

Crowborough Country Park Five-Year Management Plan 2018 to 2022

**Dolphin Ecological Surveys
On behalf of Crowborough Town Council**



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1.0 BACKGROUND

1.1 Location & Ownership

Crowborough Country Park covers an area of 7.68ha at central grid reference TQ529300 in the southeastern part of the town of Crowborough in East Sussex. There is housing along the eastern and southern boundaries of the Country Park whilst Tollwood Road curves around its north and west sides.

The Country Park was previously part of a clay quarry, with an associated brickworks, which closed in 1980 (Platt 2001). After its closure one part of the former quarry was retained as a Country Park and another part was developed for housing. In 1990/91 some minor landscaping, path and car park creation was carried out in the Country Park but otherwise little remediation work took place.

The Country Park was at first owned by Wealden District Council and in 2006 ownership was transferred to Crowborough Town Council (CTC).

1.2 Site Status

In 1995 the Country Park was recognised as a Site of Nature Conservation Importance (now known as Local Wildlife Sites (LWS)). LWS designation is a non-statutory designation but it recognises the site's value to wildlife at a county level.

The Country Park is also a Local Nature Reserve (LNR), which is a statutory designation declared by CTC in consultation with Natural England. The site lies entirely in the High Weald Area of Outstanding Natural Beauty (AONB) and a blanket Tree Preservation Order (TPO) covers the whole site.

In 2016 the LWS designation was reviewed and the LWS boundary subsequently revised to encompass additional areas of woodland and sandstone outcrops to the south of the original boundary. This review increased the area of the LWS from 6.2ha to 7.68ha. The LWS citation for "CW71 Jarvis Brook Country Park" is included as an appendix to this plan.

1.3 Previous Management Plans

In 2006 CTC commissioned an ecological survey and five-year management plan for the Country Park to guide the management of their newly acquired asset (Dolphin Ecological Surveys 2006). That 2006 document covered the original 6.2ha of the LWS and contains details of the background and history of the site, which are not reproduced here.

A second five-year management plan, covering the same area of the Country Park, was prepared in 2013 by Roots Ecology. That report updated the management recommendations and made some new suggestions but did not include a repeat of the 2006 ecological survey.

This current five-year management plan for Crowborough Country Park is for the period 2018 to 2022. It aims to document and build on the management achievements of CTC and its rangers since the site was acquired by the council in 2006.

The two previous Country Park management plans followed a format that grouped management recommendations under the same broad headings. That format is followed again for the 2018-22 plan with some minor adjustments.

An important change in the current plan is that management recommendations are made for the additional 1.48ha of land owned by CTC that has now been added to the LWS and which is also within the LNR.

2.0 SITE DESCRIPTION

The habitat descriptions contained in the 2006 ecological survey of the Country Park (Dolphin Ecological Surveys 2006) are still largely accurate and the following is a summary of the site's key features. Site visits to inform the 2018 management plan were made in autumn 2017 and spring 2018 but a full ecological survey was not carried out.

The Country Park is largely wooded and has a central stream valley with steep slopes and terraces around the edges. This land-form reflects its past as a clay quarry.

The Country Park supports a range of habitats around the central stream including wet and dry semi-natural woodland, young plantation, scrub, flushes, wetland vegetation and ponds. Fragments of grassland and heathy vegetation occur in glades and along the path edges in places.

Patches of bare ground and the many exposed sandstone substrates are important features of the site for their potential to support specialised plants and animals. There are occasional mature trees and some small relict areas of what appears to be ancient woodland on the site margins, presumably left intact where clay was not extracted.

The stream is a minor headwater on a tributary of the River Medway. It enters the Country Park from the northwest and runs through an area of mixed woodland before cascading over sandstone boulders down to the lower (new) pond. It then meanders through wet woodland in the valley bottom before exiting the site to the southeast.

Edge habitats, for example those between the woodland and more open areas along rides and glades, are particularly important at the Country Park and provide good resources for a range of fauna. The transition zones between wet and dry habitats are also areas of interest for their biodiversity.

Near the head of the stream valley, there is a steep slope where the sandstone and clay of the stream channel and banks have a history of rapid erosion. There has been progressive erosion of a path at this point in the Country Park over many years. The problem of path erosion appears to have been exacerbated in recent years by additional surface water run-off being directed into the stream from surrounding developments, causing very rapid and high peak flows.

Figure 1
Site Features



3.0 MANAGEMENT OF THE COUNTRY PARK

3.1 MANAGEMENT AIMS

The aims of management at the Country Park have remained essentially unchanged since 2006. They can be summarised as follows:

- To conserve and enhance the biodiversity of the Country Park, including populations of uncommon species, through appropriate management
- To maintain the diversity of habitats and the varied vegetation structure of the Country Park
- To maintain the Country Park as a cherished area for informal recreation by local residents and visitors from further afield
- To make full use of the site's educational potential
- To monitor the effects of management on the site and if necessary adapt practices accordingly

3.2 ACHIEVEMENTS FROM 2006 TO 2017

In order to put the 2018-2022 Management Plan into context the following section provides a summary of the management actions that have been carried out at the Country Park since the first Management Plan was prepared in 2006.

All major actions are included here but there may be some unintentional omissions from this list of achievements.

From 2006 to 2017 the main priorities of management recommendations set out in the five-year plans have been the control of invasive non-native species (INNS), providing enhanced access infrastructure and maintaining early- and mid-successional habitats via path edge and glade management.

3.2.1 Control of INNS

There has been regular and ongoing control of INNS throughout the Country Park as recommended in both previous Management Plans.

This has included regular control of Indian balsam *Impatiens glandulifera* in the wet woodland as well as extracting New Zealand pigmyweed *Crassula helmsii* and parrot's-feather *Myriophyllum aquaticum* from the main (upper) pond.

The numbers of cypresses, cherry laurel (*Prunus laurocerasus*) and rhododendron *Rhododendron ponticum* trees and shrubs have been gradually reduced in the woodland areas and the small stands of Japanese knotweed *Fallopia japonica* appear to have been successfully eliminated at both car parks.

Control of INNS is almost always an ongoing task because complete elimination of problem species is hard to achieve, but the Country Park now has significantly lower levels of all target species identified that were identified in 2006.

3.2.2 Access Management

Access to the Country Park and its internal accessibility has been greatly improved since 2006. The car park at Osborne Road is now open during the daytime but locked at night and the car park at Tollwood Road has been closed and converted into a grassy glade with sunny scrub margins.



The Tollgate Road car park glade

A waymarked circular nature trail has been provided on surfaced paths and the path network has been rationalised. The number of minor paths that criss-crossed the site in 2006 has been reduced to some extent by the use of dead-hedging as well as through the provision of a surfaced route that remains dry in most conditions. However, in 2017/18 it was apparent that new minor paths have begun forming in some areas (see section 4.2.2 for recommended management actions).

New footbridges have been built at stream crossing points, one of which replaces the old concrete culvert that was present at the top of the gully in 2006.

Other infrastructure now in place includes a short length of safety fencing above a steep slope in the east of the site, picnic benches and good site interpretation material including a noticeboard that is regularly updated by the CTC ranger.

It appears that greater public use of the Country Park combined with a regular ranger presence has helped to reduce the misuses and fly tipping that were a problem in 2006.

3.2.3 Pond Management

The main (upper) pond has had debris removal and vegetation clearance carried out on a regular basis to maintain areas of open water and deter rubbish dumping in the pond. Some selective coppicing of bankside trees has increased the amount of light reaching the water.

Parrot's-feather and New Zealand pigmyweed have been removed annually from the upper pond by hand by the rangers and volunteers. This pond was electro-fished in 2017 to remove most of the fish and enhance the pond habitat for breeding amphibians.

A new (lower) pond has been created in the valley floor next to the area of fen vegetation, following the recommendation in the 2006 plan.



View of the new lower pond

3.2.4 Glade Management

Grassy glades that are scattered within the Country Park are mown late in the season on an ad hoc rotation depending on vegetation growth each year. Cut material is generally stacked in hibernacula/habitat piles on the edge of glades.

The wet heathy glade has had periodic clearance of the scrub that tends to invade this open area. Attempts to block paths into the glade with dead-hedging to reduce access pressure took some years to be successful but it is now much more secluded than previously.

A mountain bike path that had developed between the wet heathy glade and the new pond was noted in the 2013 Management Plan but has now been successfully removed using piles of brash.

The bank on the east side of the Osborne Road car park was recommended for glade creation and has developed into an area of young planted trees with mixed bracken, gorse, tree saplings, ferns and tall herbs. This structurally complex, west-facing bank is likely to be valuable to a range of fauna, particularly as it provides a warm, sheltered micro-climate.



The Osborne Road car park glade on a west-facing bank

3.2.5 Path Management

1m swathes along path edges around the Country Park are mown regularly during the growing season whilst the outer path edges receive a single cut at the end of the summer.

Fallen tree and over-hanging clearance is carried out along all paths where necessary.

3.2.6 Woodland Management

Some selective coppicing has been carried out, notably near the upper pond banks.

Dead wood has been retained wherever possible as recommended in the previous Management Plans.

Brash has been used to create hibernacula in several places around the site especially on the edges of glades where cut material is stacked rather than removed from the site.

3.2.7 Other Management

Other management achievements since 2006 include:

- Successful LNR designation.
- Removal of accumulated fly-tipped material, old fencing and most old tree guards.
- Regular litter picks are carried out.
- There is a regular CTC Ranger presence at the Country Park.
- Several small surface ditches have been created to reduce path flooding near the wet woodland.

3.2.8 Survey & Monitoring

The most recent full ecological survey of the Country Park was carried out in 2006 but some ongoing species survey work and monitoring has taken place over the last decade. This includes a dormouse nest tube survey in 2010 (no evidence of dormice was found), regular fixed-point photographs are taken, a monthly bird list is compiled by a volunteer and an amphibian survey of the ponds was carried out in 2017.

4.0 MANAGEMENT RECOMMENDATIONS 2018 to 2022

4.1 RATIONALE

This five-year plan covers a period of consolidation at Crowborough Country Park after the major infrastructure, habitat and species management works that have taken place over the past 11 years.

The key management themes are ongoing INNS control and access management. Survey and monitoring actions should also be given high priority over the next five years. Whilst some new habitat creation is scheduled within this plan, many of the management actions recommended are annual vegetation maintenance tasks.

4.2 RECOMMENDATIONS

4.2.1 Control of INNS

Control of the remaining INNS across the site using the same range of techniques that have been successful in previous years should be continued. This includes the aquatic species in both ponds, trees and shrubs in woodland areas and Indian balsam, especially in the wet woodland. All material derived from INNS should continue to be disposed of appropriately to ensure that it does not remain viable or spread outside the Country Park.

There are some additional INNS which were noted during site visits in 2018 that should be added to the control programme (see map). The two most pernicious new species to tackle as part of the overall Country Park INNS control work are both listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended).

The first Schedule 9 species is variegated yellow archangel *Lamiastrum galeobdolon ssp. argentatum*, of which there is large patch near the southern entrance to the Country Park on Tollwood Road. This garden escape can spread rapidly both by seed and vegetatively by its long runners. Its sprawling growth can suppress native woodland ground flora and an attempt should be made to restrict and reduce its extent. Pulling the plants up by hand is the only low-impact way to control this plant as chemical treatment risks adverse effects on the native ground flora.

The second Schedule 9 species that should be tackled is montbretia *Crocasmia x crocosmifolia*. This is present as a quite significant stand that is spreading down the steep eastern slopes adjoining the main path. This plant tends to spread via its bulb-like corms and can be controlled either by digging out the plant in its entirety or by targeted herbicide application in the growing season.

There are small amounts of three other non-native species which it is recommended should be removed from the Country Park. A single large Cotoneaster shrub occurs next to the main path near the upper pond. Whilst this is an attractive shrub its berries are readily spread by birds and the species quickly becomes more frequent. There is also a small stand of bamboo on the western edge of the Osborne Road car park which will spread and become much more of a problem if not tackled whilst small and manageable. Finally there is a well-established clump of Wilson's honeysuckle *Lonicera nitida* on the edge of the damp glade near the upper pond in 2018. Although relatively slow to spread this non-native shrub should be added to the list of woody species to remove from the Country Park as part of the INNS control programme because

it is now large enough to be suppressing the growth of other plant species. All three of these woody plants should be cut and/or dug up with follow-up herbicide treatment if necessary on any subsequent re-growth.

4.2.2 Access Management

Continued access management is needed to prevent minor paths causing erosion of the steep slopes on the valley sides. There appear to be several new minor paths on slopes from the main circular path down to the stream valley.

Some formalising of the most heavily used desire lines with localised surface consolidation or installation of steps to avoid erosion should be accepted whilst also using brash as dead-hedging to discourage access via more minor small paths before they become entrenched. Temporary explanatory signage may also be appropriate in places.

At the top of the slope above the lower pond (see map) there is a very clear desire line leading from the main path towards the wet heathy glade. The view down to the pond and wet woodland from this point is very attractive and there is scope to turn this area into a viewing point with a small seat and fencing and/or dead hedging along the top of the slope to discourage access down to the pond or further into the glade. The ground is poorly drained and lies very wet in places at the top of the slope so it will need considerable care to ensure that a seat and fencing are located where they will not be unusable in wet conditions. Some selective felling of young trees on the slope might be needed to retain the view when the location of the seat is decided but tree removal around the lower pond slopes should be kept to a minimum to discourage access from the path above.

4.2.3 Pond Management

4.2.3.1 Upper Pond

Re-growth of the coppiced bankside trees next to the upper pond has been slow so there is no immediate need to re-cut them. This should be reviewed in year 3 of the plan and selected stools coppiced if shade on the south and east sides of the pond has increased unduly.

4.2.3.2 Lower Pond

The lower pond is in need of some remedial management as it is popular as a swimming pond for dogs and which leads to very turbid water with eroded banks and minimal growth of marginal or aquatic vegetation.

Re-shaping the edges of the lower pond to make it less straight-sided could help to promote better growth of marginal vegetation and also help stabilise the banks but this will need to be done carefully and with full information on the purpose of works provided to visitors.

Building on the recommendations of the 2013 Management Plan (which involved adding large rocks to the mid-point of the pond to help reduce the turbulence caused by dogs) some further experimental soft engineering of the banks should be carried out. Groups of moderately large diameter logs should be placed next to the rocks to trap silt and provide rooting substrate for marginal vegetation. Clumps of yellow flag *Iris pseudacorus* or hemlock waterdropwort *Oenanthe crocata* could be transplanted from the adjacent fen into crevices between logs.

There is currently no need to manage the area of tall, wetland vegetation in the area of fen and in the wet woodland adjacent to the pond because this dense vegetation discourages access by people and dogs.

4.2.3.3 Seasonal Pond

There is a small, seasonal pond in woodland near the main path in the north of the Country Park (see Figure 1) which tends to hold water over the winter.



View of the seasonal pond

There is scope to remove accumulated silt, deepen and re-profile this pond in order to make it hold water throughout more of the year and to create shelved edges where marginal vegetation can establish. This would provide a useful additional amphibian breeding pond in the north of the site as well as a habitat for a range of other aquatic fauna and flora.

There are two potential problems that need to be addressed before this work can go ahead; the first is disposal of the spoil, the second is that an enhanced pond lying so close to the main path would inevitably suffer high levels of disturbance by dogs.

Access for machinery to the seasonal pond is reasonably straightforward along the surfaced path from Tollwood Road. The pond could be excavated and spoil removed from the site along this route without causing undue damage to woodland soils. There is also the potential to use any clay that is removed when deepening the seasonal pond on a nearby CTC site where creation of a new pond is proposed.

Excluding dogs from the newly deepened pond can only realistically be achieved by a combination of robust fencing and good communication with dog owners who visit the site. Post and rail fencing supplemented with stock netting and perhaps also a thick layer of brash will need to be installed around the pond and the surrounding area.

Information boards should be erected before work begins to explain why dogs will be excluded from this pond. It is likely that some ongoing direct engagement with regular visitors to the site will also be needed to maintain this as the “dog-free” pond.

The area around the seasonal pond would benefit from selective coppicing of tall, spindly birch and willow to increase light reaching the pond and promote a more dense shrub layer. The scattered non-native woody species in the vicinity should be removed. A large willow has fallen on the slope to the west of the pond but is still alive and should be retained as it will quickly develop into a valuable thicket.

4.2.4 Glade Management

4.2.4.1 Wet heathy glade

The vegetation in the wet heathy glade should continue to be managed on a three-year rotation to maintain both open areas and structurally diverse, scrubby margins.

This small area appears to wetter in 2018 than it was in 2006 with some changes to the plant communities present. An updated botanical survey of the glade is recommended to inform future management.

4.2.4.2 Osborne Road car park glade

The edges of Osborne Road car park are mown to maintain the whole area as a kind of glade and this should be continued. The west-facing bank supports structurally complex vegetation of young trees, mixed scrub and tall herbs which is likely to be valuable to fauna such as invertebrates, small mammals and reptiles. In addition the group of planted trees in the centre of the bank should be removed to extend the open, scrubby glade structure.

This embankment glade should be maintained by cutting half the glade vegetation in alternate years late in the season. Cut material should be either removed or piled on the glade edges.

4.2.4.3 Tollwood Road car park glade

The vegetation on the edges of the Tollwood Road car park glade should continue to be cut on rotation every 2-3 years.

4.2.4.4 Grassy glades

Ad hoc late season cut and removal of grassy vegetation in the small glades that are scattered throughout the Country Park should be continued.

There is a linear glade developing on a plateau near Tollwood Road where selective cutting and raking of dense bramble by the ranger in recent years has promoted herbaceous ground flora and forms a sunny link into the glade below it. This ad hoc management should be continued to maintain the open habitat connectivity in this part of the site.

4.2.5 Path Management

A 1m wide strip along the main path edges should continue to be mown at regular intervals during the growing season. The outer edges should continue to be mown annually late in the season.

Routine management of cutting back overhanging, fallen or dangerous trees from paths should be continued.

Additional scallops and bays should be cut into path edges where possible to diversify the ride edge structure, especially along the main path. There is an opportunity to selectively remove several young oak and birch trees on the main path north of Osborne Road car park (see Figure 2) to widen the sunny ride edge zone.



Young trees to remove on the main path edge

Any brash produced by path edge and woodland management actions should be used as strategically placed dead-hedging to help prevent paths opening up through the fragile wet woodland zones, on steep wooded slopes and elsewhere.

4.2.6 Woodland & Hedgerow Management

Woodland management over the period of this plan should include several minimal intervention zones, most notably the majority of the new LWS area in the south of the Country Park. This section of the site has very little public access at present and should continue to be maintained as a refuge area for native fauna.

The wet woodland also requires little active management apart from INNS control (see 4.2.1). Access to this area should be discouraged to protect fragile vegetation, soils and the watercourse.

The steep banks to the east and north of the lower pond have some excellent sandrocks rich in lower plants which could benefit from less shade, however removing trees here risks increasing access and erosion of the slope down to pond. At most very gradual removal of dangerous or single trees should be undertaken on an experimental basis in association with creation of the viewing point (see 4.2.2) and the results monitored closely.

The small area of broadleaved plantation area and the adjoining wet alder/birch woodland in the north of the Country Park has a very uniform, spindly structure. Up to a third of this woodland block could be

thinned and coppiced (as appropriate) over the life of this Management Plan to promote better age structure and enhance the growth of the remaining trees.

The western side of the Osborne Road car park has a fenceline, beyond which is a row of mostly hazel on the stream bank. The narrow strip between the fence and the stream should be coppiced to create a more diverse woodland edge zone.

Hedge laying to promote dense, woody growth that is valuable to a range of fauna could be carried out along two hedges in the Country Park. The relict hedgerow with old hazel coppice stools alongside Tollwood Road is now quite patchy but should be laid in sections where tree and shrub growth is sufficient. The short length of young, planted hedge between a garden in Osborne Road and the entrance to the Country Park would also benefit from laying.

The southernmost tip of the Country Park adjoins, and is contiguous with, a garden in Osborne Road. This very wet area has several steep banks, a seasonal pond and an abundance of ferns and mosses. Management of this zone will require a light touch to ensure it retains its unique character, however, INNS control should be carried out as necessary.

Trees on the southeast-facing embankment that separates the CTC land from an adjoining garden in the southern section were coppiced in early 2018, partly as a safety measure but also to benefit the woodland ground flora and also allow more light to reach the adjoining garden which was heavily shaded by the trees along the embankment. A botanical survey of this newly included section of the Country Park is recommended to further inform management actions.

Retention of dead wood in the Country Park should be continued wherever possible.

4.2.7 Other Management

Make contact made with Sandra over NFM and gill erosion – ways to slow and mitigate high volume and velocity flows.

There are still some old tree tubes/shelters to remove from area south of the upper pond and at the Osborne Road entrance.

Any remaining old dormouse nest tubes should be removed from the woodland areas.

Litter control should be continued as a regular activity including removing debris from the ponds as necessary

Household waste dumped into the southern part of the Country Park from properties along Tollwood Road has been going on for some years. A new attempt to engage householders and prevent this behaviour should be made.

4.2.8 Survey & Monitoring

Expanding the biological survey and monitoring of wildlife at the Country Park is a high priority in this Management Plan. Some of the recommended survey and monitoring actions can be carried out by the CTC ranger and volunteers whilst others may need to be commissioned from external contractors.

There is already a basic framework of regular photographic monitoring using fixed point photos and this should be extended to include the southern area. The ground level photos should be supplemented to help document and monitor change in vegetation structure by commissioning aerial photos (using an UAV) in winter and spring/summer.

The success of INNS control work should be monitored by a combination of visual checks and photography of treated areas and INNS mapping, similar to the process that is carried out by the CTC ranger at Crowborough Ghyll.

The success of the electro-fishing in the upper pond should be monitored by carrying out visual checks on fish presence and breeding amphibian surveys.

The CTC ranger already has some additional biological survey and monitoring work planned for 2018 and beyond. This includes establishing a butterfly transect, a reptile survey and a lower plant survey that will include a targeted search for *Disceium nudum*.

Botanical surveys of the new area in south and of the wet heathy glade are recommended to help fine tune future management of these two areas.

There is currently no established and easy system for CTC staff or visitors to record any casual observations of fauna and flora they encounter in the Country Park. A system to capture that data would be very useful, for example the noticeboards could be used to promote iRecord or other online recording systems for particular taxa or visitors could be encouraged to let the ranger know about what they see in the Country Park. All biological records should be submitted to the Sussex Biodiversity Record Centre (SxBRC) regularly.

REFERENCES

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Platt, S. (2001). *Preliminary report, former clay pit, Jarvis Brook*. Unpublished report to Crowborough Town Council by Scott Wilson Kirkpatrick & Co. Ltd.

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APPENDIX: Local Wildlife Site Citation Provided by the Sussex Biodiversity Record Centre

LOCAL WILDLIFE SITE

East Sussex

Site Name:	Jarvis Brook Country Park		
Site Ref(s):	CW71	Owner(s):	
District(s):	Wealden	Size (ha):	8.36
Parish(es):	Crowborough	Date(s):	Identified May 1995 Last Revised Jun 2016
Grid Ref:	TQ530299	Surveyor(s):	Kate Ryland

Summary

Jarvis Brook Country Park lies in the south-eastern part of Crowborough and occupies the site of a disused clay pit and brickworks. It supports a range of structurally diverse habitats, most of which have developed since brick production ceased but with relict areas of longer established vegetation.

The site has been designated a Local Nature Reserve and is extremely popular with local people for informal recreation.

Site Description

The pond in the southwest of the site supports populations of breeding Common Toad (*Bufo bufo*) and Palmate Newt (*Lissotriton helveticus*) as well as providing good habitat for invertebrates such as odonata. There are areas of secondary woodland, wet woodland and scrub, fragments of ancient woodland, grassy and heathy glades, streams and ponds. The steep slopes around the edges of the site and the upper stream valley are notable for their sandstone exposures and seepages, which support a diverse range of mosses, ferns and liverworts.

The secondary woodland includes extensive areas of Birch (*Betula spp.*), Ash (*Fraxinus excelsior*), Willow (*Salix spp.*), and Oak (*Quercus robur*) whilst Alder (*Alnus glutinosa*) woodland occurs across large parts of the site. The wet woodland areas have a diverse ground flora that includes many wetland species such as Marsh Marigold (*Caltha palustris*), Hemlock Water-dropwort (*Oenanthe crocata*), Water Mint (*Mentha aquatica*) and Lesser Spearwort (*Ranunculus flammula*). Hazel (*Corylus avellana*) coppice with Bluebell (*Hyacinthoides non-scripta*) and Wood Anemone (*Anemone nemorosa*) occur in the ancient woodland fragments on the site edges.

Open areas alongside paths and in small glades provide a contrast to the woodland and support a range of common grassland plants that are valuable to invertebrates.

Management Recommendations

There has been on-going control of invasive, non-native species in the Country Park and this management will need to continue for the foreseeable future.

FIVE YEAR ACTION PLAN 2018 to 2022

MANAGEMENT TASK	AREA	TIMING	YEAR				
Control of INNS			2018	2019	2020	2021	2022
Remove parrot's-feather & New Zealand pigmyweed by hand	Upper pond and lower pond if necessary	Late summer/early autumn	✓	✓	✓	✓	✓
Remove rhododendron & cherry laurel shrubs. Treat cut stems with herbicide.	All wooded areas	Winter	✓	✓	✓	✓	✓
Remove Indian balsam by hand	Wet woodland (and elsewhere if found)	June/July before seed pods form	✓	✓	✓	✓	✓
Remove variegated yellow archangel by hand	Southwest corner near the Tollwood Road gate	All year	✓	✓	✓	✓	✓
Remove montbretia plants by digging up corms and/or herbicide treatment of leaves	Eastern slopes near the main path	Dig corms in winter. Use herbicide in April-August	✓	✓	✓	✓	✓
Remove Cotoneaster shrub and treat stump with herbicide if necessary	Eastern path edge near the upper pond	Winter	✓	✓			
Remove bamboo clump. Treat re-growth with herbicide if necessary taking particular care due to proximity of the stream	Western edge of Osborne Road car park	Winter	✓	✓			
Remove Wilson's honeysuckle shrub and treat stump with herbicide if necessary	Eastern path edge	Winter	✓	✓			
Access Management			2018	2019	2020	2021	2022
Discourage use of new & minor paths with brash/dead-hedging	All areas	Winter	✓	✓	✓	✓	✓
Formalise the most heavily used "desire line" paths with steps and crushed sandstone surfacing if appropriate. Explanatory signs may be needed	All areas	As necessary	✓				

MANAGEMENT TASK	AREA	TIMING	YEAR				
Create a viewing point with seating above the lower pond. Thin selected trees if necessary	Slope above the lower pond	Summer (but thin trees in winter)		✓			
Pond Management			2018	2019	2020	2021	2022
Review growth and re-coppice bankside trees if necessary	Upper pond	Winter			✓		
Modify bank profiles using logs and transplant marginal plants	Lower pond	October – December		✓			
Provide information before, during and after pond works	Seasonal pond	July	✓				
Deepen and re-profile pond	Seasonal pond	August/September	✓				
Install fencing around pond to exclude people and dogs	Seasonal pond	September	✓				
Remove non-native woody species from around the pond	Seasonal pond	September	✓				
Coppice trees around the pond but retain fallen, living willow intact	Seasonal pond	November	✓				
Glade Management			2018	2019	2020	2021	2022
Cut and stack approximately ⅓ vegetation	Wet heathy glade	Winter	✓	✓	✓	✓	✓
Mow grassy glade edges regularly	Osborne Road Car Park	April – September	✓	✓	✓	✓	✓
Cut and remove or stack ½ vegetation	Osborne Road Car Park bank	Winter	✓	✓	✓	✓	✓
Remove group of young trees from the centre of the bank	Osborne Road Car Park bank	Winter	✓				
Cut and remove or stack ⅓ to ½ of glade edge vegetation	Tollwood Road Car Park glade	Winter	✓	✓	✓	✓	✓

MANAGEMENT TASK	AREA	TIMING	YEAR				
Cut and remove grassy and tall herb vegetation from glades on an ad hoc rotation	Grassy glades	September/October	✓	✓	✓	✓	✓
Ad hoc bramble control	Linear glade on western plateau	Winter	✓	✓	✓	✓	✓
Path Management			2018	2019	2020	2021	2022
Mow 1m strip along main path edges regularly	Main path	April – September	✓	✓	✓	✓	✓
Mow outer path edges and remove cuttings annually	Main path	September/October	✓	✓	✓	✓	✓
Cut back dangerous overhanging and fallen trees from paths	All paths	As necessary	✓	✓	✓	✓	✓
Cut new scallops and bays into scrub along the edges of the main path & re-cut existing bays as necessary	Main path	Winter	✓	✓	✓	✓	✓
Use brash as dead-hedging to discourage use of new minor paths	Whole site	As necessary	✓	✓	✓	✓	✓
Woodland & Hedgerow Management			2018	2019	2020	2021	2022
Continue to retain deadwood where possible and maintain minimal intervention areas of woodland	Whole site		✓	✓	✓	✓	✓
Thin and coppice leggy trees to enhance the shrub layer and promote better growth of remaining trees	Northern plantation block and adjoining wet woodland	Winter		✓		✓	
Coppice hazel between the stream and fenceline	Osborne Road Car Park	Winter	✓				
Lay hedge along Tollwood Road in sections	Western boundary of Country Park	Winter			✓		✓
Lay newly planted hedge	Osborne Road entrance	Winter	✓				

MANAGEMENT TASK	AREA	TIMING	YEAR				
Other Management			2018	2019	2020	2021	2022
Investigate options to mitigate erosion in the upper stream valley using Natural Flood Management techniques	Stream valley	ASAP	✓				
Remove remaining old tree tubes	Osborne Road Car Park and Upper Pond areas	Whenever possible	✓	✓			
Remove remaining dormouse nest tubes	Whole site	Whenever possible	✓	✓			
Contact householders in Tollwood Road about garden waste dumping in the Country Park	Tollwood Road	ASAP	✓				
Continue regular litter removal including any debris in the ponds	Whole site	As necessary	✓	✓	✓	✓	✓
Survey & Monitoring			2018	2019	2020	2021	2022
Continue to take fixed point photographs and extend to include the southern area	Whole site	As previously	✓	✓	✓	✓	✓
Commission aerial photographs	Whole site	Winter & spring/summer		✓			
Monitor INNS control results using a combination of visual checks of treated areas, photography and mapping	Whole site	Summer	✓	✓	✓	✓	✓
Visually assess fish presence post electro-fishing	Upper pond	All year	✓	✓	✓	✓	✓
Carry out breeding amphibian surveys	All ponds	March/April		✓		✓	
Establish and record a butterfly transect	Whole site	April – September	✓	✓	✓	✓	✓
Carry out reptile surveys	Whole site	March – October	✓	✓	✓		

MANAGEMENT TASK	AREA	TIMING	YEAR				
			2018	2019	2020	2021	2022
Carry out a lower plant survey including a targeted search for <i>Disceium nudum</i>	Whole site	Winter/spring		✓			
Commission a botanical survey	Wet heathy glade & southern woodland (as a minimum)	Summer		✓			
Devise a system to capture casual wildlife records made by the ranger and site visitors. Ensure records are submitted to SxBRC	Whole site	All year	✓	✓	✓	✓	✓
Review the management plan and produce a new five-year plan		Summer					✓

