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Book review

Grasshoppers and crickets of Surrey. David W. Baldoek. Surrey Wildlife Trust. 1999. 111 pp., 16 colour plates. Hardback, £12 plus £2 p. & p. from Marketing Department, Surrey Wildlife Trust, School Lane, Pirbright, Woking, Surrey GU24 0JN, payable to Surrey Wildlife Trust. ISBN 0 9526065 4 2.

Grasshoppers and crickets of Surrey is an attractive guide to this small group of insects, which also includes the native cockroaches and earwigs. Whilst it does not attempt to replace the need for an identification key or field guide, it is a valuable complement. The detailed, descriptive field notes for each species would help a novice recorder to confirm identity. The sections on the history of recording in Surrey, and the recent use of bat detectors make interesting reading. I enjoyed reading the 'squashed on the road' method of recording the oak bush-cricket, which are easily identified by their blue-green blood. Indeed, throughout the book the text is informative, easy to read and bears witness to David Baldoek's extensive knowledge of the subject. The strength of the book lies in the detailed observations of each species, their behaviour, variation and times of activity.

As the county of Surrey contains the majority of Britain's Orthoptera, the book is a very comprehensive account, of value to recorders everywhere and certainly throughout the London area. I found the colour photos particularly useful, since they are taken in the field showing the insects in natural habitats, exhibiting behaviours such as courtship, mating and ovipositing. Photos of nymphs are very helpful — and the picture of a speckled bush-cricket in the beak of a whitethroat illustrates the value of these relatively common insects in a healthy ecosystem.

The notes on distribution and current status are very up to date, replacing the information in older field guides. However, with the increased sophistication of computer mapping I found the dot maps rather old fashioned and crude. I would like to have seen a larger, more detailed map of the area showing distribution of species overlaying factors other than geology, e.g., habitat, urban development, etc. Also, the gazetteer in the appendix would have been more useful if it cross-referenced the species found in each location. It is a laborious task to read through the text for each species to establish records for a particular site.

Despite this, the book is a valuable addition to the series, of interest to expert and novice entomologist alike.

SANDI BAIN

A survey of vascular plants in the Wildlife Garden of The Natural History Museum

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Summary

A survey of vascular plants was carried out in the Wildlife Garden of The Natural History Museum, South Kensington. The results, discussed in relation to the plant communities the garden has set out to present, show that the garden is host to a wide diversity of plants. Accommodating invading species, more vigorous community members and unspecified cultivars are just some of the challenges encountered in a wildlife garden created in central London. This paper complements the findings of a survey of cryptogamic plants and fauna published recently in *The London Naturalist* (Honey et al. 1998).

Introduction

Background

The Wildlife Garden was created to provide an educational resource to promote an understanding of the balance and relationships between plants and animals, both for children and adult visitors to the Museum. The background, design and wider aims of The Natural History Museum Wildlife Garden have already been fully described (Honey et al. 1998).

The management aim of the Wildlife Garden is not only to promote species diversity but also to create and manage different communities of plants, representing those found in a range of habitats in lowland Britain. Regular monitoring will highlight the different plant strategies within and between these habitats, thus providing information on the viability of habitat creation on a small scale in the inner city. The habitats these communities are designed to represent have developed over thousands of years and we are fully aware that we are unable to re-create the precise conditions in a small area in central London. Monitoring over a period may offer information on species unable to survive in the inner city, species that will tolerate inner-city conditions, and species that thrive there. Arguably, such a garden should have been created using local genetic stock only but this was not practical. The garden would have taken several more years to complete using only seed collected from London's woods, meadows and heathland.

Vascular plants create structural and species diversity both to attract, feed and harbour wildlife and also in many instances to provide a means of transporting additional species of animals, including insects, into the Wildlife Garden. For example, 'The sudden appearance in September 1995 of several molluscan species . . . is probably related to the introduction of submerged and marginal macrophytes into the pond during the summer of 1995' (Honey et al. 1998: 29). It is therefore essential in the overall monitoring scheme, not only to monitor the development of the vegetation as first planted in 1995 but also to record subsequent deliberate introductions and the sources of these plants. In addition, monitoring should provide the data to enable comparisons to be made between the different methods of habitat creation including habitat translocation, seeding, and planting of individual plugs or pot plants.

Monitoring of the Wildlife Garden's flora and fauna was started soon after the initial planting in 1995 and detailed observations of cryptogamic plants and animals including insects presented. Monitoring of the vascular plants was also started in 1995 and preliminary observations described (Honey et al. 1998: 24).

The purpose of this report is to complement that data with the results from a survey of vascular plants and to comment on the development of plant communities in the Wildlife Garden. The main objective of the survey was to establish baseline data from which future monitoring and management might be assessed.

The nomenclature follows Stace (1997).

Aims of the survey report

1. To present the results of the baseline survey.
2. To compare species identified and recorded in 1998 with those known to have been planted in 1994/5 and subsequent introductions.
3. To assess and compare the characteristics of each habitat with the characteristics of the lowland habitat it is designed to represent.

Management update (since the previous report)

A new management plan was written in January 1998 highlighting areas/habitats to be developed. As recorded in the previous report (Honey et al. 1998: 20) most of the remaining vestiges of ornamental plantings were removed from the south and west perimeters of the garden in November 1997. This exposed areas to the street but it is hoped that the barrier of mainly hawthorn, together with blackthorn, dog rose and elder will soon provide an effective barrier screening traffic and at the same time providing additional cover for wildlife.

Additional plants have been introduced to supplement the ground flora in the woodland areas, hedgebanks, grassland, heathland, fen and ponds.

In April 1998 the heathland habitat was developed and extended with material kindly donated by Dorset County Council and translocated by Alaska Environmental Contracting. At the time of writing a small area of wet heathland was being created with the help of a financial donation from the Metropolitan Public Gardens Association. Wet heathland turfs have been donated by Dorset County Council and lifted by their Conservation field team with the help of some of our team of regular volunteers (Figure 1).

The woodland area (S18, P1) was reseeded in April 1998 with Emorsgate Woodland wild flower mix with grasses. Although it is generally accepted that autumn sowing produces better results than spring sowing, autumn sowing is not practical in most areas of the garden due to the almost immediate disturbance created by raking off the plane tree leaves from October to December.

Plants collected from Wicken Fen and donated by The National Trust in April 1998 enhanced a small area of the fen (W4). It is hoped further to improve this habitat, south of the boardwalk, by the insertion of a Rawmatt clay liner to increase water retention in the area. This will then be planted with turf collected

from Hickling Nature Reserve and donated by the Norfolk Wildlife Trust. A ditch has also been dug out, to which plants will be added, further to diversify our fen habitat. This is to be completed late spring 1999.



FIGURE 1. Lifting turfs from Slop Bog for replanting in the Wildlife Garden.

Photo: Sue Snell

A new hedge was planted along the north boundary of the meadow (S35) and a small corner, liberated from the ornamental shrub area, was added to the meadow sown with Emorsgate Cricklade mix. The meadow (approximately 220 sq. m.) was managed until September 1997 as an amenity lawn area with surrounding margins of meadow plants dominated by oxeye daisy *Leucanthemum vulgare*, yarrow *Achillea millefolium*, betony *Stachys officinalis* and meadow geranium *Geranium pratense*. The closely mown lawn area was reduced when mowing recommenced in April 1998 and further reduced in July 1998; it is now restricted to a mown path for access through the taller grasses.

Irrigation of the entire site has been a problem and lack of irrigation may account for some plant failures in the early years. A comprehensive, timed irrigation system has now been installed by Waterworks Irrigation UK who kindly donated part of the cost of equipment and installation. The system will enable us to focus on different areas at specified intervals and periods.

Pond management

The main pond was colonized by blanket weed *Cladophora glomerata* which was raked off at intervals, but not during the summer months due to the amount of wildlife that would have been removed with the weed. Barley straw was used in an experiment in 1996 but failed to stem the growth of *Cladophora* (Martin 1999). The reasons for this failure are not clearly understood. The growth of blanket weed, however, is thought to have accelerated as a result of topping up the pond from the mains water supply. An outbreak of water fern *Azolla filiculoides* in February 1998 was successfully halted before it became a problem.

Methods

The survey

Monitoring takes place informally by regular observation. Since January 1998 first and unusual flowerings have been noted as they appear.

Plant recording took place more formally between May and October 1998 in the main habitat areas except the woodland area along the south-west boundary (S18, P1) which was seeded in April 1998. An area of grassland (S26, W2-3) was excluded due to continuing works associated with the borehole as was the site set aside for the new wet heathland (S9) (Figure 2).

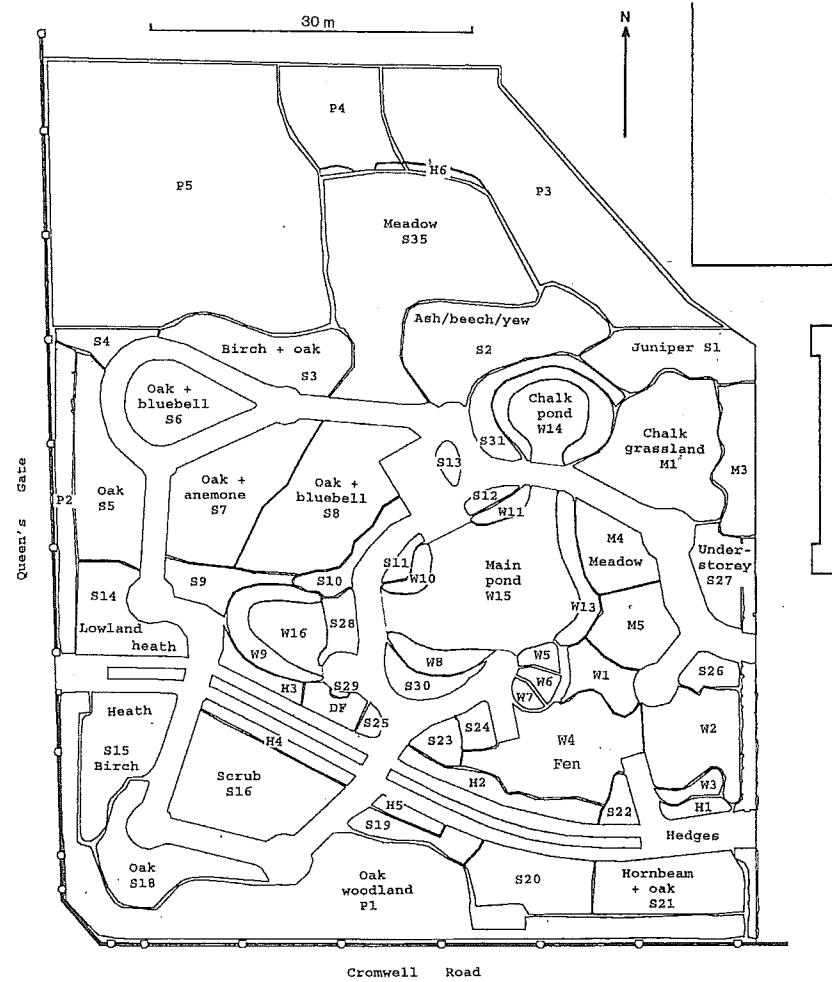


FIGURE 2. Diagram showing the layout of the Wildlife Garden with habitat areas and their codes.

Species were identified and abundance recorded in each plot following the method set up in 1995: 1–10, 11–50, 51–100 and >100. All records were entered on the database previously described (Honey et al. 1998: 22). The survey data were converted and presented using Excel 97 and a BASIC program.

Additional data were collected from the meadow (S35). At the time of the meadow survey (August 1998) there were distinct areas of tall (>8 cm) and short sward. Ten quadrat samples (0.5×0.5 m) were randomly placed in the tall sward and ten in the area of short sward. Quantitative presence values were entered for all vascular species using the Domin scale of cover; average sward height and percentage cover of bare earth were also recorded. Soil analysis was carried out to determine pH of the soil at different locations in the meadow. The data were analysed using the Twinspan classification program. Twinspan classifies the sample quadrats based on the relative similarity of their species composition (see Kent and Coker (1992) for further details). The data were then compared to the National Vegetation Classification (NVC) grassland communities using the TABLEFIT Version 0.0 program.

Planting records

Data were extracted from the 1994/5 planting records, where available, and entered in the database.

Plants which have been introduced since 1995 have been recorded on the database as follows: species, number and origin of plants, date planted and location.

Several habitats within the garden were regularly monitored "during the period 1995–1997; this provided valuable information on species present during those years and will be referred to in the discussion below.

Photography is a particularly useful means of recording the visual development of the landscape and flowering plant communities; a photographic record of the garden's development has been kept since early constructional work in 1902.

The species recorded in the survey were compared with the list of original plantings in the context of habitat communities, noting species which were initially introduced as seeds, plugs or pot plants, species which have come into the garden unaided and remnants of the former, ornamental garden. Due to the different methods of arrival of species it was not possible to compare species abundance in 1995 with abundance in 1998.

A additional tree survey to record sizes of all species was carried out in December 1998.

Results

The total number of vascular plant species identified in the survey area was 324. This included those planted as plugs during 1998 and early 1999 but does not include species added as seeds during that period. The survey results are summarized in Table 1. A list of all vascular plant species, arranged alphabetically by family, and the habitat in which they were found, is contained in Appendix 1. It is not the intention in this report to list all species and species abundance within each plot, though the data will be referred to in the discussion. The complete data are, however, available on request from The Natural History Museum.

There were approximately 110 species of plant known to have been introduced in the initial plantings in 1994/5. This does not include unspecified invaders. Management records indicate that certain species such as groundsel *Senecio vulgaris*, redshank *Persicaria maculosa* and bindweed *Convolvulus arvensis* were a problem early on and had to be removed. However, for the purposes of the report it will be assumed that most of the invaders arrived between the opening and the 1998 survey.

Species which were planted or sown in 1995 but which were not present in 1998 are noted in the discussion below.

TABLE 1. Number of species by habitat type (code numbers included).

Habitat	Code	Number of species
Woodland	S3-8, S10, S15/P1, P1/S18, S19/21, S20	142
Scrub	S1, 16-17	68
Hedgerow	H1-6	86
Grassland	M1/2, M4-5, S35	121
Heathland	S14, 15	25
Wetland (ponds and banks, fen and reedbeds)	W14, 15, 16, W8-11, 13, W12/S31 W1, 4-7, S11, 28, 30	137
Urban	M3	29
Other	DR, P3, 5, S9, S23-25, 27	59
Total number of species, all areas (not sum)		324

Meadow survey

The total number of species recorded in the meadow was 50, 31 of which were recorded in the 20 quadrats.

Twinspan analysis revealed, at the second division, three endgroups relating to the areas distinguished by three main cutting times:

A: former lawn area where close-mowing ceased in autumn 1997.

B: former lawn area where close-mowing ceased in July 1998.

C: taller margins surrounding former mown lawn.

The fourth endgroup related to two samples only, one in tall sward and the other on the edge of the mown path. The positions of the quadrats in the meadow are shown in relation to these endgroups in Figure 3.

The TABLEFIT program was used to compare each of the three main endgroups to the NVC communities (Rodwell 1992). Whilst the neutral grassland sub-community MG7a *Lolium perenne*-*Trifolium repens* was ascribed to the short sward where close-mowing ceased in July 1998, the goodness of fit was poor, at 54 per cent. Goodness of fit was very poor for the other endgroups. Nevertheless, at the time of the survey, the three main stands in our meadow show a greater similarity to NVC community MG7 *Lolium perenne* leys and related grasslands, than to any other NVC grassland community. The soil pH ranged from 6.9 to 7.4.

Discussion

The findings of the survey are discussed in the context of the developing community/habitat they are designed to create. Issues encountered during the development and management of the garden and which are common to all plant communities are discussed separately rather than repeating the issue under each habitat heading. The habitat code numbers, in brackets, relate to those on the plan — Figure 2.

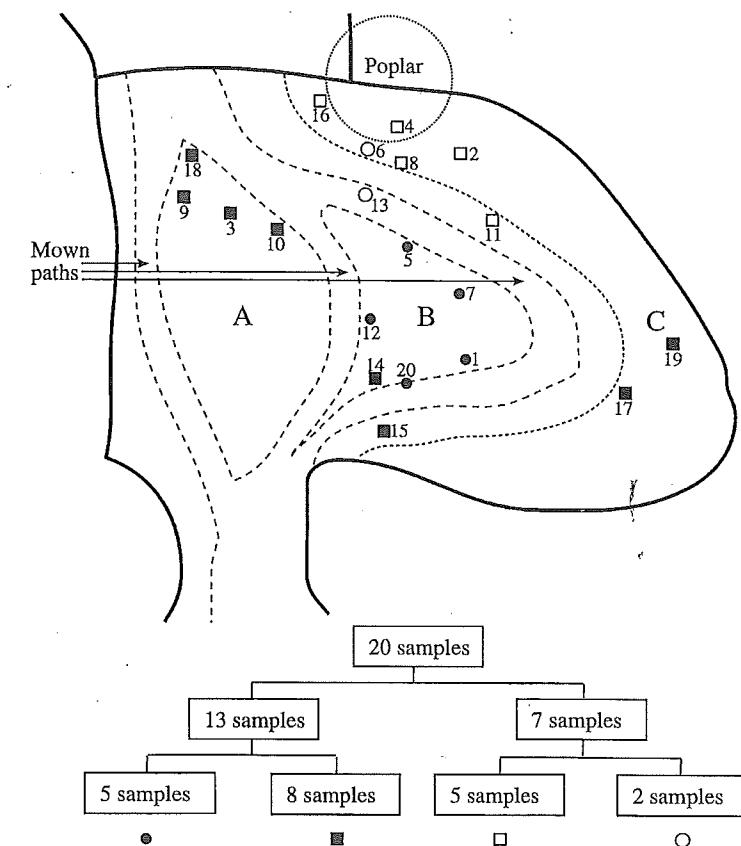


FIGURE 3. Diagram of meadow (S35) showing position of quadrats in relation to Twinspan endgroups. A — mowing ceased in October 1997; B — mowing ceased in July 1998; C — meadow margins (cut twice a year).

Provenance

An essential criterion for native conservation projects is the protection of local genetic variety between and within wild species. The importance of using seeds and plants from native sources is frequently stressed (e.g., Hill 1996, Gilbert and Anderson 1998, Verner 1998). There is evidence, moreover, that native species of local provenance establish, survive and grow better than foreign seed for amenity and conservation planting (Worrell 1992). In 1997 Flora Locale was established to tackle the problem of widespread use of imported plants for restoring native vegetation. In a series of technical guidance notes Flora Locale covers topics such as: definitions of British native-origin plants; putting back wild plants where they belong; codes of practice for collectors, suppliers and growers of wild plant gene stock; and buying native wild flowers, grasses, ferns, trees and shrubs (Flora Locale 1998). A list of specialist growers and suppliers is included in Appendix 2.

The Wildlife Garden was designed to meet this criterion of native provenance of plants and seeds. In spite of this however, several cultivars and non-native

species were inadvertently planted in place of the specified native species. For example, much of the hazel originally planted is more robust and with larger leaves than the native *Corylus avellana*; several Corsican pine *Pinus nigra* appeared in place of Scots pine *Pinus sylvestris*. These are gradually being removed and replaced with plants from nurseries known to raise local or at least nationally native stock. Where they have not yet been replaced, the Museum's Wildlife Garden Guides and the Educational Explainers are able to illustrate this important issue to visitors and school children.

Use of the National Vegetation Classification (NVC)

The NVC allows vegetation to be classified in a standard way and is widely used to compare samples from different sites with standard NVC types, to assess the quality of habitats, and to provide an objective method for surveying. It also provides accessible data as a basis for habitat creation and was used in the design and specification of the Wildlife Garden. However, in a confined space where each habitat is a very small example and obviously vulnerable to edge influence, greater flexibility in creation, together with more intensive management, is needed to stem succession which may be initiated by aggressive community constants. For example, a large proportion of the pond-side meadow (M4/5) has in three years become dominated by cock's-foot *Dactylis glomerata*. In the woodland area the community species, bracken *Pteridium aquilinum*, was not even planted for fear of its invasive habit; similarly *Lemna* species were not added to the ponds. In addition, species that are common to more than one community, as for example, oxeye daisy *Leucanthemum vulgare* in all three grassland communities, need to be controlled in at least one of the meadows in order to maintain distinctiveness between the three types of grassland. Whilst therefore not following each NVC community composition slavishly, it has nevertheless proved invaluable as a guide to plant specification and subsequent management. Reference is made to individual NVC communities in the discussion of habitats below.

Description by habitat

WOODLAND

The principal woodland areas were designed to represent lowland mixed broadleaved woodland based on the NVC community W10 *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus*. The major trees planted in 1994/5 throughout the main woodland areas were, as recommended (Rodwell and Patterson 1995): pedunculate oak *Quercus robur*, sessile oak *Quercus petraea* and silver birch *Betula pendula*, with hornbeam *Carpinus betulus* (S21), ash *Fraxinus excelsior* (S1 and 2) and field maple *Acer campestre* (S2 and 3). In many respects woodland was the most effective habitat to create because of the ready-made canopy offered by the plane trees. Structural diversity was successfully achieved by planting a range of tree sizes: standards, feathereds, whips and transplants. Many of the plants were donated. Additional whips and transplants were planted in subsequent years. Other species, including goat willow *Salix caprea* and wild cherry *Prunus avium*, replaced ornamental shrubs (see Management update, above). All tree species recorded in the survey had established well, in particular the faster growing pioneer species, silver birch and willow. The originally planted silver birch in some areas has reached over six metres in height. In spite of the dry conditions under the canopy of plane trees, few trees have died. Because of the need to restrict the canopy height (to avoid complete overshadowing of the garden), there is little space within the woodland to accommodate much of a shrub layer. Groups of hazel *Corylus avellana*, planted in 1994, fringe the path along the northern woodland area (S7 and 8) which is convenient for demonstrations of traditional hazel coppicing. Similarly, elder *Sambucus nigra*, dog rose *Rosa canina* and guelder rose *Viburnum opulus* are amongst shrubs grouped appropriately. The bramble, so characteristic of oak woodland community, is too competitive to be

contained in the small woodland areas. However, honeysuckle *Lonicera periclymenum* was added to selective plots (S3, 5, 6) and common gorse *Ulex europaeus*, broom *Cytisus scoparius* and bog myrtle *Myrica gale* have been planted to provide the shrub layer in the transition to acid woodland fringing the heathland.

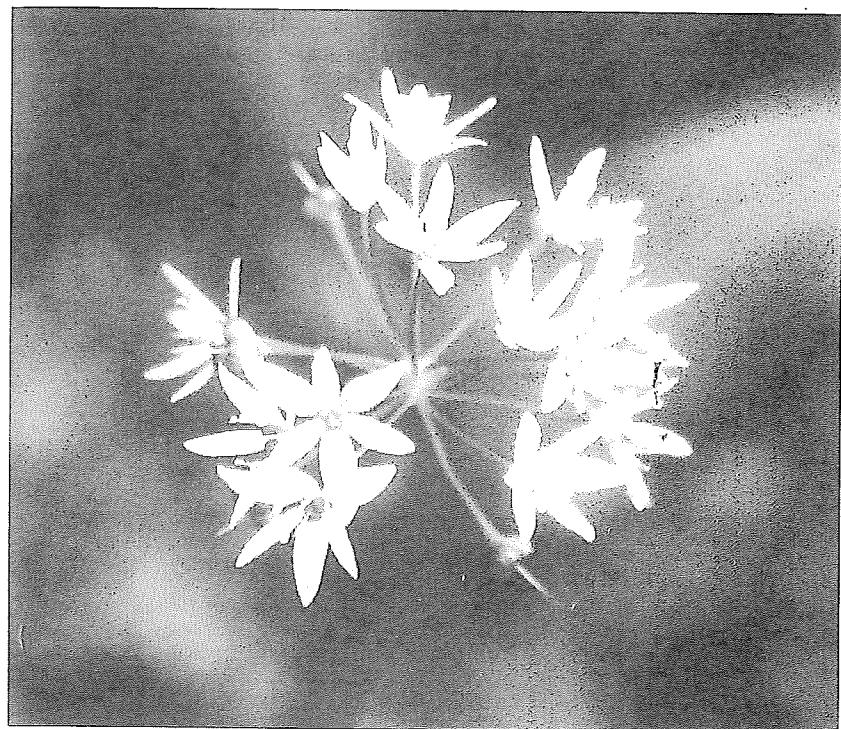


FIGURE 4. Ramsons *Allium ursinum* planted in 1998.

Photo: Sue Snell

The woodland was designed to show distinct ground flora communities and areas S7 and S8 were planted with bluebell *Hyacinthoides non-scripta* and wood anemone *Anemone nemorosa* respectively. An ivy *Hedera helix* sub-community is also represented, though this was reduced in 1997 and replanted with the less invasive and more colourful native bluebells. Primrose *Primula vulgaris*, which was contained in the original seed mix, is particularly abundant along the southern woodland areas. The even more abundant red campion *Silene dioica* was recorded in fifteen plots and a few plants were found flowering for almost twelve months of the year in woodland, hedgerow and many areas fringing the pathways. The development of other woodland ground flora suffers a setback each autumn however, as the disturbance caused by the leaf raking creates opportunities for unwanted weedy species such as fat hen *Chenopodium album* and Canadian fleabane *Conyza canadensis*. Many of the species sown as seeds in 1994 were not recorded in 1998. These included cow parsley *Anthriscus sylvestris*, dog's mercury *Mercurialis perennis*, greater stitchwort *Stellaria holostea*, yellow pimpernel *Lysimachia nemorum*, and sanicle *Sanicula europaea*. The first two of these species were added as plants and rhizomes in woodland areas in March 1998 and November 1998 respectively and both were flowering in April 1999. The third,

greater stitchwort, was planted as plugs in spring 1998 but has not been recorded to date. The woodland mix sown in April 1998 (see Management update, above) contained all five of these species and it will be interesting to note whether or not they appear this spring (1999). Additional ground flora in the form of plants, bulbs and rhizomes (mostly donations) were planted in selected woodland areas (S5, 6, 7, 8, 10) in autumn 1997 and during 1998; these included wood sage *Teucrium scorodonia*, ramsons *Allium ursinum* (Figure 4), celandine *Ranunculus ficaria* and, in the southern woodland areas (S18, 20, 21, P1), lords and ladies *Arum maculatum* and cow parsley *Anthriscus sylvestris*.

Grasses which have performed particularly well from seed include: cock's-foot *Dactylis glomerata*, tufted hair-grass *Deschampsia cespitosa*, Yorkshire fog *Holcus lanatus*, and false brome *Brachypodium sylvaticum*. The attractive wood mellick *Melica uniflora* occurs around the periphery and in woodland and scrub areas (P1, S16, S18), but there are no records of it having been deliberately introduced.

An additional woodland community of beech *Fagus sylvatica* was planted to the north of the chalk pond to which yew *Taxus baccata* has been added. The ground flora under the beech and adjoining ash 'plantation' was dominated by creeping buttercup *Ranunculus repens* and great willowherb *Epilobium hirsutum*, but recently planted dog's mercury *Mercurialis perennis* and ramsons *Allium ursinum* should spread into these areas.

Typical willow carr is represented by groups of willow and alder planted around two of the ponds and these are coppiced to prevent overshading of the water.

SCRUB

There are two areas of scrub which attract a variety of wildlife as well as illustrating the effects of succession. On the predominantly bramble mound (S16), a total of forty-seven species of flowering plants was recorded. This included a diversity of urban colonizers such as butterfly bush *Buddleja davidii*, willowherb species *Epilobium hirsutum*, *E. parviflorum*, *E. roseum* and *E. tetragonum*, Canadian and Guernsey fleabane *Conyza canadensis* and *C. sumatrensis*, as well as colonizers from other habitats in the Wildlife Garden including brooklime *Veronica beccabunga*, hemp agrimony *Eupatorium cannabinum*, and oxeye daisy *Leucanthemum vulgare*. Apart from restraining the bramble from the pathways and removing most of the creeping thistle *Cirsium arvense* and selective seed heads of other species, this area is left unmanaged and should provide some interesting results over the next few years.

The second scrub area (S1), between the chalk grassland and beech *Fagus sylvatica* and yew *Taxus baccata* woodland area, has been closely monitored since 1996 and is largely dominated by cock's-foot *Dactylis glomerata*, though includes juniper *Juniperus communis*, common bird's-foot trefoil *Lotus corniculatus* and red clover *Trifolium pratense* and creeping thistle *Cirsium arvense*. Tor-grass *Brachypodium pinnatum* and some shrub species (e.g., hawthorn *Crataegus monogyna*) are to be planted in spring 1999 to replace much of the cock's-foot in order to represent unmanaged chalk grassland/scrub succession.

HEDGES

Hedgerows are an important element of the British landscape and provide valuable habitats for wildlife. In the overall design of the Wildlife Garden they have been used to fringe the main fire access path and to divide areas to create 'outdoor rooms'. Rather than follow a specific NVC community, the species composition of the hedgerows was taken from those found bordering Mapletree Lane, Writtle Forest, Essex. Although hedge laying was not normally carried out in Essex forests, two of the hedges (H2 and 4) which contain seven and six shrub species respectively have been laid to illustrate the traditional skill of hedge laying in the garden. Two shorter hedges (H3 and 5) are single-species coppiced hedges. One of the laid hedges, (H2) under the canopy of the plane trees, has suffered from drought and is very gappy. Flowering plants on the hedge banks include: false

brome *Brachypodium sylvaticum*, tufted hair-grass *Deschampsia cespitosa*, Yorkshire fog *Holcus lanatus* and red campion *Silene dioica*, primrose *Primula vulgaris*, nettle-leaved bell flower *Campanula trachelium*, garlic mustard *Alliaria petiolata* (Figure 5), tufted and common vetch *Vicia cracca* and *V. sativa* and the more recently added lords and ladies *Arum maculatum*, celandine *Ranunculus ficaria*, cow parsley *Anthriscus sylvestris*, common dog violet *Viola riviniana*, upright hedge parsley *Torilis japonica* and ramsons *Allium ursinum*. It is planned to remove the tufted hair-grass and introduce other species of flowering plant. The most recently planted hedge (H6, January 1998), comprises six shrub species and will provide a screen from the compost area.



FIGURE 5. Garlic mustard *Alliaria petiolata* regenerates well by seed in the hedgerow.

Photo: Derek Adams

GRASSLAND

a. Meadows

In the meadow (S35), the correlation, albeit poor, with the NVC community MG7 was not surprising given the dominance of perennial rye-grass *Lolium perenne* and white clover *Trifolium repens*. Many of the fifty species recorded in the meadow were not typical meadow species and included Canadian and Guernsey fleabane *Conyza canadensis* and *C. sumatrensis*, willowherb *Epilobium* species, teasel *Dipsacus fullonum* and common mallow *Malva sylvestris*, a reflection of the recently disturbed soils. Originally conceived as a meadow surrounding an amenity/teaching lawn, the whole area is now being steered in the direction of neutral grassland (hay meadow) NVC community MG5 *Cynosurus cristatus*—*Centaurea nigra* using well-known methods of diversifying grassland such as adding plants and experimenting with mowing regimes to reduce soil fertility. Flowers which have already performed well are those which tolerate medium to high fertility such as oxeye daisy *Leucanthemum vulgare*, yarrow *Achillea millefolium*, meadow cranesbill *Geranium pratense* and betony *Stachys officinalis*. These were planted on the outer fringes of the meadow as either plugs or pots in the spring of 1995. Community constants, meadow vetchling *Lathyrus pratensis*, common birds-foot trefoil *Lotus corniculatus* and red clover *Trifolium pratense*, were

added as plug plants in June 1998 to provide additional colour. Seeds of yellow rattle *Rhinanthus minor* which is semi-parasitic on most grass species, were sown and raked into bare patches in autumn 1998 with the aim of breaking down areas of rye grass. In spring 1999 additional planting took place of other species characteristic of hay meadows including common knapweed *Centaurea nigra*, meadow and bulbous buttercup *Ranunculus acris* and *R. bulbosus* and grasses such as red fescue *Festuca rubra* and crested dog's-tail *Cynosurus cristatus*. Small pieces of turf were removed before adding the plants from plugs and 5-cm pots (Figure 6).

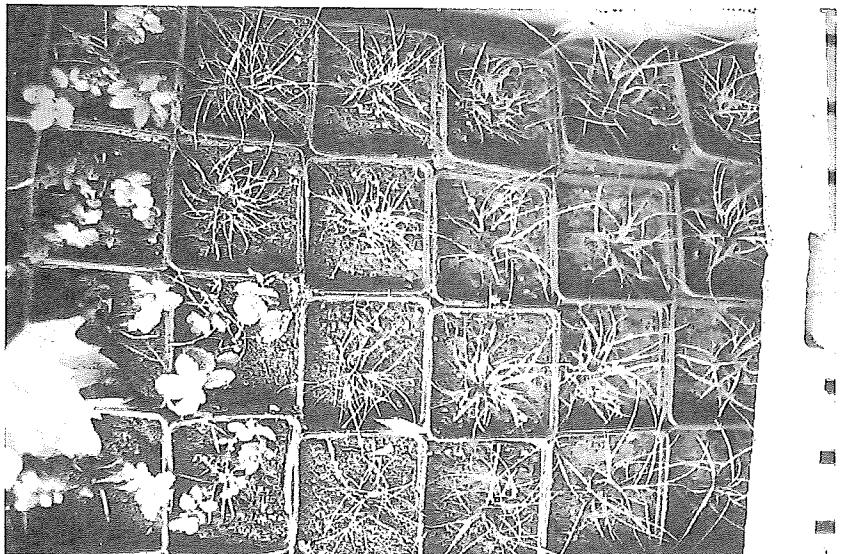


FIGURE 6. Meadow plants from British Wild Flower Plants ready for planting.

Photo: Sue Snell

Quadrat analysis will be carried out regularly to monitor changes, particularly with respect to the NVC.

The second meadow area (M4, M5) extends from the top of the south-facing bank down to the margins of the main pond. This area, treated as two beds in the initial planting scheme, has been monitored each year since 1995; it contains a richer mix of species than the above 'hay meadow'. The area was based originally on mesotrophic grassland NVC community MG4 *Alopecurus pratensis*-*Sanguisorba officinalis*, a community characteristic of traditionally treated alluvial meadow. There are two distinct areas, M4 and M5, sown in 1994 with two different seed mixes. One contained 75 per cent by weight of grasses including 20 per cent of cock's-foot *Dactylis glomerata*; the other seed mix contained 55 per cent by weight of grasses (plus 10 per cent rushes) including 15 per cent red fescue *Festuca rubra* and 15 per cent meadow foxtail *Alopecurus pratensis*. In the former, cock's-foot is the dominant plant, with some common bird's-foot trefoil *Lotus corniculatus* and bladder campion *Silene vulgaris*. In the latter area, although red fescue *Festuca rubra* is dominant, this is not to the exclusion of other grasses such as crested dog's-tail, and there are thirty-five species of broadleaved plants. Ribwort plantain *Plantago lanceolata* is locally dominant (>100 plants). This is consistent with the NVC description 'of rosette species including *Leontodon autumnalis*, *L. hispidus*, *Bellis perennis*, and *Plantago lanceolata* as being prominent in the short sward' (Rodwell 1992). The prominence of ribwort plantain here, however, is to the exclusion of most of the other rosette species in spite of efforts

to impede its progress. This may be due both to the high percentage in the original seed mix (5 per cent) as well as the considerable regenerative capacity of this species. Other species recorded, which are also present in NVC community MG5 include small amounts of quaking-grass *Briza media*, meadow buttercup *Ranunculus acris*, common bird's-foot trefoil, selfheal *Prunella vulgaris*, and meadowsweet *Filipendula vulgaris*. One large fennel *Foeniculum vulgare* plant has been recorded since 1997. Several species have disappeared since 1997 including devil's-bit scabious *Succisa pratensis* which was planted as well as seeded into the area in 1995 and skullcap *Scutellaria galericulata*, recorded in 1997. Some fine tuning is required to help encourage more of the community flowers, and plants of cuckoo flower *Cardamine pratensis*, great burnet *Sanguisorba officinalis* meadow buttercup, red clover and additional meadowsweet have been added in gaps created by weeding out some of the ribwort plantain and ragwort *Senecio jacobaea*. Since cock's-foot spreads mainly by seed, more-frequent mowing is needed to target that particular species.

b. Chalk grassland

The area representing chalk downland (M1) was formed from chalk substrate and topsoil donated by the Hursley Estate from an old chalk quarry near Winchester in Hampshire. The chalk grassland, an area of approximately 300 sq m, was designed to emulate NVC chalk grassland community CG2 *Avenula pratensis*-*Festuca ovina*. The number of species recorded in the survey was seventy-two. This compares with twenty-two species contained in the original seed mix with additional species planted as plugs and six shrub species. The dominant species recorded were yarrow *Achillea millefolium*, rough hawkbit *Leontodon hispidus*, oxeye daisy and red fescue, perennial ryegrass *Lolium perenne* at >100 plants, with lady's bedstraw *Galium verum*, wild marjoram *Origanum vulgare*, ribwort plantain *Plantago lanceolata*, small scabious *Scabiosa columbaria*, common bent *Agrostis capillaris* and hedge bedstraw *Galium mollugo* occurring at between fifty to a hundred plants. Salad burnet *Sanguisorba minor* and kidney vetch *Anthyllis vulneraria* are locally abundant. The abundance of perennial ryegrass and white clover *Trifolium repens* at the base of the 'downland' is probably due to the spread of these species from the original turf placed along all path edges. A number of non-typical chalk grassland plants have exploited bare areas on the shady north and east sides of the slope. These include buddleia *Buddleja davidii* from the adjoining urban habitat, creeping thistle *Cirsium arvense*, common nettle *Urtica dioica* and coltsfoot *Tussilago farfara*. Plug plants of thyme *Thymus polytrichus* and glaucous sedge *Carex flacca* were added in December 1997; quaking-grass *Briza media*, dwarf thistle *Cirsium acaule* and rock rose *Helianthemum nummularium* were planted the following spring/summer. More recently, additional plants of sheep's fescue *Festuca ovina* have been added together with meadow oat-grass *Helictotrichon pratense* and yellow wort *Blackstonia perfoliata*. Now that the most characteristic species of the community are included appropriate management is needed to ensure their survival. Sheep grazing is being considered.

HEATHLAND

The heathland area had originally been planted with heather *Calluna vulgaris*, bell heather *Erica cinerea*, common gorse *Ulex europaeus* and both Scots pine *Pinus sylvestris* and Corsican pine *Pinus nigra* (see note on Provenance, above). By the end of 1997 the number of plants was insufficient to make much impact and the area was targeted for restoration in early 1998. The most effective method for the reconstruction of heathland has been shown to be obtained by translocation of turfs from existing heathland to the new site (Pyewell, Webb and Putwain 1995). We were fortunate enough to have the benefit of the advice of Nigel Webb (ITE) and Phil Sterling (County ecologist Dorset County Council) together with a donor site and the expertise and machinery of Will Bond and his

team, Alaska Environmental Contracting. The donor site was Merritown Heath in east Dorset. The heathland area was created by scraping off a layer of topsoil and replacing this with ten tonnes of heathland subsoil and placing closely fitting turfs (1.2×2.4 m) to form a continuous 60 sq m of heath (Figure 7). The bell heather was the first to flower (June) followed by the heather and dwarf gorse. The heathland community corresponds with NVC H3 *Agrostis curtisii-Ulex minor*. Seeds of bristle bent *Agrostis curtisii* have since been added to the surrounding areas to complete the community. The heathland plot is exposed to a particularly hostile environment: next to one of the most traffic-polluted road junctions in London, in partial shade of London plane trees, and at some point in the winter months covered in plane-tree leaves. It will be interesting to see how long it survives. We intend to demonstrate heathland management in one form once it survives another season's growth; some areas will be cut, but probably not burned! In the meantime, on Merritown Heath, sand lizards have been reported taking advantage of the resulting gaps created by the removal of the turfs and solitary wasps have also taken up residence in the bare sandy areas.



FIGURE 7. Restoration of the heathland in April 1998.

Photo: Caroline Ware

WETLAND AREAS

Wetland areas are represented by three ponds, marginal and bank vegetation along the pond edges as well as an area of fen and reedbed. A wet heathland area has been added very recently (see Management update, above).

a. Pond: aquatic and marginal species

The three ponds previously described (Honey et al. 1998: 20) are intended to represent distinct types of pond. The chalk pond (W14) which has a pH of 8.0, contains large quantities (>100) of spiked water-milfoil *Myriophyllum spicatum* as well as curled pondweed *Potamogeton crispus* which is thought to have been introduced accidentally with other aquatics. There were seven emergent species including bog bean *Menyanthes trifoliata* (which should, more appropriately be found around the 'acid' pond (W16)). All aquatics and emergents have been recorded annually since 1996. The main pond (W15) which has a pH of 7.5, contained large amounts of Canadian pondweed *Elodea canadensis* as well as some

rigid hornwort *Ceratophyllum demersum*, curled pondweed and white water lily *Nymphaea alba*. As already indicated above, blanket weed is a problem in this pond. Regular raking out of blanket weed has inevitably included removal of many aquatic plants, i.e., those recorded in 1996 but no longer present in 1998. In future, raking will cease and additional aquatic plants are to be added in the hope that they will out compete the blanket weed. Common duckweed *Lemna minor* has found its way into the main and top pond (W16). The top pond, representing more acidic conditions, has suffered several setbacks due to a leak which proved difficult to locate. It has therefore been subjected to a large quantity of mains water and the recorded pH was 7.4. Two acid-loving species added in July 1998, quillwort *Isoetes lacustris* and floating water plantain *Luronium natans* have not survived. The one abundant aquatic recorded in the top pond (W16) was curled pondweed. Previous records (1996) show rigid hornwort and spiked water-milfoil but these have not survived drying out (the pond was emptied during the search for the leak). Emergent vegetation in the top pond included bog bean and water horsetail *Equisetum fluviatile*.

Marginal and bank vegetation common to all three ponds included figworts *Scrophularia nodosa* and *S. auriculata*, purple loosestrife *Lythrum salicaria*, and wild angelica *Angelica sylvestris*. Marsh marigold *Caltha palustris*, brooklime *Veronica beccabunga*, water mint *Mentha aquatica*, water forget-me-not *Myosotis scorpioides* and yellow iris *Iris pseudacorus* were all common to the chalk and main pond. Rushes and sedges were represented by soft and hard rush *Juncus effusus* and *J. inflexus* around all three ponds and greater tussock sedge *Carex paniculata*, tufted sedge *Carex elata* and greater pond-sedge *Carex riparia* around the main pond. The less desirable and invasive galingale *Cyperus longus* was also abundant around the main pond. The vegetation has produced sufficient cover to provide a nesting area for a mallard.

b. Fen

The fen area (W4) contained a total of thirty-five species, many of which were introduced with a piece of fen vegetation donated by the RSPB and brought from Strumpshaw Fen Nature Reserve in March 1997. The scrapes created by the removal of these plants were for the benefit of the bitterns on the nature reserve. The plant species included common reed *Phragmites australis*, marsh fern *Thelypteris palustris*, fen nettle *Urtica galeopsifolia* and common fleabane *Pulicaria dysenterica* and tufted sedge *Carex elata*. Other species in the fen area include the abundant hemp agrimony *Eupatorium cannabinum*, common meadow-rue *Thalictrum flavum*, and marsh marigold *Caltha palustris*, all continuously recorded since 1996. Additional species such as marsh pennywort *Hydrocotyle vulgaris*, great fen-sedge *Cladium mariscus* and marsh thistle *Cirsium palustre* were brought in from Wicken Fen in April 1998. Several clumps of tufted hair-grass *Deschampsia cespitosa* look striking but are inappropriate in this fen community and will be transferred to woodland areas to make room for additional clay liner which will accommodate more fen vegetation.

c. Reedbed

The reedbed (W5-7), planted as a pure stand of common reed *Phragmites australis*, is frequently weeded of opportunists quick to exploit gaps around the developing reed. Species which have attempted to colonize the bed include marsh marigold *Caltha palustris*, water figwort *Scrophularia auriculata*, great willowherb *Epilobium hirsutum*, which is abundant around the edges, and monkey flower *Mimulus guttatus*.

URBAN HABITAT, ACCIDENTAL ARRIVALS AND CULTIVARS

The wildlife value of urban habitats in their own right is increasingly recognized and, in some instances fiercely defended, as at Gargoyle Wharf in London (Frith 1996). An urban habitat area was allocated a small space on the

north-east fringe of the garden (M3) in which twenty-nine species were recorded. Species which commonly form urban plant communities are not easily contained however and sometimes compete for space in the native habitat areas. Many have colonized the bare ground remaining after the autumn leaf rake; these include species of Chenopodiaceae: *Atriplex prostrata*, *A. patula*, *Chenopodium album*, *C. polyspermum* and *C. hybridum*, willowherb *Epilobium* species, *Chamerion angustifolium*, *Conyza canadensis* and *C. sumatrensis* and groundsel *Senecio vulgaris*.

Other species which may be considered weeds in most gardens are constituents of NVC communities and valuable food plants, but may have to be controlled by weeding before they become too invasive. These include common nettle *Urtica dioica*, creeping thistle *Cirsium arvense* and spear thistle *Cirsium vulgare*, ribwort plantain *Plantago lanceolata*, common ragwort *Senecio jacobaea* and hedge bindweed *Calystegia sepium*. Accidental arrivals included hoary mustard *Hirschfeldia incana* and Guernsey fleabane *Conyza sumatrensis*, plants characteristic of local habitats such as nearby parks 'spreading through London and beyond' (Wiltshire 1994: 45). A total of thirty-four so-called weedy and alien species was recorded in the garden overall in 1998.

Several cultivars or garden escapes have found their way into the garden possibly attached to other plant material. These include golden rod *Solidago canadensis*, dame's violet *Hesperis matronalis*, fox and cubs *Pilosella aurantiacum*, and Spanish bluebell *Hyacinthoides hispanica*. Other cultivars, mainly shrubs and trees, are relics of the previous garden that continue to provide good bird cover, although the lilac at the edge of the meadow looks somewhat out of place. Shrub species include mock orange *Philadelphus coronarius*, spotted laurel *Aucuba japonica*, shiny privet *Ligustrum lucidum*, holly *Ilex aquifolium* and laburnum *Laburnum anagyroides*. Mature trees include London plane *Platanus × hispanica*, Lombardy poplar *Populus* cv, small-leaved lime *Tilia cordata* and horse chestnut *Aesculus hippocastanum*.

Problems of edge influence: strategies of individual species

Encroachment of rapidly spreading species threatens the identity of the individual habitats we are trying to represent. Not all of the species are natural colonizers or accidental arrivals however. The most commonly occurring species together with their method of introduction, where known, are shown in Table 2.

TABLE 2. Species occurring in fifteen or more plots within the Wildlife Garden.

Species	Number of plots in which species occur	Method of introduction
<i>Plantago lanceolata</i>	28	Seed mix
<i>Holcus lanatus</i>	25	Seed mix
<i>Dipsacus fullonum</i>	24	Plants
<i>Achillea millefolium</i>	23	Plants
<i>Urtica dioica</i>	22	Accidental arrival/seed bank
<i>Galium mollugo</i>	22	Seed mix and plants
<i>Ranunculus repens</i>	21	Seed mix
<i>Leucanthemum vulgare</i>	20	Seed mix and plants
<i>Prunella vulgaris</i>	19	Seed mix
<i>Taraxacum officinale</i> agg.	18	Accidental arrival/seed bank
<i>Agrostis capillaris</i>	18	Seed mix
<i>Epilobium hirsutum</i>	15	Accidental arrival/seed bank
<i>Silene dioica</i>	15	Seed mix and plants
<i>Potentilla reptans</i>	15	Accidental arrival/seed bank
<i>Cirsium arvense</i>	15	Accidental arrival/seed bank
<i>Agrostis stolonifera</i>	15	Seed mix

All but the most vigorous species, common nettle *Urtica dioica*, creeping thistle *Cirsium arvense*, great willowherb *Epilobium hirsutum*, creeping cinquefoil *Potentilla reptans* and dandelion *Taraxacum* species were introduced in seed mixes and as plug plants. The presence of competitors rather than the quickly growing/spreading ruderal species is due to the relative ease of weeding out the latter, e.g., groundsel *Senecio vulgaris*, knotgrass *Polygonum aviculare*, compared to the former with their vigorous root system. Many will have been introduced during construction and soil movement within the garden.

Some of the seed mixes available are designed for the creation and enhancement of habitats covering a greater area than ours; at the same time our wildlife garden, at one acre, is larger than many domestic gardens, certainly in urban areas. Lessons may be learnt by studying the performance of species which have spread quickly across the garden, such as ribwort plantain *Plantago lanceolata* and hedge bedstraw *Galium mollugo*, and appropriate adjustments made to wildflower seed mixes for small gardens. Some of these species, including ribwort plantain, would anyway naturally colonize the area and should be deliberately introduced with caution or maybe not at all.

Soil fertility is a problem in most gardens and is illustrated in some of the habitats above. Plants which are happy with high fertility have performed well, e.g., oxeye daisy *Leucanthemum vulgare*, red campion *Silene dioica*, selfheal *Prunella vulgaris* and teasel *Dipsacus fullonum* (Figure 8), whilst those plants with a preference for low fertility, such as harebell *Campanula rotundifolia*, are clinging tenaciously to the edges. Other less-desirable indicators of soil fertility are common nettle and creeping buttercup *Ranunculus repens*, the latter perhaps needlessly deliberately introduced!



FIGURE 8. Wild teasel *Dipsacus fullonum* has spread rapidly across the garden, and provides food for bumblebees, brimstone butterflies and goldfinches.
Photo: Sue Snell

Conclusion

The survey has highlighted some of the problems encountered in developing and maintaining the distinctiveness of several different habitat types, all of which naturally have very specific requirements of soil, water, climate and other environmental factors. It is too early to gauge fully the response to different techniques of habitat creation, i.e., seeds, plugs, or fragments of vegetation. However, the latter method does have considerable advantage where there are factors which are difficult to replicate such as soil requirements. Regular monitoring of vascular plants in the Wildlife Garden is an essential management tool and provides an unusual learning ground for people to identify and study plants which occur naturally in habitats throughout lowland Britain in addition to the fauna they support.

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APPENDIX 1

Species and habitat code numbers in which they occur.

ACERACEAE

<i>Acer campestre</i>	field maple	H2, H4, S2
<i>Acer pseudoplatanus</i>	sycamore	S5

ALISMATACEAE

<i>Alisma plantago-aquatica</i>	water plantain	W8, W10, W13
<i>Luronium natans</i>	floating water plantain	W16
<i>Sagittaria sagittifolia</i>	arrowhead	W15

APIACEAE

<i>Aegopodium podagraria</i>	ground-elder	H5
<i>Aethusa cynapium</i>	fool's parsley	M5, S3, S5, S7
<i>Angelica sylvestris</i>	wild angelica	S9, W4, W8, W9, W11, W13, W14
<i>Anthriscus caucalis</i>	bur parsley	H2
<i>Anthriscus sylvestris</i>	cow parsley	H4, H5
<i>Berula erecta</i>	lesser water parsnip	W8, W14, W15
<i>Cicuta virosa</i>	cowbane	W13
<i>Daucus carota</i> ssp.	wild carrot	H3, M1, M3, M4, S1, S3, S5, S8, S10, S11, S30, S35
<i>Foeniculum vulgare</i>	fennel	M4
<i>Heracleum sphondylium</i>	hogweed	H4, H5, M1, M4, M5, S3, S5, S8, S10, S35, W8, W13
<i>Hydrocotyle vulgaris</i>	marsh pennywort	W4
<i>Peucedanum palustre</i>	milk parsley	W13
<i>Sison amomum</i>	stone parsley	M5
<i>Torilis japonica</i>	upright hedge parsley	H2, H4

AQUIFOLIACEAE

<i>Ilex aquifolium</i>	holly	H2, M3, S2, S3, S5, S6, S7, S8, S10, S21, S35, W1
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ARACEAE

<i>Arum maculatum</i>	lords and ladies	H5
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ARALIACEAE

<i>Hedera helix</i>	ivy	H1, H4, M1, M3, S6, S9, S10, S16, S21, S27
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ASPLENIACEAE

<i>Phyllitis scolopendrium</i>	hart's tongue	S16, S18, S19
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ASTERACEAE		
<i>Achillea millefolium</i>	yarrow	H2, H4, M1, M3, M4, M5, S1, S2, S3, S5, S6, S9, S10, S11, S24, S27, S28, S30, S35, W8, W9, W11, W12
<i>Arctium minus</i>	lesser burdock	M4, S2
<i>Artemisia vulgaris</i>	mugwort	M1, M3, M4, M5, S2, S21, S27, W1, W4, W10, W12, W13
<i>Bellis perennis</i>	daisy	S35
<i>Centaurea nigra</i>	common knapweed	M1, S11
<i>Centaurea scabiosa</i>	greater knapweed	M1
<i>Cirsium acaule</i>	dwarf thistle	M1
<i>Cirsium arvense</i>	creeping thistle	M1, M4, M5, S1, S2, S5, S7, S8, S11, W4, W8, W9, W11, W12, W13
<i>Cirsium palustre</i>	marsh thistle	W4
<i>Cirsium vulgare</i>	spear thistle	H2, S5, S35
<i>Conyza canadensis</i>	Canadian fleabane	M1, S3, S5, S16, S21
<i>Conyza sumatrensis</i>	Guernsey fleabane	S3, S5, S7, S11, S16, S28, S35, W11
<i>Crepis biennis</i>	rough hawk's-beard	H4
<i>Eupatorium cannabinum</i>	hemp agrimony	H5, S3, S16, S24, S28, S30, W1, W4
<i>Hypochaeris radicata</i>	cat's-ear	M4, S35
<i>Lactuca serriola</i>	prickly lettuce	S16
<i>Lapsana communis</i>	nipplewort	H4, S3, S5, S6, S23, S24
<i>Leontodon autumnalis</i>	autumn hawkbit	S2
<i>Leontodon hispidus</i>	rough hawkbit	M1, M3, S1, S2, S10
<i>Leucanthemum vulgare</i>	oxeye daisy	H2, H3, H4, H5, M1, M4, S1, S2, S3, S6, S8, S10, S16, S21, S23, S24, S30, S35, W8, W12
<i>Matricaria discoidea</i>	pineappleweed	H3, M1, M3, M4, S1, S3, S5, S8, S10
<i>Picris echioides</i>	bristly oxtongue	S27, S35, W9, W12, W13
<i>Picris hieracioides</i>	hawkweed oxtongue	S35
<i>Pilosella aurantiaca</i>	fox-and-cubs	M4, S30
<i>Pulicaria dysenterica</i>	common fleabane	W4
<i>Senecio jacobaea</i>	common ragwort	H2, M4, S1, S2, S3, S35, W8, W12, W13
<i>Senecio vulgaris</i>	groundsel	M3, S6, S16
<i>Solidago canadensis</i>	Canadian goldenrod	S23
<i>Sonchus arvensis</i>	perennial sow-thistle	M1
<i>Sonchus oleraceus</i>	smooth sow-thistle	S1, S5, S35
<i>Tanacetum parthenium</i>	feverfew	H3
<i>Tanacetum vulgare</i>	tansy	M1
<i>Taraxacum officinale</i> agg.	dandelion	H2, H3, H5, M1, M4, M5, S1, S2, S5, S7, S14, S16, S21, S24, S30, S35, W1, W4
<i>Taraxacum pectinatiforme</i>	dandelion	S16
<i>Tripleurospermum inodorum</i>	scentless mayweed	S23, S35, W8
<i>Tussilago farfara</i>	coltsfoot	H2, M1, S16, S23, W4
BERBERIDACEAE		
<i>Berberis gagnepainii</i>	Gagnepain's barberry	P5
<i>Mahonia aquifolium</i>	Oregon-grape	P3
BETULACEAE		
<i>Alnus glutinosa</i>	alder	M4, S23, S24
<i>Betula pendula</i>	silver birch	S3, S5, S6, S7, S14, S15
<i>Carpinus betulus</i>	hornbeam	H1, H4, S21
<i>Corylus avellana</i>	hazel	H1, H2, H4, H5, M1, S2, S3, S5, S7, S8, S24

BORAGINACEAE		
<i>Echium vulgare</i>	viper's-bugloss	H3, M1, S11
<i>Myosotis scorpioides</i>	water forget-me-not	W8, W10, W11, W12, W13
<i>Pentaglottis sempervirens</i>	green alkanet	H3, S18
<i>Symphytum officinale</i>	common comfrey	H2, W4
BRASSICACEAE		
<i>Alliaria petiolata</i>	garlic mustard	H2, H4, H5, S21
<i>Arabidopsis thaliana</i>	thale cress	M3
<i>Capsella bursa-pastoris</i>	shepherd's purse	M3, S9
<i>Cardamine flexuosa</i>	wavy bitter cress	S6, W4
<i>Cardamine pratensis</i>	cuckoo flower	M4
<i>Coronopus didymus</i>	lesser swine cress	M1, M3
<i>Hesperis matronalis</i>	dame's violet	S16
<i>Hirschfeldia incana</i>	hoary mustard	H2, H3, S5, S12
<i>Raphanus raphanistrum</i>	wild radish	S16
<i>Sinapis arvensis</i>	charlock	S35
<i>Sisymbrium officinale</i>	hedge mustard	M3, S2
BUDDLEJACEAE		
<i>Buddleja davidii</i>	butterfly bush	M1, S1, S16, S27, S30
BUTOMACEAE		
<i>Butomus umbellatus</i>	flowering rush	W10, W13
BUXACEAE		
<i>Buxus sempervirens</i>	box	P5
CAMPANULACEAE		
<i>Campanula rotundifolia</i>	harebell	M4, S11, S30, W9
<i>Campanula trachelium</i>	nettle-leaved bellflower	H2, S21
CAPRIFOLIACEAE		
<i>Leycesteria formosa</i>	Himalayan honeysuckle	S16
<i>Lonicera periclymenum</i>	honeysuckle	H2, H4, S3, S5, S6, S16
<i>Sambucus nigra</i>	alder	M4, S3, S5
<i>Symphoricarpos albus</i>	snowberry	P3
<i>Viburnum opulus</i>	guelder rose	S15, S27
CARYOPHYLLACEAE		
<i>Cerastium fontanum</i> ssp.	common mouse-ear	S35
<i>Lychnis flos-cuculi</i>	ragged robin	M4, S35, W8, W13
<i>Silene latifolia</i>	white campion	S8
<i>Silene dioica</i>	red campion	H1, H2, H3, H4, H5, S2, S3, S5, S7, S8, S10, S16, S21, S23, S30
<i>Silene vulgaris</i>	bladder campion	M4, M5, W8
<i>Stellaria graminea</i>	lesser stitchwort	S16
<i>Stellaria holostea</i>	greater stitchwort	P1, S19, S21
<i>Stellaria media</i>	common chickweed	H5, S6, S14
CELASTRACEAE		
<i>Euonymus europaeus</i>	spindle	M1, M4, M5, S30
<i>Euonymus japonicus</i>	evergreen spindle	P5
CERATOPHYLLACEAE		
<i>Ceratophyllum demersum</i>	rigid hornwort	W15

CHENOPodiACEAE		
<i>Atriplex patula</i>	common orache	H5, S5
<i>Atriplex prostrata</i>	spear-leaved orache	S16
<i>Chenopodium album</i>	fat hen	S8, S10, S21
<i>Chenopodium hybridum</i>	maple-leaved goosefoot	S6
<i>Chenopodium polyspermum</i>	many-seeded goosefoot	S5
CISTACEAE		
<i>Helianthemum nummularium</i>	common rock-rose	M1
CLUSIACEAE		
<i>Hypericum hirsutum</i>	hairy St John's-wort	S5, S8
<i>Hypericum perforatum</i>	perforate St John's-wort	M1, S2, S7, W4
<i>Hypericum tetrapterum</i>	square-stalked St John's-wort	S35
CONVOLVULACEAE		
<i>Calystegia sepium</i>	hedge bindweed	H5, S1, S2, S6, S7, S8, S16, W13
<i>Calystegia silvatica</i>	large bindweed	H2, H4, W9
<i>Convolvulus arvensis</i>	field bindweed	M3, S3, S14, W8, W13
CORNACEAE		
<i>Aucuba japonica</i>	spotted laurel	P5
<i>Cornus sanguinea</i>	dogwood	S3, S23, W8, W12
CUPRESSACEAE		
<i>Juniperus communis</i>	common juniper	M1, S1
CYPERACEAE		
<i>Carex acutiformis</i>	lesser pond-sedge	W8
<i>Carex divisa</i>	grey sedge	W9
<i>Carex elata</i>	tufted sedge	W13, W4
<i>Carex flacca</i>	glaucous sedge	M1
<i>Carex pendula</i>	pendulous sedge	S5, W4
<i>Carex riparia</i>	greater pond-sedge	W8, W13
<i>Carex sylvatica</i>	wood-sedge	S18
<i>Cladium mariscus</i>	great fen-sedge	W4
<i>Cyperus longus</i>	galingale	W8, W13
<i>Eleocharis fluitans</i>	floating club-rush	W15
<i>Scirpus lacustris</i>	common club-rush	W15
DENNSTAEDTIACEAE		
<i>Pteridium aquilinum</i>	bracken	S5
DIPSACACEAE		
<i>Dipsacus fullonum</i>	wild teasel	H2, H3, H5, M1, M4, M5, S1, S2, S3, S5, S6, S8, S10, S11, S21, S23, S24, S30, S35, W1, W8, W9, W12, W13
<i>Knautia arvensis</i>	field scabious	M1, S1, S21, S35
<i>Scabiosa columbaria</i>	small scabious	H3, M1, M4, S2, S23, S30
DRYOPTERIDACEAE		
<i>Dryopteris dilatata</i>	broad buckler fern	S18
<i>Dryopteris filix-mas</i>	male fern	M1, S16
EQUISETACEAE		
<i>Equisetum arvense</i>	field horsetail	S18, W4
<i>Equisetum fluviatile</i>	water horsetail	W9

HYDROCHARITACEAE		
<i>Hydrocharis morsus-ranae</i>	frogbit	W15
IRIDACEAE		
<i>Iris pseudacorus</i>	yellow iris	W4, W8, W9, W10, W11, W12, W13
ISOETACEAE		
<i>Isoetes lacustris</i>	quillwort	W16
JUNCACEAE		
<i>Juncus effusus</i>	soft rush	W4, W9
<i>Juncus inflexus</i>	hard rush	W9
LAMIACEAE		
<i>Ajuga reptans</i>	bugle	S3, S6
<i>Ballota nigra</i>	black horehound	H5, M3, S1, S3, S5, S10, S11, S14, S15, S24, S28, W1, W9
<i>Clinopodium vulgare</i>	wild basil	M1
<i>Glechoma hederacea</i>	ground ivy	H4, M3, S1, S5, S8, S21, S27
<i>Lamiastrum galeobdolon</i>	yellow archangel	H5, S6, S10
<i>Lamium album</i>	white dead nettle	M1, S16
<i>Lamium purpureum</i>	red dead nettle	S2
<i>Lycopus europaeus</i>	gipsywort	W4, W8, W11, W12
<i>Mentha aquatica</i>	water mint	W4, W8, W11, W12
<i>Origanum vulgare</i>	wild majoram	M1, M3, S1, S2
<i>Prunella vulgaris</i>	selfheal	H2, H3, M1, M4, M5, S1, S2, S3, S6, S11, S14, S21, S23, S30, S35, W1, W9, W12, W13
LEMNACEAE		
<i>Lemna minor</i>	common duckweed	W15, W16
LILIACEAE		
<i>Allium ursinum</i>	ramsons	H2, S2, S3, S19
<i>Hyacinthoides hispanica</i>	Spanish bluebell	P1
<i>Hyacinthoides non-scripta</i>	bluebell	S3, S6
<i>Narcissus pseudonarcissus</i>	daffodil	S10
LYTHRACEAE		
<i>Lythrum salicaria</i>	purple loosestrife	S23, W4, W8, W9, W11, W12, W13
MALVACEAE		
<i>Malva moschata</i>	musk-mallow	M4, S35
<i>Malva neglecta</i>	dwarf mallow	S1
<i>Malva sylvestris</i>	common mallow	H2, M1, M3, M4, M5, S2, S11, S35, W1, W9, W12
MENYANTHACEAE		
<i>Menyanthes trifoliata</i>	bogbean	W8, W9, W12
NYMPHAEACEAE		
<i>Nymphaea alba</i>	white water-lily	W15

OLEACEAE		
<i>Fraxinus excelsior</i>	ash	S1, S2, S5, S7
<i>Ligustrum lucidum</i>	shiny privet	P1
<i>Ligustrum ovalifolium</i>	garden privet	P1, P3, P5
<i>Ligustrum vulgare</i>	wild privet	M1
<i>Syringa vulgaris</i>	lilac	P1, P3
ONAGRACEAE		
<i>Chamerion angustifolium</i>	rosebay willowherb	H3, H4, H5, M1, S8, S21
<i>Circae laetevirens</i>	enchanter's nightshade	H5, S2, S3, S7, S24
<i>Epilobium hirsutum</i>	great willowherb	H5, S2, S3, S7, S8, S16, S28, S30, W4, W8, W9, W10, W11, W12, W13
<i>Epilobium parviflorum</i>	hoary willowherb	S16
<i>Epilobium roseum</i>	pale willowherb	S5, S14, S16, S24, S28, S30
<i>Epilobium tetragonum</i>	square-stalked willowherb	S16
<i>Oenothera biennis</i>	common evening primrose	S6
PINACEAE		
<i>Pinus sylvestris</i>	Scots pine	S14, S15
PLANTAGINACEAE		
<i>Plantago lanceolata</i>	ribwort plantain	H2, H3, H4, H5, M1, M3, M4, M5, S1, S2, S5, S6, S7, S8, S10, S11, S14, S23, S27, S30, S35, W1, W4, W8, W9, W10, W12, W13
<i>Plantago major</i>	greater plantain	M1, M4, S3, S5, S6, S7, S14, S24, S30, S35
PLATANACEAE		
<i>Platanus × hispanica</i>	London plane	P1, P5, S4, S5, S15, S20, S21
POACEAE		
<i>Agrostis capillaris</i>	common bent	H2, H3, M1, M4, M5, S1, S2, S5, S8, S10, S11, S16, S23, S24, S30, S35, W1, W13
<i>Agrostis curtisii</i>	bristle bent	S14
<i>Agrostis stolonifera</i>	creeping bent	M1, M3, M4, P5, S2, S5, S7, S8, S16, S21, S27, S35, W11, W12, W13
<i>Anthoxanthum odoratum</i>	sweet vernal grass	M4, S2, S35
<i>Arrhenatherum elatius</i>	false oat grass	M1, S10, S11
<i>Brachypodium sylvaticum</i>	false brome	H2, H4, S1, S2, S10, S16
<i>Briza media</i>	quaking grass	M1, M4, S30, S35
<i>Bromopsis erecta</i>	upright brome	M1
<i>Bromus diandrus</i>	great brome	H2
<i>Bromus hordeaceus</i>	soft brome	S11, S30
<i>Bromus sterilis</i>	barren brome	S27, S35
<i>Cynosurus cristatus</i>	crested dog's-tail	H4, M1, M4, S30, S35, W1, W8, W13
<i>Dactylis glomerata</i>	cocksfoot	H2, M1, M3, M4, M5, S1, S10, S21, S23, S27, W1
<i>Deschampsia cespitosa</i>	tufted hair-grass	H4, M4, M5, S16, S21, S30, W4, W8, W13
<i>Deschampsia flexuosa</i>	wavy hair-grass	W1
<i>Elymus repens</i>	common couch	M4, S1, S10, S11, W9, W13
<i>Festuca ovina</i>	sheep's fescue	M1, DF

<i>Festuca rubra</i>	red fescue	H2, H4, M1, M3, M4, M5, S1, S2, S24, S30, W1, W8, W13
<i>Glyceria maxima</i>	reed sweet-grass	W8, W12
<i>Helictotrichon pratense</i>	meadow oat-grass	M1
<i>Holcus lanatus</i>	Yorkshire fog	H1, H2, H3, H4, H5, M1, M3, M4, S5, S6, S7, S8, S10, S14, S16, S21, S23, S24, S28, S35, W1, W4, W8, W11, W13
<i>Holcus mollis</i>	creeping soft-grass	S2
<i>Lolium perenne</i>	perennial rye-grass	H3, M1, M4, M5, S11, S14, S28, S30, S35, W9, W13
<i>Melica uniflora</i>	wood mellick	P1, S16, S18
<i>Molinia caerulea</i>	purple moor-grass	S14
<i>Phleum bertolonii</i>	smaller cat's-tail	M1
<i>Phleum pratense</i>	timothy	M3, M4, S27
<i>Phragmites australis</i>	common reed	W4, W5, W6, W7, W8, W13
<i>Poa annua</i>	annual meadow-grass	S5, S23, S35
<i>Poa nemoralis</i>	wood meadow-grass	S21
<i>Poa trivialis</i>	rough meadow-grass	H5, S35, W12
<i>Trisetum flavescens</i>	yellow cat-grass	M4
POLEMONIACEAE		
<i>Polemonium caeruleum</i>	Jacob's ladder	S30
POLYGONACEAE		
<i>Persicaria maculosa</i>	redshank	S3, S5, S6, S24
<i>Polygonum aviculare</i>	knotgrass	S5, S14, S28
<i>Rumex acetosa</i>	common sorrel	S1, S8
<i>Rumex hydrolapathum</i>	water dock	W8
<i>Rumex obtusifolius</i>	broad-leaved dock	H4, H5, M1, M4, M5, S2, S7, S23, S24, S28, W4, W12, W13
<i>Rumex patientia</i>	patience dock	S35
POTAMOGETONACEAE		
<i>Potamogeton crispus</i>	curled pondweed	W14, W16
PRIMULACEAE		
<i>Hottonia palustris</i>	water violet	W15
<i>Lysimachia nummularia</i>	creeping jenny	H3, W4, W9
<i>Lysimachia vulgaris</i>	yellow loosestrife	W4, W8, W13
<i>Primula elatior</i>	oxlip	S16
<i>Primula veris</i>	cowslip	M1, M4, S8, S16, S35
<i>Primula vulgaris</i>	primrose	H2, H4, H5
RANUNCULACEAE		
<i>Anemone nemorosa</i>	wood anemone	S5, S7
<i>Aquilegia vulgaris</i>	columbine	S5, S6, S7
<i>Caltha palustris</i>	marsh marigold	W4, W8, W12, W13
<i>Clematis vitalba</i>	traveller's joy	H1, H2, H4, M1, M3, S1, S2, S8, S16, S27
<i>Ranunculus acris</i>	meadow buttercup	M5, S3, S7, S30, S35, W8, W9, W11, W12, W13
<i>Ranunculus bulbosus</i>	bulbous buttercup	H2, M4, M5
<i>Ranunculus ficaria</i>	lesser celandine	S5, S20, S21
<i>Ranunculus lingua</i>	greater spearwort	W8, W11
<i>Ranunculus repens</i>	creeping buttercup	H2, H3, H4, H5, M1, M3, M4, M5, S1, S2, S7, S8, S16, S21, S24, S27, W1, W4, W9, W12, W13
<i>Thalictrum flavum</i>	common meadow rue	S30, W4

RESEDAEAE		
<i>Reseda lutea</i>	wild mignonette	M1
ROSACEAE		
<i>Crataegus laevigata</i>	Midland hawthorn	P5
<i>Crataegus monogyna</i>	hawthorn	H2, H3, H4, H5, M5, S8, S21, S30
<i>Filipendula ulmaria</i>	meadowsweet	M4, M5, S24, W4, W8, W9, W11, W12
<i>Fragaria vesca</i>	wild strawberry	H2, S5, S30
<i>Geum urbanum</i>	wood avens	H1, H2, H3, M4, M5, S3, S11, S23
<i>Malus sp.</i>	apple seedling	H2, S8
<i>Malus sylvestris</i>	crab apple	H2, H3, H6, S16
<i>Potentilla anserina</i>	silverweed	S35
<i>Potentilla reptans</i>	creeping cinquefoil	H3, M3, M4, M5, S1, S2, S3, S6, S7, S8, S14, S15, W1, W4, W13
<i>Prunus avium</i>	wild cherry	S3, S5, P1, M3, S18
<i>Prunus padus</i>	bird cherry	S3, S5
<i>Prunus spinosa</i>	blackthorn	W8
<i>Prunus spp.</i>	cherry seedlings	P3, P4, P5, S3, S5
<i>Rosa canina</i>	dog rose	H2, H5, S10
<i>Rubus fruticosus agg.</i>	bramble	H3, H4, M1, S2, S3, S16, S24, W1
<i>Sanguisorba minor</i>	salad burnet	M1, M3, S1
ssp. <i>minor</i>	great burnet	M4
<i>Sanguisorba officinalis</i>	common whitebeam	S13, S31
<i>Sorbus aria</i>	rowan	H5, M5, S6, S10, S24, S30
RUBIACEAE		
<i>Galium aparine</i>	goosegrass	H2, H4, H5, S2, S28
<i>Galium mollugo</i>	hedge bedstraw	H2, H4, M1, M3, M4, M5, S1, S2, S3, S5, S6, S7, S8, S10, S21, S30, W1, W8, W9, W11, W12, W13
<i>Galium odoratum</i>	woodruff	S5, S6
<i>Galium verum</i>	lady's bedstraw	M1, S1, S2
<i>Sherardia arvensis</i>	field madder	M1
SALICACEAE		
<i>Populus cv</i>	'Lombardy poplar'	S35
<i>Salix alba</i> × <i>S. fragilis</i>		S11
<i>Salix aurita</i>	eared willow	S28
<i>Salix caprea</i>	goat willow	P1, S5, S12, S28, W1
<i>Salix cinerea</i>	grey willow	S28, S31, W1
SCROPHULARIACEAE		
<i>Digitalis purpurea</i>	foxglove	H2, H3, H5, S3, S5, S6, S8, S14, S16, S21, S23, S24, S28
<i>Linaria vulgaris</i>	common toadflax	H3, M4, S2, S11, S12, S28, S30
<i>Scrophularia auriculata</i>	water figwort	M1, S2, S30, W8, W9, W12, W13
<i>Scrophularia nodosa</i>	common figwort	W4
<i>Verbascum thapsus</i>	great mullein	S1, S2
<i>Veronica beccabunga</i>	brooklime	S28, W8, W11, W13
<i>Veronica serpyllifolia</i>	thyme-leaved speedwell	S35
SOLANACEAE		
<i>Solanum dulcamara</i>	bittersweet	S5, S8, W8
<i>Solanum nigrum</i>	black nightshade	S3, S21, S23

	SPARGANIACEAE	
<i>Sparganium erectum</i>	branched bur-reed	W13
	TAXACEAE	
<i>Taxus baccata</i>	yew	S2, S3
	THELYPTERIDACEAE	
<i>Thelypteris palustris</i>	marsh fern	W4
	TIARIACEAE	
<i>Tilia cordata</i>	small-leaved lime	S8
	URTICACEAE	
<i>Urtica dioica</i>	common nettle	H1, H4, H5, M1, M3, M5, S1, S2, S5, S6, S8, S11, S14, S16, S21, S30, W1, W4, W9, W10, W12, W13
<i>Urtica galeopsifolia</i>	fen nettle	W4
<i>Urtica urens</i>	small nettle	S8
	VIOLACEAE	
<i>Viola arvensis</i>	field pansy	S16
<i>Viola riviniana</i>	common dog-violet	H2, S23
	WOODSIACEAE	
<i>Athyrium filix-femina</i>	lady fern	S18

APPENDIX 2

Specialist growers and suppliers who claim to supply British native plants and seeds and who can provide information on the native origin of their stock.

- Alaska Environmental Contracting
Stokeford Farm, East Stoke, Wareham, Dorset BH20 6AL
Tel: 01929 463301 Fax: 01929 463889
- Alba Trees plc
Lower Winton, Gladsmuir, East Lothian EH33 2AL
Tel: 01620 825058 Fax: 01620 825316
- British Seed Houses Ltd
Bewsey Industrial Estate, Pitt Street, Warrington, Cheshire WA5 5LE
Tel: 01925 654411 Fax: 01925 230682
- British Wild Flower Plants
Burlingham Gardens, 31 Main Road, North Burlingham, Norfolk NR13 4TA
Tel: 01603 716615 Fax: 01603 716615
- Burntwood Nurseries
The Estate Office, Burntwood, Winchester, Hampshire SO21 1AF
Tel: 01962 881514 Fax: 01962 886788
- Cheviot Trees Ltd
Newton Brae, Foulden, Berwick-upon-Tweed, Northumberland TD15 1UL
Tel: 01289 386755 Fax: 01289 386750
- Christie-Elite Nurseries
Forres, Moray IV36 0TW
Tel: 01309 672633 Fax: 01309 676846
- Country Flowers Wild Flower Nursery
62 Lower Sands, Dymchurch, Romney Marsh, Kent TN29 0NF
Tel: 01303 873052

- Eco-seeds
1 Bar View Cottages, Shore Road, Strangford, Co. Down BT30 7NN
Tel: 028 4448 1227
- Emorsgate Seeds
Limes Farm, Tilney All Saints, King's Lynn, Norfolk PE34 4RT
Tel: 01553 829028 Fax: 01553 829803
- Flower Farms
Carvers Hill Farm, Shalbourne, Marlborough, Wiltshire SN8 3PS
Tel: 01672 870782/870431 Fax: 01672 870782
- Forestart
Church Farm, Hadnall, Shrewsbury, Shropshire SY4 4AQ
Tel: 01939 210638 Fax: 01939 210563
- Giantless Trees and Hedging
Newton on the Moor, Felton, Northumberland NE65 9LR
Tel: 01665 570304 Fax: 01665 570035
- High Value Horticulture
The Shop, The Street, Sutton Waldron, Blandford Forum, Dorset DT11 8NZ
Tel: 01747 811778 Fax: 01747 811499
- John Shipton Bulbs
Y Felin, Henllan Amgoed, Whitland, Carmarthenshire SA34 0SL
Tel: 01994 240125 Fax: 01994 241180
- Kingsdown Nurseries
Kingsdown Lane, Blunsdon, Swindon, Wiltshire SN2 4DL
Tel: 01793 705290
- Landlife
National Wildflower Centre, Court Hey Park, Liverpool, Merseyside L16 3NA
Tel: 0151-737 1819 Fax: 0151-737 1820
- Maelor Nurseries Limited
Fields Farm, Bronington, Whitchurch, Shropshire SY13 3HZ
Tel: 01948 710606 Fax: 01948 710440
- Meadowlands
The Park Lodge, Park Avenue, Wortley, South Yorkshire S30 7DR
Tel: 0114-283 0322 Fax: 0114-283 0322
- Merton Hall Pond Ltd
Merton, Thetford, Norfolk IP25 6QH
Tel: 01953 881763 Fax: 01953 884020
- Mike Handyside Wild Flowers
4H Woodlands Park, Allostock, Knutsford, Cheshire WA16 9LG
Tel: 01565 722995
- Mires Beck Nursery
Low Mill Lane, North Cave, Brough, East Yorkshire HU15 2NR
Tel: 01430 421543 Fax: 01430 421333
- Mount Pleasant Trees
Rockhampton, Berkley, Gloucestershire GL13 9DU
Tel: 01454 260348
- Natural Selection Garden Services
1 Station Cottages, Hullavington, Chippenham, Wiltshire SN14 6ET
Tel: 01666 837369
- Natural Surroundings
Bayfield Estate, Holt, Norfolk NR25 7JN
Tel: 01263 711091

- Organic Trees
Doire-na-Mairist, Morvern, Oban, Argyll PA34 5XE
Tel: 01967 421203 Fax: 01967 421329
- Oxford Tree Seeds
11 Spring Lane, Watlington, Oxfordshire OX9 5QL
Tel: 01491 612014
- Poyntzfield Herb Nursery
Black Isle, Dingwall, Ross & Cromarty IV7 8LX
Tel: 01381 610352
- Ulster Native Trees/Wildwood Trees
67 Temple Rise, Templepatrick, Ballyclare, Co. Antrim BT39 0AG
Tel: 028 9443 3068
- Wildflower Centre
Church Farm, Sisland, Norwich, Norfolk NR14 6EF
Tel: 01508 520235
- Wyeavale Transplants (Forestry) Ltd
Russells End Farm, Bromsberrow, Ledbury, Herefordshire HR8 1PB
Tel: 01531 650482 Fax: 01531 650053
- Y.S.J. Seeds
Kingsfield Conservation Nursery, Broadenham Lane, Winsham, Chard, Somerset TA20 4JF
Tel: 01460 30070 Fax: 01460 30070
- Yarningdale Nurseries Ltd
16 Chapel Street, Warwick CV35 7HS
Tel: 01926 496656
- Yellow Flag Wildflowers
8 Plock Court, Longford, Gloucester GL2 9DW
Tel: 01452 311525

Source: Flora Locale.

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The flora of Barnes Common

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Summary

This paper reviews previous accounts by botanists of the flora of Barnes Common from the sixteenth century to the present day, noting that this is generally treated as part of the flora of Surrey and London and rarely as a separate entity. A list is presented of all species recorded on the Common from 1989 to 1999. Changes in the flora over the last hundred years are discussed pointing out notably the increased number of garden escapes and casual aliens.

Introduction

Barnes Common is well known to naturalists today, and also to the general public as a pleasant place for walking and recreation. Its history is in general terms well known too, and plenty has been written about its development from common ground through the Middle Ages to its situation today — 96 hectares (230 acres) or so of pleasant, open ground surrounded by houses and crossed by several big roads and also by the railway. Its physical character is no less familiar — a flat sandy area, dry and drier than it used to be, supporting the trees and vegetation that one might expect of it and reminiscent of the Surrey heathlands further south of which it may well be regarded as an outlier.

Botanists know it well and visit it frequently, but it has attracted relatively little interest as a separate entity from a botanical point of view. Writers of botanical works, from the sixteenth century to the present day, have mostly treated it as part of Surrey, or of London as the case may be. Most of them evidently found the flora of Surrey interesting and made records from there. Turner (1508–1568) did, as did Gerard, Ray and Evelyn in the seventeenth century, to name but a few. The first substantial Surrey list was by Christopher Merrett (1666) in his *Pinax Rerum Naturalium Britannicarum* and it is particularly interesting to find that he noted *Rosa pimpinellifolia (spinossissima)* growing on Barnes Common. The flora of Surrey continued to hold a significant place in many works published in the eighteenth century, but it was in nineteenth-century books about the flora of London that Barnes Common first appears as an entity in its own right. Daniel Cooper published, in 1836, his *Flora Metropolitana: or, Botanical rambles within thirty miles of London*, which included separate plant lists for a number of localities, of which Barnes Common was one. This treatment by localities was followed by de Crespigny (1876) in his *New London flora*. His list of about sixty species from there does not aim to be a full account, but consists, evidently, of plants which for one reason or another caught his interest; for instance, *Anthemis nobilis*, *Salix repens* and *Teesdalia nudicaulis*. Finally, the naturalist F. A. Paley (1882) published in the *West London Observer* a list of nearly 200 flowering plants found on Barnes Common, a selective list still, but of great interest. His list and that of de Crespigny, incomplete though they are, remain a basis for later comparison and evaluation of the changes in habitat, both these authors having been interested in what one might term the 'native' plants of the Common, i.e., plants of dry heathland and, in Paley's case, water-loving plants as well.