Bark chips.

January to March 2025

Activity	Area	Priority	Completion date	Additional resources
Coppice trees 3 tree.	Twisty Thicket 7	High	By the end of March	
Plant another 10 whips Hawthorn, Hazel and field maple.	Ponds 33 & 31 and Twisty Thicket 7	Medium	By the end of March	Trees required.
Cut back hedge to a minimum height of 1.2m.	The ponds 27	High	Bi-annually	Use material for dead hedging.
Clear vegetation along bramble bank, removing bramble roots where possible.	Bramble bank 9	High	Bi-annually	Green waste to be removed from site.
Coppice/lay hedge along railway embankment.	Bramble bank 9	Medium	Section annually	
Infill gaps in the hedge with a mix of hazel, hawthorn and field maple.	All hedgerows	Medium	As required	Trees required.
Cut and clear along fence line adjacent to cycle track near Parkinson Drive.	The Ponds 27	High	As required	Green waste to be removed from site

April to June 2025

Activity	Area	Priority	Completion date	Additional resources
Path Management – cut edges of main paths.	All	High	As required	
Path Maintenance – Surface main path with road plainings where needed	All	Medium	Annually	Road Plainings
Cut and clear areas containing hogweed and nettle to height of 150mm.	Viaduct meadow 2, Twisty Thicket 8, Bramble Bank, Dingley Dell 10 & 11	High	During the growing season	Green waste to be removed from site.
Monitor species rich area to control invasive/competitive species.	Viaduct meadow 1, 2, 3 & 4	High	During growing season	Green waste to be removed from site.
Weed areas planted with trees and put bark chip around the base.	Twisty Thicket 7, Dingley Dell 15 & 16	Medium	As required	Bark chip.
Prepare for open day.	All	High	By Sat 17 th May	

July to September 2025

Activity	Area	Priority	Completion date	Additional resources
Path Management – cut edges of main paths.	All	High	As required	
Cut and clear areas containing hogweed and nettle to height of 150mm.	Viaduct meadow 2, Twisty Thicket 8, Bramble Bank, Dingley Dell 10 & 11	High	During the growing season	Green waste to be removed from site.
Undertake safety inspection of trees on site.	All	High	Annually	Council staff to carry out.
Monitor species rich area to control invasive/competitive species.	Viaduct meadow 1, 2, 3 & 4	High	During the growing season	Green waste to be removed from site.
Weed areas planted with trees and put bark chip around the base.	Twisty Thicket 7, Dingley Dell 15 & 16	Medium	As required	Bark chip.
Cut and clear along fence line adjacent to cycle track near Parkinson Drive.	The Ponds 27	High	As required	Green waste to be removed from site

6.0 Maps



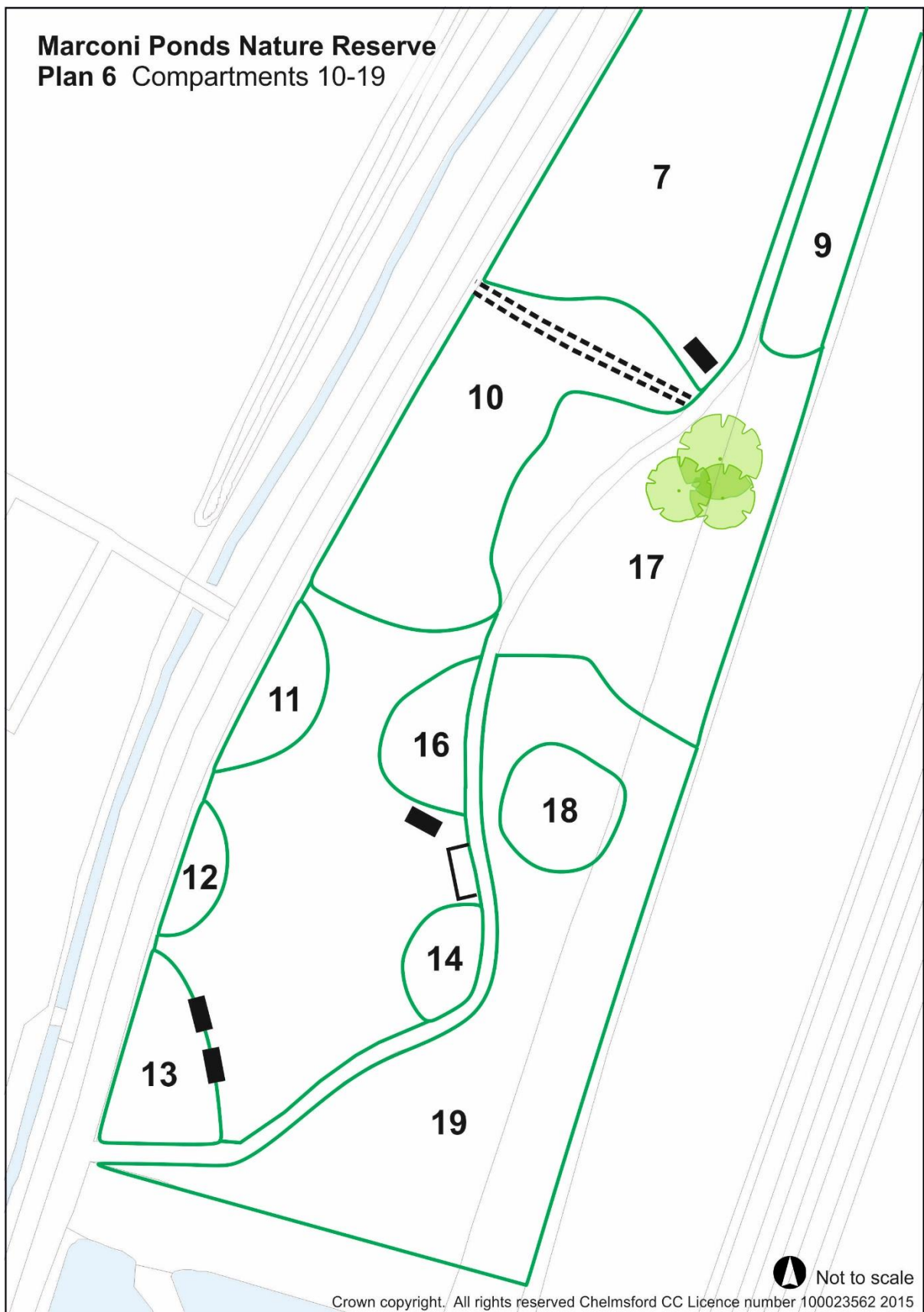
Marconi Ponds Nature Reserve
Plan 5 Compartments 1-9



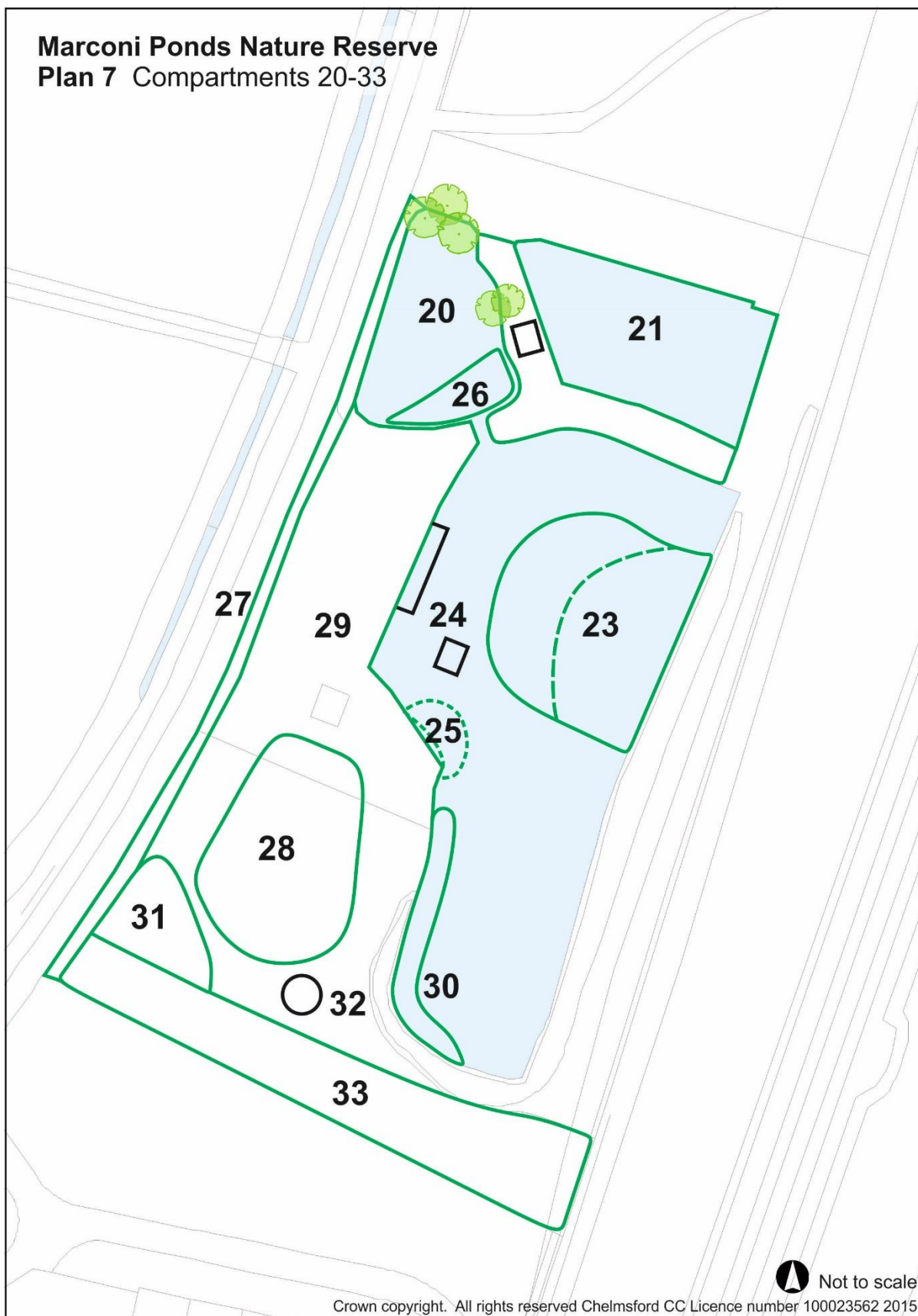
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Not to scale

Marconi Ponds Nature Reserve
Plan 6 Compartments 10-19



Marconi Ponds Nature Reserve
Plan 7 Compartments 20-33



6.0 References and acknowledgements

Google Maps. (2019) Google maps aerial of Marconi Ponds Nature Reserve. *Digital Globe, Get Mapping plc, Infoterra Ltd and Blue Sky*. Available at: <https://www.google.co.uk/maps/@51.7304029,0.4621794,337m/data=!3m1!1e3> (Accessed 17th November 2019).

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****Plumb Associates are acknowledged for the initial management plan in 2015 which this management plan has been based on****