

Biodiversity Report:
Martineau Gardens, Edgbaston

October 2007



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Foreword:

This document should be read in conjunction with the SLINC Management Plan (Updated October 2007) for Martineau Gardens. Both documents concern the section of the Beechwood SLINC that is managed by Metamorphosis at Martineau Gardens. Access to the site is from Priory Road, Edgbaston.

The purpose of this document is to outline the work undertaken between July 2006 and October 2007, as part of the "Discovering Biodiversity at Martineau Gardens" project, funded by the Heritage Lottery Fund, and match-funded by the Rowlands Trust.

This outline and report will be broken down into three sections: ~ *Habitat Creation and Management* ~ *Events and Activities* ~ and *Surveys and Wildlife Recording*

It will subsequently include an overview of spending and volunteer hours, followed by extensive appendices including every ecological, habitat and species-specific survey undertaken at Martineau Gardens to date, as well as up to date list of all species recorded therein.

It is the author's intention that this document, in conjunction with the site management plan, will provide a thorough and accurate record of the ecological history of the Martineau Gardens part of the Beechwood SLINC.

- Morgan Hughes, AIEEM
Biodiversity Co-ordinator, Martineau Gardens
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Habitat Creation and Management

Conservation and habitat management on site can be broken down into several areas: Woodland, Hedgerows, Meadows, Pond and Formal Gardens. The work undertaken in some does, however, relate to other areas (in that some areas of hedgerow and meadow, for example, are located within the “Woodland” area.)

- **Woodland.**

Removal of Non-native species: This has focused primarily on the removal of laurel from the woodland, which has been done with some success, although it was decided that the removal should take place over several years rather than all in one year, in order to minimise the aesthetic impact on the site. The laurel removal in the second year will include the planting of replacement species and in some cases the creation of additional glade areas within the woodland itself.

Dead Wood Habitats: There are several areas of dead wood within the wildlife area. These consist of stacked wood piles (to create a gradient of micro-habitats), areas of naturally fallen trees and dead wood, and also standing dead wood. Tree surgery undertaken during the winter 2006/7 was planned with dead wood habitats in mind. There were several dead, overhanging or dangerous trees that were scheduled for felling due to health and safety. These were felled at 4 – 5 metres in order to leave the trunks standing as dead wood habitat for invertebrates.

Bluebells: The issue of Spanish vs. English bluebells was considered by the biodiversity group early in the year. It was decided that although some English bluebell seeds were scattered in newly-cleared areas in the woodland, that the process of removing Spanish or hybrid bluebells would be too labour intensive to be considered worth while. In consideration of the “people and wildlife” nature of the site, aesthetics, and from a simple biodiversity (invertebrates) point of view, the Spanish bluebells were deemed a worthy compromise. As the focus of the post is biodiversity rather than botanical conservation, it was agreed that the Spanish bluebells add more to the site than they detract from it, and that they would be left untouched.

Bat and Bird Box Scheme: Over the course of the project, a total of 20 bat boxes and 22 bird boxes were built and put in place throughout the woodland and meadow. The bat boxes were, according to guidelines, placed at a height of 5 metres, in clusters around mature tree trunks. The bird boxes were numbered in order to enable monitoring of breeding birds both in 2007 and future breeding seasons. The information gathered has been entered into MapMate and has become part of the biological data for the site. A winter regime of cleaning the bird boxes and cataloguing their use or lack of use should continue into the future.

Ground Ivy: Extensive areas of the woodland have been cleared of ground ivy. There still remain areas in which this must be continued, and the cleared areas must be maintained with

an aim to allow sunlight to reach the woodland floor. This will enable the germination and flowering of any woodland plant species that are currently in the soil, and will create areas in which seeds can be sown to enhance the aesthetic aspects and biodiversity of the site's flora.

Thinning and Coppicing: Several areas have undergone thinning and coppicing, from areas near the path in the older section of the site, to the willow area around the pond and the area of young woodland between the pond area and apiary. Materials gathered from this activity have been used in other areas of the site. Coppicing will continue into the future, including rotational coppicing in some areas.

Path Closure: The previous path leading to the right after entering the woodland has been closed. This was in accordance with one of the recommendations of a previous ecological survey, indicating that more areas should be restricted from public access in order to benefit wildlife. This path was chosen because its removal joined up two fragments of habitat into one congruous area for wildlife, and also because the nearby bird feeding station benefited from the lack of disturbance. Fourteen hawthorn trees were planted in the area which was the route of the path, and these trees will be managed as a rotational coppice to provide cover, and perching / nesting areas of variable heights for the woodland's many breeding birds.

Path Maintenance: Paths have been maintained throughout the year, and edged with logs in areas where it was previously unclear where to walk. This is particularly the case with the small footpath leading from the pond area to the apiary, as this path goes through the recently cleared and coppiced young woodland. In areas such as this, where trampling is a risk, the paths have been clearly defined with logs, and the walking area covered with bark chippings in order to minimise the slipping risk when the woodland becomes muddy in the autumn and winter months.

Bee Meadow: The bee hive / apiary area was previously a bank of brambles approximately 1.5 metres in height. It created a substantial tripping risk for the beekeeper and anyone else using the path. During the bees' dormant time, the hives were sealed and the area was entirely cleared. Raised beds were constructed and will be planted with "example bee planting" for visitors to see. It has been pointed out that these beds will be of little foraging value to our resident bees, as they are not likely to forage that close to their hives, however the educational value is high, and some thought will be given to an ideal planting scheme for winter 2007/8.

Wildlife Observation Point: The extreme corner of the woodland was previously a derelict area containing wood, metal and various types of debris. This area has been cleared and a new "Wildlife Observation Point" has been created. This consists of a bird feeding area, bird boxes, bat boxes, hedgehog home and insect habitat, all viewable from a natural screen made of coppiced materials from the pond and young woodland areas. The bare chain link fences in this area have been converted into a willow screen, which in future years should become covered with ivy, creating a green wall. This screen was created in such a way that it does not limit access to the resident fox population, which were (and presumably are still) using a hole in the fence as an access point.

- **Hedgerows.**

A total of 3 hedgerows have been worked on this year. Two were laid as live hedges and the remaining hedgerow was planted in a double-row from bare root stock.

Hedgerow 1: During a process of ivy-clearance, a defunct line of trees forming a thin hedgerow was discovered in the woodland. Approximately 2/3 of this was laid as a low (60cm) hedgerow in an attempt to save the trees. They had hitherto been prevented from growing or thriving due to the presence of laurel which blocked out much of the available light. After the removal of the laurel and the laying of the hedge, the new low hedgerow is growing well, and will be cut back / thickened in winter 2007/2008. This hedgerow will also be extended to include the remainder of the defunct hedgerow, and over the next 5+ years of management will become an established hedge between the two main paths of the woodland, running the entire length of the SLINC.

Hedgerow 2: The mature and overgrown standing hedgerow on the eastern border of the woodland separated the woodland area from the bonfire / composting part of the Gardens. This was laid as a Midland-style hedge by a group of corporate volunteers from HSBC Bank, under supervision from the Wildlife Trust for Birmingham and the Black Country. This hedge is growing well, although its northern end is sparser and has been planted up with hawthorn bare root stock. With management (including the removal of ivy and hops) this hedge should continue to grow well. There is a stand of vegetation in front of the northern end of the hedge, which was left in place in winter 2006/7 in order to provide greenery in the hedge's first year of growth. This is scheduled to be removed and to become the extension of the summer wildflower meadow in winter 2007/8.

Hedgerow 3: Along the northern edge of the meadow / shipwreck area was a chain-link fence (which formed the border of the tennis court before the meadow was in place) and a line of sycamore trees. Many of the sycamore trees were removed (the rest were cut low, and will be removed entirely this winter) and along that line, a new hedge was planted from bare root stock. The species planted were guelder rose, hazel, hawthorn, blackthorn and dog rose. The hedge will have 50% of its first year's growth cut back in winter 2007/8 in order to thicken and strengthen the hedge. Weeding will continue to minimise competition from other plant species, and in 4-5 years it will be possible to consider laying the hedge in the same way that Hedgerow 2 was laid. This procedure has been a dramatic change on the site, and has opened up the meadow area more, improved aesthetics and created wildlife habitat.

- **Meadows.**

The main meadow area, which encompasses and winds around the shipwreck play area, has been divided into two separate meadows, in order to provide greater biodiversity, and also to accommodate the Garden's historical and ongoing use of the front (spring) meadow area as an

amenity for activities and late summer events. These two (summer and Spring) sections of meadow are the main area seeded with wildflowers in 2006, however there is an additional open area of woodland in which “shady glade” mix was sown.

Spring Meadow: This area is comprised of two areas separated by an access path. The edges of these patches are undulating in order to increase verge habitat and sun exposure for invertebrates when the meadow is long. A standard traditional grass and seed mix was used, purchased from Landlife. This area was marked out and turf-stripped, before weeding, raking, seeding and then re-raking. The meadow has grown well in its first year, although time will tell how well the spring meadow is capable of recovering from late-summer events and activities. Monitoring of the meadow’s health will be vital in planning events in such a way that the meadow is not damaged.

Summer Meadow: This area is the open area between the shipwreck and the new hedgerow. This area was not turf-stripped, but was hard-raked, and then over-sewn with the same mix as the spring meadow, with one alteration: The addition of extra yellow rattle seeds to assist in competition with the grasses that are already in place. Again, this meadow has grown well, although it will be spring / summer 2008 before any significant flowering is noticed, as the mix consisted of perennial species, not annual ones. The future of this summer meadow includes the extension of its area to cover the top of the bonfire / compost area. Old composting bins have been removed in this area to accommodate the new meadow.

Shady Glade: The shady glade refers to the area directly in front of the bird hide, up to and including the area of the (now closed) path to the pond. This area has been restricted to visitors, and will ideally provide good habitat for woodland species of insects, as well as good, undisturbed foraging areas for birds. The shady glade mix differs from the traditional mix, as it does not include grasses, and it includes shade-tolerant species such as bluebell, wood avens and hedge bedstraw. Due to the nature of the area in which the seed has been sown, this glade requires frequent weeding, particularly the removal of ivy, bramble and nettles, which had, until the area was cleared, created a “sea” of vegetation several feet high, blocking all light to the woodland floor. Following on from the success of this area, it may be possible to create other glades in the woodland, in areas where large patches of laurel have been removed and created gaps in the woodland landscape.

- **Pond.**

Vegetation Management: The overgrown vegetation in the pond was removed at the end of the summer in 2006, and this will continue each year. Focus in 2007 will be on thinning the woody emergent vegetation, and it is recommended that a planting scheme to increase the biodiversity of the pond’s flora should take place in spring 2008.

Beech Hedge: After much of the work in the woodland (primarily the removal of large areas of laurel), it was commented that the aesthetics of the pond / medicine wheel area had degraded,

in that the degree of privacy that the area afforded had reduced somewhat. As a remedy to this, a small beech hedge was planted in order to stop people from cutting through from the path, and also to create a “wall” of vegetation which would tend to hold its leaves during winter, so that the area, which is widely used by visitors and volunteers, would regain its private and peaceful atmosphere. However, some of the beech trees have not thrived during the summer, and these will need to be replaced in the winter months of 2007/8.

Bog Area: This area was not worked on during the course of the project. However, recommendations in the recent Phase 1 survey indicate that the removal of saplings in this area will prevent it from drying out. This work is scheduled for winter 2007/8.

Amphibian Habitats: An amphibian hibernaculum area was put in place near the pond area. This is in the form of half-buried earthenware pots, painted in bright colours in order to not only create hibernation habitat for toads and newts, but to use the area as a talking point / educational tool.

Willow Coppicing: The willow around the pond was coppiced in winter 2006/7, and the materials were used for constructing the wildlife observation screen and the fedge in the formal gardens. Coppicing in this area will take place each year, on a rotational basis.

▪ **Formal Gardens.**

Best Practice: A policy of “Best Practice for Wildlife” is now in place in the formal gardens, including the raised herb beds and vegetable plots. The existing organic practices were already of great benefit to wildlife, but practices such as leaving fallen fruit, and extending flowering times by rotationally cutting back plants such as buddleia in the early spring are also benefiting wildlife using the site. The variety and long flowering periods of the plants in the raised herb beds make it without doubt the best site for diptera and hymenoptera within the boundaries of Martineau Gardens. This resource should be managed with this in mind, and any future planting regimes done with ecological best practice.

Invertebrate Habitats: Several insect habitats have been placed around the formal gardens, in order to provide habitat for lacewings, ladybirds and solitary bees. There are plans for additional solitary bee habitats to be put in place in the winter 2007/8 work season.

Events and Activities

Activities and events held during the Biodiversity Project’s timescale can be broken down into: Work Parties, Family Events, Natural History Courses and Corporate Volunteering

- Work Parties: Work parties were initially scheduled on selected Saturdays during the winter months in order to enable volunteers to attend who either worked full time or were otherwise unable to volunteer on week days. These days were well-attended and they quickly became the major days in which woodland work was carried out, as well as training for those attending. The days were so popular that several of the volunteers requested that they continue in winter 2007/8. As a result, a series of new Saturday work parties has been scheduled.
- Family Events: A full schedule of family events took place throughout the project's duration, including: Mammal Days, Bat and Moth Nights, Bird Ringing, Reptile and Amphibian / Pondlife Day, Open Day Nature Walks, Bug Hunting Days and Pond Dipping. These were well-attended, with the maximum number at an event being Bat and Moth Night with 45 people in attendance, including families. An events leaflet was created and circulated throughout the year.
- Natural History Courses: A series of natural history courses were trialled during the summer of 2007. These included: Mammal Identification, Freshwater Invertebrates, Practical Entomology, Bushcraft and Digital Wildlife Photography. The latter three were well-subscribed, but the others did not get any bookings. It remains to be seen in future years whether the factors affecting this were: the day of the week (these courses were all on Fridays, not on weekends), cost (The courses were £25-30 each) or simply because we weren't reaching the target "audience". However the three courses that did run were extremely successful and feedback was all positive, particularly in the case of the Bushcraft course.
- Corporate Volunteering: HSBC, KPMG, Legal and General, and Enterprise Rent-A-Car were some of the companies that sent volunteer groups who gave their time, effort and financial support to the project. These groups were responsible for the renovation of the bird hide, hedge-laying, winter woodland work and also work in the formal gardens planting up the formal pond and re-skinning the poly-tunnel. These have proved to be very productive relationships, and it is hoped that they continue into the future. A 3-tiered scheme of "corporate memberships" and "corporate partnerships" has been developed to standardise this type of relationship from 2008 onwards.

Surveys and Wildlife Recording

During the timescale of the Biodiversity Project, a group of conservation volunteers has formed, many of whom repeatedly return and remain involved with biological recording at Martineau Gardens. Part of the success of this group has been the inclusion of training in each of the survey activities. General summaries of activities and related training are outlined below.

- Moth Trapping: The Biodiversity Project at Martineau Gardens received a donation of a brand new Skinner Moth Trap from the Field Studies Council's Biodiversity Training Project. The trap

has been used several times each week since, producing not only an abundant species list (to date over 160 species strong) but also a fantastic training opportunity for interested volunteers. Several of the volunteers have taken such an interest in the moth survey that they have continued the trapping and recording scheme during staff annual leave, and they have in turn helped to train other volunteers in identification skills. All moth records, as well as being submitted to EcoRecord at the end of each year, should also be submitted to the FSC's Biodiversity Training Project at Preston Montford, Shrewsbury as reciprocation for their generous donation.

- Bat Surveys: The Birmingham and Black Country Bat Group (BrumBats) has been working with staff and volunteers at Martineau Gardens in a series of surveys aimed at determining which bat species are using the site and where the bats are roosting in the woodland. These surveys were extremely well-attended as well as successful, confirming the presence of three species and the location of 1 definite (tree 75) and 1 possible roost site in the woodland. These surveys were also used as training days, where attendees learned to use heterodyne and frequency division bat detectors, how to record bat sounds, and how to analyse bat recordings from frequency division equipment, using BatScan software. It is recommended that surveys be repeated in future years, and that the bat populations continue to be monitored.
- Ongoing Recording: Several of the volunteers have been involved in recording general wildlife sightings at Martineau Gardens, from weekly bird lists, to invertebrates and flowering plants. This type of recording has been ongoing, and not part of a structured survey, yet has yielded some good results, all of which have been recorded in the "wildlife records book" and transferred to MapMate software, ready for submission to EcoRecord. This type of ongoing recording is instrumental when monitoring the success of habitat management work on site, and should continue into the future.
- MapMate: Several of the volunteers have been trained to use MapMate software, and are confident enough using it to enter records that they have made. An additional MapMate training session will take place before 2008.
- Other Surveys: Several other surveys have taken place during the course of the project, including trees, fungi, birds, insects, malaise trapped diptera, etc. The results of these surveys, where possible, are included in the appendices of this document.

Additional Project Information:

- Budget and Spending: The Biodiversity Project officially ended at the end of July, 2007, but there was sufficient under-spend to extend the project until the end of December 2007. The project has provided Martineau Gardens with binoculars, microscopes, a moth trap, a library of natural history books, field guides and leaflets, all of which remain here for the use of visitors, staff and volunteers.

- Volunteer Hours: Thanks to an incredibly dedicated and hard-working team of conservation volunteers, we have accomplished a lot over the duration of the project. They have amassed nearly 1,900 volunteer hours, providing well over £11,000 in match funding.
- Health and Safety: Every event, activity and work action undertaken as part of the Biodiversity Project has been risk-assessed. These risk assessments are available upon request.
- Habitat Management in the Future: Following on from this document, a Habitat Management Guidelines document will be published; outlining what work needs to be done on site, both in the woodland and meadow areas, and in the formal gardens. These guidelines will cover from January 2008 to December 2012, at which time a review is recommended. The document will be available from November 2007, and will be located in Reception as well as available as a PDF on request.
- Publications: Two seasonal leaflets have been published as part of the Biodiversity Project and another two prepared. These outline the changing seasons, and guide visitors regarding what to look for in the wildlife area in each season, what changes are taking place, and which species may be seen, both flora and fauna.