# BRENT ISLAND FIVE-YEAR PLANT SURVEY 2015

# A report for the Brent Island Trust Committee

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#### **CONTENTS**

- 1. Summary
- 2. Introduction
- 3. Monitoring the meadow
- 4. Whole site survey
- 5. Photographic monitoring
- 6. Conclusions & Recommendations
- 7. Acknowledgments
- 8. Appendix species lists

## A note on the plants

The plants recorded in the Brent Island Surveys are all 'higher' or 'vascular' plants. 'Lower' plants, comprising mosses, liverworts, algae, fungi and lichens have not been included. Higher plants can be subdivided in various ways, but the one chosen here is: **ferns**; **grasses** (plus **sedges & rushes**); and **forbs**. This is similar to that used in previous reports, but the term forb, which strictly means plants other than grasses, replaces 'flowering plants' or 'herbaceous plants'. Previous surveys have not included a fourth group, **trees, shrubs & woody climbers**, but they appear here in the Appendix. All nomenclature, scientific and vernacular, follows C. A. Stace (2010) *New Flora of the British Isles* Third Edition.

## A note on recording plants

The simplest method is to record presence, irrespective of the number of plants or their distribution. There are various ways of expanding on this to give some measure of abundance in a defined area, and the simplest of these is the DAFOR method, where each species is described as either **D**ominant, **A**bundant, **F**requent, **O**ccasional or **R**are, with the option of adding **L**ocally to the first three. Both methods have been used in this and previous Brent Island reports.

#### 1. SUMMARY

The fifth five-year plant survey of Brent Island, delayed one year, was carried out on 3 June 2015. As in 2009, this consisted of a listing of the higher plants found on the whole site, together with a more detailed survey of the meadow, where species abundance was measured on the DAFOR scale. In a broad sense, the flora has not changed since the last survey, but more species were found than on the 2009 survey, including some that suggest an improvement in the condition of the meadow, and some not found in any of the four previous surveys. It is suggested that an annual monitoring programme, with surveys in both May and July, should be considered.

## 2. INTRODUCTION

Consistent with the five-yearly review of the management plan, vegetation monitoring on Brent Island has previously been carried out by ecologists from the Dartmoor National Park Authority (DNPA): Rodger Keedle in 1994 and 1999, Ben Driver in 2004 and Naomi Scuffil (now Barker) in 2009. Due to staffing problems, the survey due in 2014 was postponed to 2015, but was still unable to be carried out by DNPA staff. As a result, I volunteered to carry out the survey, repeating as far as possible the timing and methodology used in 2009. As the 2015 results are to be compared with those from the previous surveys, it is pertinent to consider some changes in the methodology as described in the 2009 report:

During the 1999 survey, quadrat based monitoring of herbaceous plants in the meadow area was set up and this was repeated in 2004. Quadrat-based recording was not repeated in 2009; instead the entire meadow was surveyed and the abundance of plant species noted in the DAFOR scale. The previous surveyors had carried out a whole site search for flowering plants, ferns, grasses, sedges and rushes during the 1994, 1999 and 2004 surveys; this was repeated in 2009 – although it must be noted here that as less time was spent on site in 2009, a number of the more rare plant species will have been missed.

Previous surveys have been carried out in May, that in 2009 being on 29 May. In 2015, the survey took place on 3 June by myself and Phil Dean (with a brief second visit on 5 June with Lesley Austin to check one or two identifications). Although the timing of plant surveys is critical, particularly when comparing results between years, it is considered that the 2009 and 2015 were effectively undertaken at the same time of year, albeit in different months.

Unlike the previous surveyor, this was not my first visit to The Island! I have been recording the plants there since 2009, and this may have given me an advantage in finding some species during the whole site survey. For completeness, the plant list in the Appendix includes species found on previous visits, which have occurred at various times of year.

## 3. MONITORING OF THE MEADOW

This was set up in 1999 and consists of a survey of three areas:

- Area 1 the tussocky grassland, compartment I in the management plan
- Area 2 western part of the meadow, compartment D in the management plan
- Area 3 eastern part of the meadow, compartment D in the management plan

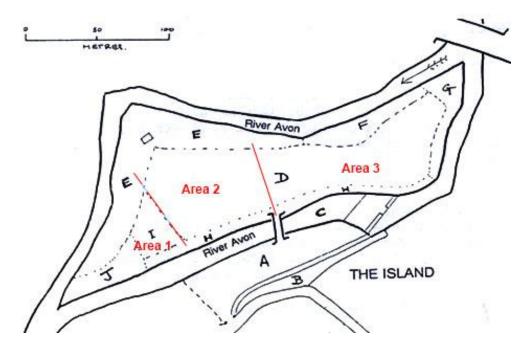


Figure 1. A map of The Island showing the main areas, including the meadow (I and D).

As far as possible, the inner edge of the outer footpath has been used to delimit the meadow area, but it was not easy to determine exactly the boundaries between the three areas, either from descriptions in previous reports or from features on the ground. The ones used are hopefully close to the originals, and are now described more precisely to aid future surveyors as follows:

- Boundary between Areas 1 and 2. A line running from SX69509 60266 (half-way between bridge and nearest apple tree) to the tallest tree (Ash) to the left of the Linhay (SX69481 60272).
- Boundary between Areas 2 and 3. A line running from the bridge to the seat on the opposite side of the meadow (on a line with SX69517 60296).

The results of the survey are shown in Tables 1, 2 and 3 at the end of this section. These are essentially those given in the 2009 report with 2015 data added. (It is not clear, however, why three separate tables were used in 2009 or why different numbers of years appear for comparison in each. There is perhaps a case for combining data and using just two tables.) The main conclusions from the 2015 survey are:

a. **Number of species**. The overall number of species in the meadow, 21 forbs and 10 grasses has remained fairly steady for the last three surveys:

|         | 2004 | 2009 | 2015 |
|---------|------|------|------|
| Forbs   | 23   | 20   | 21   |
| Grasses | 9    | 9    | 10   |

b. **Number of species per area.** The number of species per in each area was similar, but Area 1 had the least and Area 3 the most. This pattern also occurred in 1999 and 2004, but not in 2009, when more species occurred in Area 1. In Area 1, fewer species were found in 2015 than in 2009, but more than in the two earlier surveys. In Areas 2

and 3 there were more than in 2009, and in Area 2 more were found than in any of the previous three surveys .

- c. The main species. The main species of forb included *Plantago lanceolata* Ribwort Plantain, *Ranunculus repens* Creeping Buttercup, *Rumex acetosa* Common Sorrel, *Trifolium repens* White Clover and *Veronica chamaedrys* Germander Speedwell. Overall, the main grass species were *Agrostis capillaris* Common Bent, *Anthoxanthum odoratum* Sweet Vernal Grass and *Holcus lanatus* Yorkshire Fog. These species have also been a constant presence during previous surveys.
- d. Differences between areas. Area 1 had more Dactylus glomerata Cock's-foot (creating tussocks) and fewer obvious flowers than the other areas, and it was here that the previously unrecorded Arrenatherum elatius False Oat-grass mainly occurred. Lolium perenne Perennial Rye-grass seemed to increase from Areas 1 to 2 to 3, but was mainly adjacent to paths. Areas 2 and 3 were more similar to each other, particularly with the grasses, but Area 2 had the only Lotus corniculatus Common Bird's-foot-trefoil and Area 3 the only Cirsium arvense Creeping Thistle. Most of the Centaurea nigra Common Knapweed and Hypochaeris radicata Cat's-ear, two large and colourful species (though not in flower at time of survey, and not apparent in 2009) were in Area 2.
- e. Additions and increases. Centaurea nigra Common Knapweed, and Hypochaeris radicata Cat's-ear were not recorded at all in 2009, though they had been recorded in 2004, and were conspicuous in 2015. Cerastoderma fontinalis Common Mouse-ear appears to be an addition to the meadow species list. In 2015 there appeared to be more Achillea millefolium Yarrow, Conopodium majus Pignut, Heracleum sphondylium Hogweed, Stellaria graminea Lesser Stitchwort and both Red and White Clover Trifolium pratense and T repens, than previously. The main differences in grasses are the apparent increases in Cynosurus cristatus Crested Dog's-tail and Poa trivialis Rough Meadow-grass, and the arrival of Arrenatherum elatius False Oat-grass. Two species found growing in the meadow in 2015, Luzula campestre Field Wood-rush and Pteridium aquilinum Bracken, were not recorded in the previous surveys, but. It is not known whether that is because they were not there, not seen or excluded because they are nether forbs nor grasses!
- f. **Losses and decreases**. The few species recorded in previous surveys, but not in 2015, had mostly been recorded as rare. The data suggest that *Dactylus glomerata* Cock's-foot, *Ranunculus repens* Creeping Buttercup, and *Rumex acetosa* Common Sorrel were less abundant in 2015 than in 2009.

Any comparison of survey results between years must take into account differences in timing (in relation to the flowering season in those particular years), differences between surveyors in finding plants and interpreting the DAFOR scale and the fact that it is not possible to survey everywhere and see everything. Nevertheless, one has to assume that the methods used will reveal the main species present, even if some are not in flower and have to be identified from vegetative characteristics.

Although there are some detectable differences between the three areas which have persisted through time, the most common species occur throughout the meadow, and a case could be made for surveying it as one entity rather than three.

In general, the plants recorded in 2015 were much the same as those recorded in previous surveys, and were at similar levels of abundance. The apparent changes are mostly positive in terms of quality of grassland and floral richness. Increases or re-appearances of *Centaurea nigra* Common Knapweed, *Cynosurus cristatus* Crested Dog's-tail and *Hypochaeris radicata* Cat's-ear, for example, are to be welcomed, as are *Arrenatherum elatius* False Oat-grass and *Pteridium aquilinum* Bracken but perhaps only in small doses. About 30 species of plant occur in the meadow. This is certainly better than improved pasture, but much less than the number that could occur in a Dartmoor hay meadow or even typical hedgebanks and roadside verges. Several of the species add, or will add, colour to the meadow, which is hopefully now becoming less nutrient-rich as a result of the annual cutting and removal.

Table 1. Brent Island Survey 2015. The occurrence flowering plants ('wild flowers' or forbs) in Areas 1, 2 and 3 of the meadow in the four surveys 1999 to 2015, and the total number of species.

|                           |      | ARI  | EA1  |      |      | ARI  | EA 2 |      | AREA 3 |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|--------|------|------|------|
| Species                   | 1999 | 2004 | 2009 | 2015 | 1999 | 2004 | 2009 | 2015 | 1999   | 2004 | 2009 | 2015 |
| Achillea millefolium      | •    | -    | ٠    | -    | ٠    | -    | ٠    | •    | -      | ٠    | -    | •    |
| Aegopodium podagraria     | -    | -    | -    | •    | -    | -    | -    | -    | -      | -    | -    | -    |
| Anthriscus sylvestris     |      | -    | •    | -    | -    | -    | -    | -    | -      |      | -    | -    |
| Centaura nigra            | -    | •    | -    | •    | •    | •    | -    | •    | •      | •    | -    | •    |
| Cerastium fontanum        | -    | -    | -    | -    | -    | -    | -    | •    | -      | -    | -    | •    |
| Cirsium arvense           | -    | -    | -    | -    | -    | -    | -    | -    | •      | •    | •    | •    |
| Conopodium majus          | -    | •    | •    | •    | -    | •    | -    | •    | •      | •    | •    | •    |
| Digitalis purpurea        | -    | -    | •    | -    | -    | -    | -    | -    | -      | -    | •    | -    |
| Galium aparine            | -    | -    | •    | -    | -    | -    | -    | -    | -      | •    | -    | -    |
| Heracleum sphondylium     |      | •    | •    | •    | -    | -    |      | •    | -      | •    | •    | •    |
| Hieracium spp             | -    | -    | •    | -    | -    | -    | -    | -    | -      | -    | •    | _    |
| Hyacinthoides nonscriptus | -    | -    | •    | -    | -    | -    | -    | -    | -      | -    | -    | -    |
| Hypochaeris radicata      | -    | -    | -    | <-   | •    | •    | -    | •    | -      | •    | -    | •    |
| Leontodon autumnalis      | -    | -    | -    | -    | •    | -    | -    | -    | -      | •    | •    | -    |
| Lotus corniculatus        | -    | -    | -    | -    | •    | •    | •    | •    | -      | -    | -    | -    |
| Oenanthe crocata          | -    | -    | -    | •    | -    | -    | -    | -    | -      | •    | -    | •    |
| Plantago lanceolata       |      | •    | •    | •    | •    | •    | •    | •    | •      | •    | •    | •    |
| Plantago major            | -    | -    | -    | •    | -    | -    | •    | •    | -      | •    | •    | •    |
| Ranunculus acris          | _    | -    | -    | -    | •    | •    | -    | -    | •      | -    | -    | -    |
| Ranunculus bulbosus       | -    | -    | -    | -    | •    | -    | -    | -    | -      | 1-1  | -    | -    |
| Ranunculus ficaria        |      | •    | -    | -    | •    | •    | -    | -    | •      | •    | -    | -    |
| Ranunculus repens         |      | -    | •    | •    | •    | -    | •    | •    | ٠      | •    | •    | •    |
| Rumex acetosa             |      | •    | •    | •    | •    | •    | •    | ٠    | •      | •    | •    | •    |
| Rumex obtusifolius        | -    | •    | •    | •    | -    | -    |      | ٠    | -      | -    | •    | -    |
| Stellaria graminea        |      | -    | •    | •    | •    | -    | -    | ٠    | •      | •    | -    | •    |
| Stellaria media           | -    | -    | •    | x=   | -    | -    | -    | -    | -      |      |      | -    |
| Taraxacum officinale      | -    | •    | -    |      | •    | -    | -    | -    | •      | •    | -    | •    |
| Trifolium pratense        | -    | -    | -    | -    | -    | -    | •    | •    | •      | •    | •    | •    |
| Trifolium repens          | _    | -    | -    | -    | •    | •    | •    | •    | •      | •    | •    | •    |
| Urtica dioica             | -    | -    | •    | •    | -    | -    | -    | -    | •      | •    | •    | •    |
| Veronica arvensis         | -    | -    | •    | -    | -    | -    | -    | -    | -      | -    | -    | -    |
| Veronica chamaedrys       | -    | •    | •    | •    | •    | •    | •    | •    | •      | •    | •    | •    |
| TOTALS                    | 7    | 9    | 17   | 13   | 15   | 10   | 8    | 16   | 15     | 20   | 15   | 18   |

Table 2. Brent Island Survey 2015. The abundance of flowering plants ('wild flowers' or forbs) in Areas 1, 2 and 3 of the meadow in the 2009 and 2015 surveys.

|                            | ARI  | AREA 1 |       | EA 2 | ARI  | EA 3 |
|----------------------------|------|--------|-------|------|------|------|
| Species                    | 2009 | 2015   | 2009  | 2015 | 2009 | 2015 |
| Achillea millefolium       | R    |        | R     | 0    |      | 0    |
| Aegopodium podagraria      | 1    | R      |       |      |      |      |
| Anthriscus sylvestris      | R    |        |       |      |      |      |
| Centauria nigra            |      | R      |       | LF   |      | 0    |
| Cerastium fontanum         |      |        |       | 0    |      | 0    |
| Cirsium arvense            |      |        |       |      | R    | 0    |
| Conopodium majus           | 0    | 0      |       | LF   | 0    | F    |
| Digitalis purpurea         | R    |        |       |      | R    |      |
| Galium aparine             | R    |        |       |      |      |      |
| Heracleum sphondylium      | R    | F      | R     | 0    | R    | F    |
| Hieracium spp              | R    |        |       |      | R    |      |
| Hyacinthoides non-scriptus | 0    |        |       |      |      |      |
| Hypochaeris radicata       |      |        |       | F    |      | 0    |
| Lotus corniculatus         |      |        | R     | 0    |      |      |
| Oenanthe crocata           |      | R      |       |      |      | R    |
| Plantago lanceolata        | 0    | F      | O, LF | 0    | F    | F    |
| Plantago major             |      | 0      | R     | LF   | R    | LA   |
| Ranunculus repens          | Α    | F      | Α     | F    | Α    | F    |
| Rumex acetosa              | Α    | F      | F     | F    | F    | F    |
| Rumex obtusifolius         | 0    | 0      |       | 0    | 0    |      |
| Stellaria graminea         | R    | 0      |       | 0    |      | 0    |
| Stellaria media            | R    |        |       |      |      |      |
| Trifolium pratense         |      |        | R     | 0    | R    | 0    |
| Trifolium repens           |      |        | 0     | LA   | 0    | LA   |
| Urtica dioica              | R    | 0      |       |      | R    | 0    |
| Veronica arvensis          | 0    |        |       |      |      |      |
| Veronica chamaedrys        | LF   | 0      | LF    | F    | LF   | F    |

A = Abundant, F = Frequent, O = Occasional, R = Rare, L = Locally

Table 3. Brent Island Survey 2015. The abundance of grasses and two other relevant species in Areas 1, 2 and 3 of the meadow in the 2004, 2009 and 2015 surveys.

|                        | AREA 1 |       | AREA 2 |      |       | AREA 3 |      |       |      |
|------------------------|--------|-------|--------|------|-------|--------|------|-------|------|
| Species                | 2004   | 2009  | 2015   | 2004 | 2009  | 2015   | 2004 | 2009  | 2015 |
| Agrostis capillaris    | Α      | 0     | Α      | Α    |       | Α      | Α    |       | Α    |
| Alopecurus pratense    | 0      |       | R      | R    |       |        | R    |       |      |
| Anthoxanthum odoratum  | 0      | F     | Α      | Α    | Α     | Α      | Α    | Α     | Α    |
| Arrenatherum elatius   |        |       | 0      |      |       |        |      |       |      |
| Cynosaurus cristatus   |        | R     | 0      |      |       | 0      |      |       | F    |
| Dactylis glomerata     | F      | A, LD | F      | 0    | O-F   | 0      | 0    | Α     | 0    |
| Festuca rubra          |        | 0     |        |      | 0     |        |      | 0     |      |
| Holcus lanatus         | Α      | A, LD | Α      | F    | Α     | Α      | F    | Α     | Α    |
| Lolium perenne         |        |       | 0      | F    | R, LD | LF     | 0    | R, LD | LA   |
| Phleum pratense        | R      |       |        |      |       |        |      |       |      |
| Poa pratense           |        |       |        |      |       |        | R    |       |      |
| Poa annua              |        | F     | F      |      | F     | LF     |      | F     | LF   |
| Poa trivialis          |        |       | F      | R    |       | 0      |      | 0     | LF   |
| Other relevant species |        |       |        |      |       |        |      |       |      |
| Luzula campestris      |        |       |        |      |       | LF     |      |       |      |
| Pteridium aquilinum    |        |       | 0      |      |       | R      |      |       |      |

## 4. WHOLE SITE SURVEY

As in previous surveys, the whole site was walked slowly and the species recorded. In total, about two hours (over two days) were spent visiting as much of The Island as possible. In 2009, the surveyor, who had not visited the site before spent only an hour, and acknowledged that the reduced numbers of species recorded was probably a reflection of this, rather than a real decrease in plant species.

A total of 93 species were found on 3 & 5 June 2015. This was more than in 2009, but less than in the earlier surveys:

|                          | 1994 &1999 | 2004 | 2009 | 2015 | 2009–2015 |
|--------------------------|------------|------|------|------|-----------|
| Ferns                    | 10         | 8    | 7    | 9    | 9         |
| Grasses, sedges & rushes | 21         | 19   | 14   | 19   | 21        |
| Forbs                    | 106        | 77   | 53   | 65   | 90        |
| TOTALS                   | 137        | 104  | 74   | 93   | 120       |

A cumulative total of 120 species for the 2009-2015 period indicates the number of species likely to be present on the site, even if they are not found on the survey dates. The main variation is among the forbs. In the 2009 report it was indicated that 'many of the 'missing' plants are exotics or garden escapes, such as hellebores, bellflowers, cultivated snowdrops, daffodils etc. which perhaps grow casually, not occurring every year and some might no longer exist on site'. Certainly the number of such plants is now relatively few, though some exotics currently present appear not to have been recorded in any of the previous surveys: for example, Anemone x hybrida Japanese Anemone, Persicaria amplexicaule Red Bistort and Polygonatum x hybridum Garden Solomon's-seal. Other presumed recent arrivals include False Oat-grass, which has already featured in the meadow survey, and Carex pendula Pendulous Sedge. All those just listed are large plants unlikely to have been missed in earlier surveys, but some new native species are smaller and perhaps not so obvious in May, for example Adoxa moschatellina Moschatel and Moehringia trinervia Three-nerved Sandwort, but Sanicle Sanicula europaea is unlikely to have been missed. It was first recorded in 2010, so may be a genuine new arrival.

In contrast, several native species found in earlier surveys have not been found on visits to The Island from 2009 on. Partly this may be due to different interpretations of where The Island boundary lies. During the 2015 survey the mid-line of the leat was taken as the boundary, but in Figure 1 the area on the other side of the leat is labelled as B, so implicitly part of The Island. A case in point is the grass *Melica uniflora* Wood Melick which appears to be absent from the rest of the site, but probably still grows here, as it does on the bank immediately outside the gate to The Island. Another plant, and a rarer one, is *Daphne laureola* Spurge-laurel, a single specimen of which grows on an old bank by the gate (found by Rosemary Riddell several years ago). It is a woody plant so not included here, and very much on the edge of The Island, but its presence should be noted so that it is not inadvertently destroyed.

# 5. PHOTOGRAPHIC MONITORING

Colour photographs have been taken during the regular plant surveys to show any visual change to the Island's habitat. The photographs from the 2009 and 2015 surveys are shown below. There have been no significant observable changes since 2009.

# 2015:



# 2009:



# 2015:



# 2009:



#### 6. CONCLUSIONS & RECOMMENDATIONS

The 2009 conclusion that the meadow is in good condition and stable still holds. Most of the apparent changes in species occurrence and abundance are considered to be positive ones, and under the current management regime perhaps the meadow is naturally heading towards one with increasing abundance of some colourful wild flowers. New species will hopefully continue to arrive by natural means, including resurrection from the seed bank.

The recommendation in the 2009 report to bring in seed from a Dartmoor haymeadow would be an acceptable way of trying to increase species diversity, but is not necessary. I would argue that the meadow is currently in a reasonable state and showing signs of improvement. Random planting and sowing should not be encouraged, but if it has, or does, take place, it would be useful to know. If a new species is found, it would be disappointing to know that it had been planted a few months earlier – but better to know than not to know!

In terms of monitoring, it is felt that a five-year single monitoring visit is not the best way of recording change. Instead it is suggested that at least two visits (May and July) should be undertaken each year, perhaps with the meadow being treated as a single unit. This would help record species not so apparent in May and also give a better idea on whether recorded changes reflect fluctuations or trends. Such a regime would not replace the five-year surveys, but would augment them.

In summary, it is recommended that:

- The September cut and removal of vegetation is maintained, perhaps augmented by spreading haymeadow hay.
- Casual plantings and sowings should not be encouraged, but if they do occur, it would be useful if a record could be kept of the species, when, where and how many.
- Five-year monitoring should be augmented by annual surveys comprising at least two visits, perhaps May and July.

#### 7. ACKNOWLEDGEMENTS

Thanks to Lesley Austin and Phil Dean for helping to find some of the plants, and to Phil for taking photographs and grid references and for putting some final touches to the report.

# 8. APPENDIX - species lists

Brent Island Survey 2015. Total species list, and occurrence in 2004,2009 and 2015 surveys. Species with names in bold have been recorded 2009-2015, those in italics only in 2004. Species highlighted were only found in Areas A and B including bridge in 2015 survey.

| WILD FLOWERS'   |                                  | 2004 | 2009 | 2015  |
|---|----------------------------------|------|------|-------|
| Achillea millefolium  | Yarrow                           | •    | •    | •     |
| Adoxa moschatellina   | Moschatel                        |      |      |       |
| Aegopodium podagraria                                       | Ground-elder                     | •    | •    | •     |
| Ajuga reptans   | Bugle                            | •    |      | •     |
| Alliaria petiolata  | Garlic Mustard                   |      | •    |       |
| Allium ursinum  | Ramsons                          | •    | •    | •     |
| Anemone nemorosa  | Wood Anemone                     | •    |      |       |
| Anemone x hybrida   | Japanese Anenome                 |      |      | •     |
| Angelica sylvestris   | Wild Angelica                    | •    |      | •     |
| Aquilegia vulgaris  | Columbine                        | •    |      |       |
| Anthriscus sylvestris                                       | Cow Parsley                      | •    | •    | •     |
| Apium nodiflorum  | Fool's Water-cress               |      |      |       |
| Arctium minus   | Lesser Burdock                   | •    | •    | •     |
| Arum maculatum  | Lords-and-Ladies                 | •    |      | •     |
| Calystegia sepium   | Hedge Bindweed                   |      |      |       |
| Cardamine flexuosa  | Wavy Bitter-cress                | •    |      | •     |
| Cardamine hirsuta   | Hairy Bitter-cress               |      |      |       |
| Cardamine pratensis   | Cuckoo-flower                    | •    |      | 0.000 |
| Centaurea nigra   | Common Knapweed                  |      |      | •     |
| Cerastium fontanum  | Common Mouse-ear                 |      |      |       |
| Chaerophyllum temulum                                       | Rough Chervil                    |      |      |       |
| Chrysosplenium oppositifolium                               | Opposite-leaved Golden-saxifrage |      |      |       |
| Circaea lutetiana   | Enchanter's-nightshade           |      | _    | -     |
| Cirsium arvense   | Creeping Thistle                 |      | •    | •     |
|   | Spear Thistle                    |      | •    |       |
| Cirsium vulgare   | Pink Purslane                    | •    | 120  | 121   |
| Claytonia sibirica  |                                  | •    | •    | •     |
| Conopodium majus  | Pignut                           | •    | •    | •     |
| Crocosmia x crocosmiiflora                                  | Montbretia                       | •    | •    | •     |
| Cymbalaria muralis  | lvy-leaved Toadflax              | •    | •    | •     |
| Digitalis purpurea  | Foxglove                         | •    | •    | •     |
| Dipsacus fullonum   | Teasel                           | •    | •    |       |
| Epilobium montanum  | Broad-leaved Willowherb          | •    |      | •     |
| Epilobium obscurum  | Short-fruited Willowherb         |      |      |       |
| Eupatorium cannabinum                                       | Hemp-agrimony                    |      |      |       |
| Euphorbia x pseudovirgata                                   | Twiggy Spurge                    | •    |      |       |
| Fragaria vesca  | Wild Strawberry                  |      |      |       |
| Galium aparine  | Cleavers                         | •    | •    | •     |
| Galium odoratum   | Woodruff                         | •    |      |       |
| Geranium dissectum  | Cut-leaved Cranesbill            | •    |      |       |
| Geranium phaeum   | Dusky Cranesbill                 | •    |      | •     |
| Geranium robertianum  | Herb-Robert                      | •    | •    | •     |
| Geum urbanum  | Wood Avens                       | •    | •    | •     |
| Glechoma hederacea  | Ground-ivy                       | •    | •    | •     |
| Hedera helix  | lvy                              | •    | •    | •     |
| Heracleum sphondylium                                       | Hogweed                          | •    | •    | •     |
| Hyacinthoides hispaniola                                    | Spanish Bluebell                 |      | •    |       |
| Hyacinthoides non-scripta                                   | Bluebell                         | •    | •    | •     |
| Hypericum androsaemum                                       | Tutsan                           | •    |      | •     |
| Hypochaeris radicata  | Cat's-ear                        | •    | •    | •     |
| Impatiens glandulifera                                      | Indian Balsam                    |      | •    | •     |
| Lamiastrum galeobdolon                                      | Yellow Archangel                 | •    |      | •     |
| Lamium purpureum  | Red Dead-nettle                  | •    | •    |       |
| Lapsana communis  | Nipplewort                       |      |      | •     |
| 935 (947 ■ 1.00 (947 10 10 10 10 10 10 10 10 10 10 10 10 10 |                                  |      |      | 0.198 |

| Lathyrus linifolius                                 | Bitter-vetch                           |     |          |      |
|---|--|-----|----------|------|
| Leontodon autumnalis                                | Autumn Hawkbit                         | •   |          |      |
| Leontodon hispidus                                  | Rough Hawkbit                          | •   | •        |      |
| Lotus corniculatus                                  | Common Bird's-foot-trefoil             | •   | •        | •    |
| Lysichiton americanus                               | American Skunk-cabbage                 |     | •        | •    |
| Lysimachia nemorum                                  | Yellow Pimpernel                       | •   | •        |      |
| Mercurialis perennis                                | Dog's Mercury                          | •   | •        | •    |
| Moehringia trinervia                                | Three-nerved Sandwort                  |     |          |      |
| Myosotis sylvatica                                  | Wood Forget-me-not                     | •   |          |      |
| Narcissus agg.                                      | Cultivated Daffodil                    | •   |          |      |
| Oenanthe crocata                                    | Hemlock Water-dropwort                 | •   | •        | •    |
| Oxalis acetosella                                   | Wood-sorrel                            | •   |          | •    |
| Oxalis exilis                                       | Least Yellow-sorrel                    |     |          |      |
| Persicaria amplxicaule                              | Red Bistort                            |     |          | •    |
| Petasites hybridus                                  | Butterbur                              | •   |          |      |
| Plantago lanceolata                                 | Ribwort Plantain                       | •   | •        | •    |
| Plantago major                                      | Greater Plantain                       | •   |          |      |
| Polygonatum x hybridum                              | Garden Solomon's-seal                  |     |          | •    |
| Primula vulgaris                                    | Primrose                               | •   |          | •    |
| Prunella vulgaris                                   | Self-heal                              | •   |          |      |
| Ranunculus acris                                    | Meadow Buttercup                       |     |          |      |
| Ranunculus ficaria                                  | Lesser Celandine                       |     |          |      |
| Ranunculus repens                                   | Creeping Buttercup                     |     |          |      |
| Rubus fruticosus agg.                               | Bramble                                |     | •        |      |
| Rumex acetosa                                       | Common Sorrel                          |     | 100      |      |
| Rumex crispus                                       | Curled Dock                            |     |          | - 5  |
| Rumex obtusifolius                                  | Broad-leaved Dock                      |     | •        |      |
| Rumex sanguineus                                    | Wood Dock                              |     |          |      |
| Sanicula europaea                                   | Sanicle                                |     |          |      |
| Scrophularia nodosa                                 | Common Figwort                         |     |          |      |
| Silene dioica                                       | Red Campion                            |     |          |      |
| Sison amomum  | Stone Parsley                          | 150 | <b>T</b> | i iš |
| Stachys sylvatica                                   | Hedge Woundwort                        | •   |          |      |
| Stellaria graminea                                  | Lesser Stitchwort                      |     |          |      |
| Stellaria media                                     | Chickweed                              |     |          | •    |
| Stellaria holostea                                  | Greater Stitchwort                     |     | _        |      |
| Taraxacum agg.                                      | Common Dandelion                       |     |          |      |
| Teucrium scorodina                                  | Wood Sage                              |     | •        |      |
| Torilis japonica                                    | Upright Hedge-parsley                  | Ĭ   |          |      |
| Trifolium pratense                                  | Red Clover                             |     | _        |      |
| Trifolium repens                                    | White Clover                           | -   |          | •    |
| Umbilicus rupestris                                 | Navelwort                              | -   |          | •    |
| Urtica dioica                                       | Common Nettle                          |     |          |      |
| Veronica arvensis                                   | Wall Speedwell                         | •   |          | _    |
| Veronica arvensis Veronica chamaedrys               | Germander Speedwell                    |     |          |      |
| Veronica chamaedrys Veronica hederifolia            |  | •   | •        | •    |
| Veronica mederifolia Veronica montana               | lvy-leaved Speedwell<br>Wood Speedwell | _   |          |      |
| ,   | Thyme-leaved Speedwell                 | •   | •        | •    |
| Veronica serpyllifola Viola sp.(probably riviniana) |  | _   |          | •    |
| viola sp.( probably rivillialia)                    | Violet (prob. Common Dog-violet)       | 75  | 48       | 65   |
|   |  | 13  | 40       | 63   |

# GRASSES, SEDGES & RUSHES

| Agrostis capillaris     | Common Bent        | • | • | • |
|-------------------------|--------------------|---|---|---|
| Agrostis stolonifera    | Creeping Bent      |   |   |   |
| Alopecurus pratensis    | Meadow Foxtail     | • | • | • |
| Anthoxanthum odoratum   | Sweet Vernal-grass | • | • | • |
| Arrhenatherum elatius   | False Oat-grass    |   |   | • |
| Brachypodium sylvaticum | Wood false-brome   | • |   | • |

| Carex pendula  | Pendulous Sedge   |    |    | •  |
|--|---|----|----|----|
| Carex remota   | Remote Sedge  |    | •  | •  |
| Cynosurus cristatus  | Crested Dog's-tail  |    | •  | •  |
| Dactylis glomerata   | Cock's-foot   | •  | •  | •  |
| Festuca gigantea   | Giant Fescue  | •  |    | •  |
| Festuca rubra  | Red Fescue  | •  | •  | •  |
| Holcus lanatus   | Yorkshire-fog   | •  | •  | •  |
| Holcus mollis  | Creeping Soft-grass   |    |    | •  |
| Juncus effusus   | Soft-rush   | •  |    | •  |
| Lolium perenne   | Perennial Rye-grass   | •  | •  | •  |
| Luzula campestris  | Field Wood-rush   |    | •  |    |
| Luzula sylvatica   | Great Wood-rush   | •  |    |    |
| Melica uniflora  | Wood Melick   |    |    |    |
| Phleum pratense  | Timothy   |    |    |    |
| Poa annua  | Annual Meadow-grass   |    |    |    |
| Poa nemoralis  | Wood Meadow-grass   |    | •  |    |
| Poa pratense   | Smooth Meadow-grass   | -  |    |    |
| Poa trivialis  | Rough Meadow-grass  | -  | _  |    |
| Foa trivians   | Rough Meadow-grass  | 19 | 14 | 19 |
|  |   | 13 | 14 | 13 |
| FERNS  |   |    |    |    |
| Asplenium trichomanes  | Maidenhair Spleenwort   | •  | •  | •  |
| Athyrium filix-femina  | Lady-fern   | •  | •  | •  |
| Dryopteris affinis   | Scaly Male-fern   | •  |    | •  |
| Dryopteris dilatata  | Broad Buckler-fern  | •  | •  | •  |
| Dryopteris filix-mas   | Male-fern   |    | •  | •  |
| Phyllitis scolopendrium  | Hart's-tongue   | •  | •  | •  |
| Polypodium agg.  | Polypody sp.  | •  | •  | •  |
| Polystichum setiferum  | Soft Shield-fern  | •  |    | •  |
| Pteridium aquilinum  | Bracken   | •  | •  | •  |
|  |   | 8  | 7  | 9  |
| TREES, SHRUBS & WOODY CLIMBER  | s   |    |    |    |
| Acer pseudoplatanus  | Sycamore  |    |    | •  |
| Alnus glutinosa  | Alder   |    |    |    |
| Clematis vitalba   | Traveller's-joy   |    |    |    |
| Corylus avellana   | Hazel   |    |    |    |
| Cotoneaster sp.  | Cotoneaster   |    |    | -  |
| - V  | Hawthorn  |    |    |    |
| Crataegus monogyna<br>Dahne laureola   | Spurge-laurel   |    |    | •  |
|  |   |    |    | •  |
| Fagus sylvatica  | Beech   |    |    | •  |
| Fraxinus excelsior   | Ash   |    |    | •  |
| llex aquifolium  | Holly   |    |    | •  |
| Lonicera periclymenum  | Honeysuckle   |    |    | •  |
|  | antital Changes   |    |    | •  |
| Prunus avium   | Wild Cherry   |    |    |    |
| Prunus laurocerasus  | Cherry Laurel   |    |    | •  |
| Prunus laurocerasus<br>Prunus spinosa  | Cherry Laurel<br>Blackthorn   |    |    | :  |
| Prunus laurocerasus<br>Prunus spinosa<br>Quercus robur   | Cherry Laurel<br>Blackthorn<br>Pedunculate Oak  |    |    | :  |
| Prunus laurocerasus<br>Prunus spinosa<br>Quercus robur<br>Rhododendron ponticum  | Cherry Laurel<br>Blackthorn<br>Pedunculate Oak<br>Rhododendron                              |    |    | •  |
| Prunus laurocerasus<br>Prunus spinosa<br>Quercus robur<br>Rhododendron ponticum<br>Rosa arvensis                                 | Cherry Laurel<br>Blackthorn<br>Pedunculate Oak  |    |    | :  |
| Prunus laurocerasus<br>Prunus spinosa<br>Quercus robur<br>Rhododendron ponticum  | Cherry Laurel<br>Blackthorn<br>Pedunculate Oak<br>Rhododendron                              |    |    | :  |
| Prunus laurocerasus<br>Prunus spinosa<br>Quercus robur<br>Rhododendron ponticum<br>Rosa arvensis                                 | Cherry Laurel Blackthorn Pedunculate Oak Rhododendron Field-rose Dog-rose Grey Willow       |    |    | :  |
| Prunus laurocerasus<br>Prunus spinosa<br>Quercus robur<br>Rhododendron ponticum<br>Rosa arvensis<br>Rosa canina                  | Cherry Laurel<br>Blackthorn<br>Pedunculate Oak<br>Rhododendron<br>Field-rose<br>Dog-rose    |    |    | •  |
| Prunus laurocerasus<br>Prunus spinosa<br>Quercus robur<br>Rhododendron ponticum<br>Rosa arvensis<br>Rosa canina<br>Salix cinerea | Cherry Laurel Blackthorn Pedunculate Oak Rhododendron Field-rose Dog-rose Grey Willow       |    |    | :  |
| Prunus laurocerasus Prunus spinosa Quercus robur Rhododendron ponticum Rosa arvensis Rosa canina Salix cinerea Sambucus nigra    | Cherry Laurel Blackthorn Pedunculate Oak Rhododendron Field-rose Dog-rose Grey Willow Elder |    |    | :  |