

VEGETATION SURVEY & ASSESSMENT of GRASSLAND & HEDGEROWS at GREAT DIXTER

Dolphin Ecological Surveys 2018



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1.0 INTRODUCTION

This report describes a botanical survey of grassland and hedgerow habitats that was carried out at the Great Dixter estate in Northiam, East Sussex, central grid reference TQ819251.

The vegetation survey forms part of a biodiversity audit and historic landscape assessment of Great Dixter, supported by the Heritage Lottery Fund. Concurrent biological surveys of invertebrates, birds and woodland vegetation are all providing important information about the ecological value of the Great Dixter gardens and wider estate land. The results will be used in the preparation of a conservation management plan for the entire estate.

The primary focus of the vegetation survey was on habitats outside the formal gardens. Three ponds and adjoining habitats were assessed briefly but were not fully surveyed due to time constraints.

The semi-natural grassland, hedgerows and ponds that were included in this assessment are shown in Figures 1 and 2.

The garden meadows were not included in the botanical survey but a broad assessment of their ecological interest is included here because they are an important part of the Great Dixter estate's grassland resource.

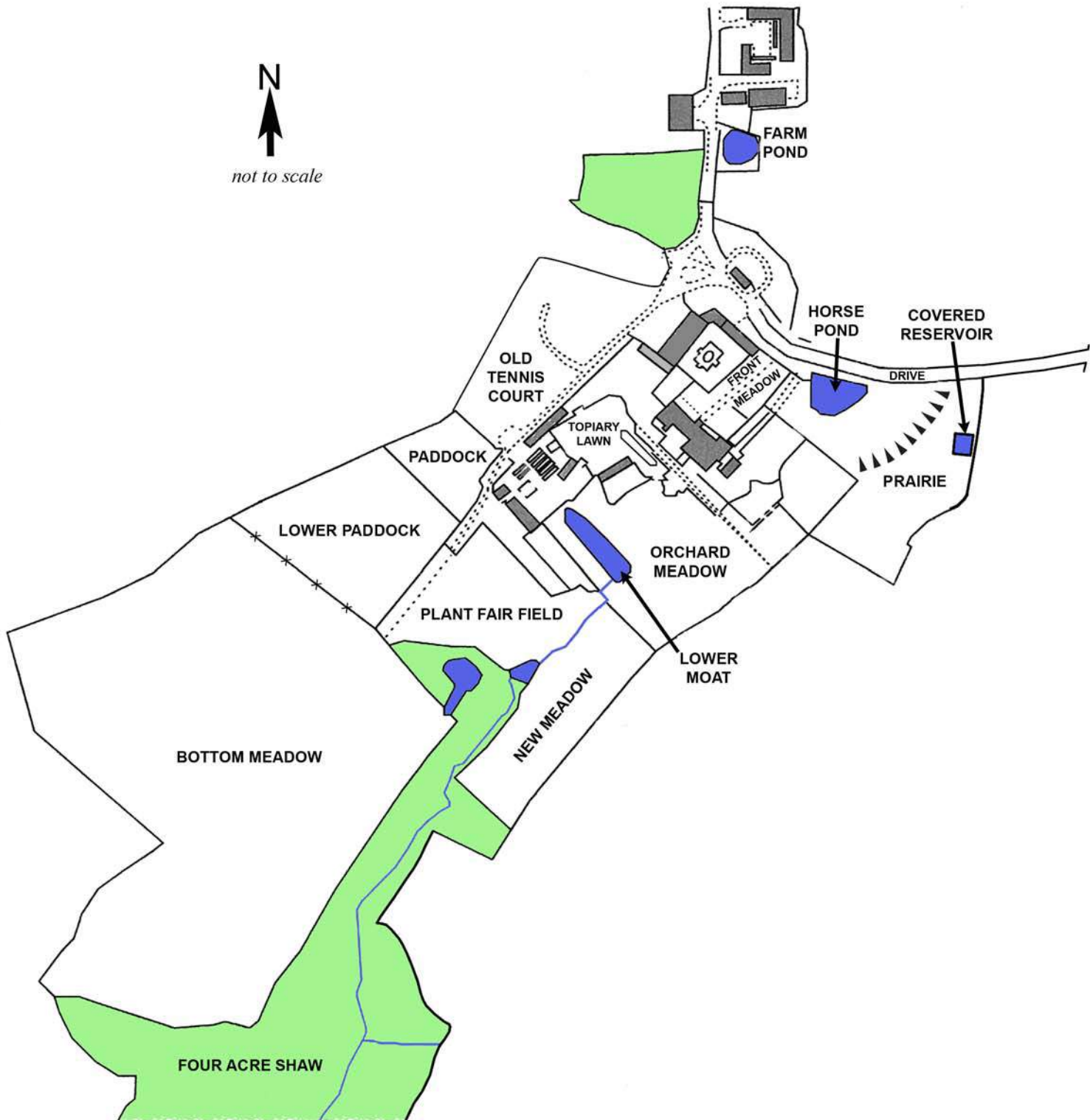
The management team at Great Dixter are very well informed about the ecological importance of the gardens and the wider estate as well as their potential for environmental education to a variety of different audiences, from young children to landowners, gardeners and gardening professionals.

Their sensitive and nuanced management of the garden meadows in particular demonstrates how native plant species can be seamlessly integrated into the formal gardens. Visitors to the garden also gain an insight into the immense wildlife value of the non-native plant assemblages for native fauna, particularly pollinators such as bees (Phillips 2018).

This report includes some broad suggestions for management that would further enhance the overall ecological value of semi-natural habitats within the estate, particularly grassland and hedgerows. These are likely to be similar to recommendations arising from other strands of the biodiversity audit.

For the sake of brevity the scientific names of plants are only given the first time a species is mentioned in the report. Thereafter its common name is used within the text but the Appendix species tables contain both names of all species recorded.

Great Dixter
Figure 1 Site Map



2.0 SURVEY METHODS

2.1 Survey Timing

During the summer of 2018 four survey visits were made to Great Dixter. These were timed to span the main grassland plant flowering season on 15th May, 18th May, 27th June and 17th August. The grassland areas, hedgerows and ponds were all surveyed during the same survey period.

2.2 Survey Constraints

Recorder bias and error are always factors in the results of the vegetation survey. Consequently the species lists in the Appendix should not be considered comprehensive. They are intended to provide a baseline of information for each hedgerow and grassland area which can be added to when new species are recorded.

Whilst fieldwork took place during the optimal survey period for most grassland species in order to limit seasonal bias, it is likely that early season ground flora species in hedgerows may have been missed. In addition some hedges were only accessible from one side which may also have led to some species being over-looked.

Further recording of the wildlife at Great Dixter is likely to continue in future years and this baseline data will contribute to the process of monitoring changes over time.

2.3 Grassland Areas

Four fields were included in the grassland survey; Bottom Meadow, Lower Paddock, Plant Fair Field and New Meadow.

A walkover survey of each area was carried out following a zig-zag route across each field. A handheld GPS was used to track the route and ensure all parts of the fields were traversed equally.

Vascular plant species observed in each field were recorded and an estimate of their abundance made on the DAFOR scale (D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare. These can be qualified by using L= Locally to indicate where species clusters occur). The plants recorded are shown in Table 1 within the Appendix.

Target notes were used to record the location of features or species of note in the areas surveyed. These features are described in section 3 and Figure 2 shows the target note locations.

2.4 Hedgerows

The formal hedges within the gardens were not included in this survey which was focused on the more semi-natural features of the Great Dixter estate.

The standard methodology used for hedgerow surveys is contained within the Hedgerow Survey Handbook (Defra 2007). This methodology is most often adopted for landscape scale surveys of hedgerows and is based on sampling short lengths of multiple hedges. It uses the broad definition of a hedgerow as being “any boundary line of trees or shrubs over 20m long and less than 5m wide between major woody stems at the base.”

A hedgerow end point or node is:

1. Any point of connection between two, or more, hedgerows or to other features e.g. fences, walls, ditches, roads
2. The point at which a hedgerow stops and there is a gap of more than 20m to the next hedgerow (e.g. where the hedgerow ends in the middle of a field)
3. The point at which the hedgerow links to a woodland or other semi-natural habitat such as a pond

Where sections of a hedgerow between end points goes around a sharp corner (perhaps where there was once an historic T junction or intersection of hedgerows), they are regarded as the same hedgerow.

Variations along the length of a hedgerow sometimes necessitate dividing it into “survey units”. At Great Dixter these included

1. The point at which hedgerows changed character from one hedgerow type to another for 20m or more
2. Where there was a distinct change of hedgerow height for lengths of 20m or more

The Defra definition of hedgerows was adopted for the Great Dixter survey but rather than sampling vegetation along a short, uniform length of each hedgerow, the entire hedge was surveyed to maximise the species data gathered.

The presence of woody plants in the hedgerows and the herbaceous species that occur up to approximately 1m from the hedge bases was recorded. A measure of abundance for each species was not estimated for the hedgerows. Each hedgerow is described separately in Section 3 and the plants present are shown in Tables 1 and 2 within the Appendix.

The approximate length of each hedgerow survey unit was measured from aerial images and is given to the nearest 5m in the individual hedge descriptions.

2.5 Ponds & Garden Meadows

A brief habitat assessment was made of three ponds that are in close proximity to the grassland or hedgerows at Great Dixter; Lower Moat, Horse Pond and the Farm Pond. There are many planted cultivars and exotic species in and around the ponds and no attempt was made to fully survey this vegetation, however some observations were made on any native vegetation present.

The garden meadow areas (Orchard Meadow, Front Meadow, Topiary Lawn and The Prairie) were also assessed very briefly to allow a comparison to be made with the grassland areas outside the formal gardens.

These brief assessments, which did not include botanical surveys of the habitats, were intended to add context to the more detailed vegetation surveys of other areas and to inform the management recommendations that are made in Section 4.

Great Dixter
Figure 2 Hedges & Target Notes



3.0 SURVEY RESULTS

3.1 Grassland Areas

3.1.1 Bottom Meadow

Bottom Meadow lies to the southwest of the formal gardens and at approximately 3.2 ha/8 acres it is currently the largest area of semi-natural grassland within the Great Dixter estate. This field is bounded by Four Acre Shaw to the south and the Little Dixter boundary hedgerow (H1) to the north. There is a wire fence separating it from Lower Paddock.



View of Bottom Meadow

In 2018 Bottom Meadow was grazed by small group of elderly sheep and mown for hay in August with a wide strip of vegetation left uncut along the field edges.

45 vascular plant species were recorded in Bottom Meadow, 12 grasses and 33 non-grass species.

Bottom Meadow comprises rather species-poor, semi-improved grassland on a gentle south-facing slope. Much of the field has a tall, grassy sward with some tussocky areas but where bent-grasses *Agrostis spp.* dominate the sward is shorter.

The sward of the upper slopes shows the highest levels of agricultural improvement with much perennial rye-grass *Lolium perenne*, Yorkshire fog *Holcus lanatus*, meadow foxtail *Alopecurus pratensis* and a high proportion of white clover *Trifolium repens*. There are a few patches of birds-foot-trefoil *Lotus spp.* in this area but few other forbs.

The lower slopes have a more semi-improved character with rough meadow-grass *Poa trivialis*, bent-grasses and Yorkshire fog prominent in the sward along with frequent buttercups *Ranunculus spp.*, locally frequent lesser stitchwort *Stellaria graminea*, occasional patches of bird's-foot-trefoil and other legumes. A small amount of yellow rattle *Rhinanthus minor* occurs in the south of the Bottom Meadow and creeping thistle *Cirsium arvense* is locally abundant.

The most diverse patches of sward in the Bottom Meadow are quite small but typically support stands of widespread wildflower such as greater bird's-foot-trefoil *Lotus pedunculatus* and thyme-leaved speedwell *Veronica serpyllifolia* along with scattered common knapweed *Centaurea nigra*,

selfheal *Prunella vulgaris*, lesser celandine *Ficaria verna*, common cat's-ear *Hypochaeris radicata* and common sorrel *Rumex acetosa*. Wood anemone *Anemone nemorosa* extends from the ground flora of Four Acre Shaw into the grassland sward along the woodland edge in the southeastern corner of the field.

The most herb-rich parts of Bottom Meadow are its edges, especially along the northern boundary hedgerow. Parts of the southern edges also have a greater variety of herbs and fine-leaved grasses than the main body of the field.

The sward along the southeastern edge adjoining Four Acre Shaw is grassy but has a more damp and lush character than the rest of the field with locally frequent meadow buttercup *Ranunculus acris*. Trees and shrubs from the woodland overhang the field and a few large branches have fallen from the woodland into the meadow. Occasional oak *Quercus sp.* seedlings and blackthorn *Prunus spinosa* suckers are present along this edge of Bottom Meadow (Target Note 1).



Edge of Bottom Meadow and Four Acre Shaw

In the southwestern tip of the field, next to some fallen branches, a group of three early purple orchids *Orchis mascula* was noted within the tall grassland sward.

Further north, along the woodland edge, there is structurally complex woodland edge vegetation comprising tall herbs and dense bramble *Rubus fruticosus* adjoining a small copse (Target Note 2).



Edge of Bottom Meadow and the copse

The copse is unfenced so the sheep are free to roam from Bottom Meadow into this area of woodland and they clearly shelter here on occasion. Below the overhanging canopy of the copse where the sheep, and probably deer, congregate there is an area of bare ground and a strip of coarse vegetation including broad-leaved dock *Rumex obtusifolius*, stinging nettle *Urtica dioica* and bramble (Target Note 3).

In the eastern corner of Bottom Meadow, near the entrance to the Plant Sale Field, there is a large mound of sandy soil (Target Note 4). This mound has a sunny, south-facing slope which has been colonised by a diverse mixture of ruderal plants and perennial herbs for example common ragwort *Senecio jacobaea*, stinging nettle, creeping thistle and ox-eye daisy *Leucanthemum vulgare*.



Sandy mound in Bottom Meadow

A layer of dead vegetation and old hay has accumulated in parts of Bottom Meadow which suggests that in previous years hay collection may have been intermittent and/or grazing pressure was too light to remove the season's growth. The thatch of vegetation will tend to suppress germination of annual plants and increase soil nutrient levels as it rots down. Nutrient demanding and competitive plant species such as docks, thistles and nettle will tend to thrive in these conditions rather than low-growing herbs and fine-leaved grasses.



Thatch in Bottom Meadow

Bottom Meadow is currently not of any particular botanical interest but it is a large expanse of grassland with some structural variation within its sward adjoining woodland and ancient hedgerow habitats with a sunny aspect. These features of the field make it potentially valuable for a variety of native fauna, including grassland invertebrates such as butterflies, spiders, grasshopper, dragonflies and beetles. There is very good potential for changes in habitat management to promote greater biodiversity (see Section 4).

Field vole *Microtus agrestis* are clearly abundant in Bottom Meadow and this will attract their predators such as kestrel *Falco tinnunculus*, barn owl *Tyto alba* and fox *Vulpes vulpes*. Well worn tracks and several large badger *Meles meles* latrines are present near the boundary with Four Acre Shaw, indicating that Bottom Meadow provides a rich feeding ground for this mammal.

Common lizards *Zootoca vivipara* were twice observed basking on the upper edge of Bottom Meadow, near the base of the northern boundary hedgerow.

Bottom Meadow is the largest of the fields surveyed but had the lowest total number of plant species recorded and the highest proportion of grasses in the sward. It also had the most weedy, coarse species present.

3.1.2 Lower Paddock

Lower Paddock is an area of approximately 0.5ha/1.4 acres on a slight slope that is currently separated from Bottom Meadow by a wire fence but in the past these two areas were most likely to have been managed as a single field.



View of Lower Paddock

The upper section of Lower Paddock is mown regularly and used as an overflow parking area but the remainder is treated as a hay meadow. There are unmown hedge margins on three sides of Lower Paddock. These edge zones are all relatively species-rich and provide valuable structurally diverse habitat for fauna.

48 vascular plant species were recorded in Lower Paddock, 11 grasses and 37 non-grass species.

The sward in much of Lower Paddock has been significantly modified by seed germination trials that took place at Great Dixter in association with the Weald Meadows Initiative in October 2004. At that

time areas of turf were stripped and a series of trial plots were sown with seed of either single species or mixed species native wildflower and grasses (Dawn Brickwood *pers.comm.*).

The single species plots contained common birds-foot-trefoil *Lotus corniculatus*, ox-eye daisy, common knapweed, crested dog's-tail *Cynosurus cristatus*, sweet vernal-grass *Anthoxanthum odoratum*, devil's-bit scabious *Succisa pratensis*, yarrow *Achillea millefolium* and burnet-saxifrage *Pimpinella saxifraga*.

Two mixed plots were sown, one contained musk mallow *Malva moschata*, dyer's greenweed *Genista tinctoria* and meadow vetchling *Lathyrus pratensis* and another of "Great Dixter Mix" derived from the garden meadows.

The overflow parking area, which presumably did not have any trial plots, probably represents an example of the pre-2004 grassland sward. The semi-improved species-poor sward in this area is dominated by perennial rye-grass and white clover with just occasional examples of widespread herbs such as common knapweed, meadow vetchling, meadow buttercup and bird's-foot-trefoil.



Lower Paddock showing parking area and rope fence

There is a rope fence marking the extent of overflow car park and beyond this barrier the sward of the trial area is much more diverse and herb-rich. Though locally quite tall and bulky the sward contains much common knapweed, meadow vetchling and red clover *Trifolium pratense*. Yellow rattle is locally frequent and some stands of creeping thistle also occur.

Fourteen years on from the trial most of the widespread meadow species that were sown are present in some abundance and some still show local concentrations derived from the single species plots. However, neither devil's-bit scabious nor musk mallow was recorded here during 2018 and burnet-saxifrage was present at only very low frequency.

Three species of particular interest are present in low numbers in Lower Paddock; dyer's greenweed, corky-fruited water-dropwort *Oenanthe pimpinelloides* and green-winged orchid *Anacamptis morio*. All three species are now scarce and declining nationally as well as being considered characteristic of ancient meadows in the High Weald that have had long continuity of stable management.

These three species are all highly likely to be derived from the Great Dixter mix and mixed seed trial plots rather than from the seedbank of the Lower Paddock. Dyer's greenweed was a component of

the mixed plots and the other two species occur in the garden meadows so were almost certainly found in the Great Dixter Mix. Their presence in Lower Paddock illustrates that it is possible for uncommon and threatened species to be successfully introduced into an impoverished grassland sward but that populations of these species can be very slow to expand.

3.1.3 Plant Fair Field

Plant Fair Field is approximately 0.37ha/1 acre of grassland enclosed by hedges and woodland edge habitat on three sides with the café and cottage garden on its northern side. The pole shelters used during plant fairs are dotted around the field.



View of Plant Fair Field

The Great Dixter invertebrate surveys (Phillips 2017/18) has identified Plant Fair Field as a particularly important area for invertebrates that has a range of features not found in other parts of the estate.

56 vascular plant species were recorded in the Plant Fair Field, 13 grasses and 43 non-grass species.

Most of Plant Fair Field is of rather low botanical interest, despite having the second highest species total of the four grassland fields surveyed. Its generally tall, coarse and very grassy sward has a high proportion of nutrient demanding herbs such as hogweed *Heracleum sphondylium*, nettle and docks. Hogweed is particularly prominent along its southern margin and has been identified as an important resource for invertebrates (Phillips 2017).

Yellow rattle is abundant in Plant Fair Field and has probably been deliberately introduced to reduce grass vigour. Common birds-foot-trefoil is also a prominent component of the sward.

Two parts of Plant Fair Field have a distinctly different and much more species-rich sward than the rest of the field. The first is a narrow strip, approximately 10m wide, alongside the garden fence in the north of the field (Target Note 5). The diverse sward along the garden edge appears to be a relict of natural, unimproved grassland and has fine-leaved grasses with corky-fruited water-dropwort, common birds-foot-trefoil, yellow rattle, red clover, common knapweed, ox-eye daisy, field woodrush *Luzula campestris*, yarrow and common ragwort. Old anthills and patches of bramble scrub along the fenceline add to the structural variety of this small but ecologically valuable part of the field.



Species-rich sward on the garden edge in Plant Fair Field

The second species-rich area is in the eastern corner of the field towards the Orchard (Target Note 6). The sward here includes meadow vetchling, common spotted orchid *Dactylorhiza fuchsii*, common knapweed, yellow rattle, red clover, common sorrel, meadow buttercup, common vetch *Vicia sativa*, hairy sedge *Carex hirta* and common birds-foot-trefoil.



Species-rich sward in the eastern corner of Plant Fair Field

There are bramble thickets on the edges of Plant Fair Field as well as bare and trampled patches of ground in places.

Dwarf elder *Sambucus ebulus*, which has spread from the garden, is present in the north of Plant Fair Field around the café and the track from the nursery.

3.1.4 New Meadow

New Meadow is a long, rectangular field of approximately 0.37ha/1 acre that lies on a slight west-facing slope. It is largely enclosed by hedges and woodland with the upper reaches of the Four Acre gill stream along its western edge. Orchard meadow lies to its north and Plant Fair Field to its west.



View of New Meadow

62 vascular plant species were recorded in the New Meadow, 12 grasses and 50 non-grass species.

The sward has an extremely high cover of herbs with common knapweed, yellow rattle, mouse-ears *Cerastium spp.*, changing forget-me-not *Myosotis discolor*, ox-eye daisy, common birds-foot-trefoil, ribwort plantain *Plantago lanceolata* and buttercups amongst the most prominent species. This very flowery sward is likely to be a rich source of nectar and pollen for invertebrates.

The grasses present are predominantly fine-leaved species such as sweet vernal grass, meadow barley *Hordeum secalinum* and squirrel-tail fescue *Vulpia bromoides* though Yorkshire fog *Holcus lanatus* is a more bulky grass that is also present. The exception is around the field edges where more tussocky, robust grasses occur including meadow foxtail and cock's-foot *Dactylis glomerata*.

The New Meadow sward has been repeatedly enriched over recent years using hay cut from the garden meadows and is managed as a hay meadow with occasional sheep grazing. There are signs that this field has high levels of rabbit grazing and some deer grazing.

Rabbit activity is most intense along the south and west edges next to Four Acre Shaw. These areas are characterised by a sward with quite leafy clumps of common knapweed interspersed with low vegetation that contains concentrations of changing forget-me-not, lesser celandine and common spotted orchid. A few green-winged orchids were also noted in this area.

There are over-hanging tree branches from the woodland and hedgerow along the damp western side of the field. Creeping thistle is locally frequent along this margin as well as hogweed, hemlock water-dropwort *Oenanthe crocata*, bramble and bulky grasses.

The hedgerow (H8) along the eastern edge of New Meadow contains a mature, open grown oak *Quercus robur* and the remains of a hedgerow ash *Fraxinus excelsior* which has now fallen into the field. The stump and cut logs from the mature ash have been retained in the field to provide habitat for wildlife.



Fallen hedgerow ash in New Meadow

The sward is slightly more rank and grassy under the canopy of the hedgerow oak but a stand of corky-fruited water-dropwort is present in this area along with locally frequent docks and common cleavers *Galium aparine*.



Hedgerow oak and damp sward areas of New Meadow

New Meadow is the most species-rich of the four grassland areas surveyed and has the highest proportion of forbs to grasses.

3.2 Hedgerows

3.2.1 Overview

The hedgerows at Great Dixter vary in their age, structure, species composition and management. The twelve hedgerows that were included in this survey are briefly described below and the species recorded in each of them are contained in the Appendix.

Information about the origin of the hedgerows and their antiquity is likely to be contained within the landscape archaeology section of the biodiversity audit of Great Dixter (Bannister, N. *in prep*).

Whilst there is no nationally agreed definition, the term species-rich hedgerow¹ can be applied to almost all the hedges surveyed at Great Dixter. Even though plants from the entire length of each hedge were recorded (not just from 30m sections) all but one of the hedges have in excess of five woody species present (Table 2) and most have a rich basal ground flora, often influenced by their proximity to species-rich grassland.

3.2.2 Hedge 1

Hedge 1 is the longest hedgerow surveyed at approximately 250m. It averages approximately 1.5m high and 2m wide but is quite varied along its length. Most of the hedge has been managed by regular trimming.

In total 51 vascular plant species were recorded including 12 native woody species (excluding bramble).

This diverse hedgerow runs along the northern edge of Bottom Meadow and forms part of the boundary between Great Dixter and Little Dixter. This feature appears to be of considerable age and lies on a bank with some sizeable old stumps of field maple *Acer campestre*, ash and hornbeam *Carpinus betulus* in the hedge but no mature hedgerow trees.



View of Hedge 1

1 A hedgerow containing five or more woody, structural species that are native in the UK within a 30m section or has fewer than five woody species but a rich basal herbaceous flora (Defra 2007)

The short, western arm of Hedge 1 (Target Note 7) is dominated by hawthorn *Crataegus monogyna* and blackthorn with a margin of coarse grasses and tall herbs. This section has a wide, trimmed top and a rather gappy, grazed base. The top of the hedge grows out into Bottom Meadow but the hedgerow shrubs here are in fact rooted on Little Dixter land that lies at a significantly lower level.

The main section of Hedge 1 alongside Bottom Meadow (Target Note 8) contains a good mixture of woody species but is sparse in places. One section has overhanging, untrimmed branches that provide a shady area where the sheep congregate.

The grassy margins of the hedgerow are quite species-rich compared with the rather species-poor sward that is typical of Bottom Meadow. The south-facing, tussocky edge vegetation provides good habitat for reptiles and small mammals. There is some spread of woody scrub, especially blackthorn, bramble and dog rose *Rosa canina*, into the taller vegetation of unmown field margins.



Grassy margin and developing scrub along Hedge 1

The section of hedgerow next to Lower Paddock (Target Note 9) is taller, wider and less closely trimmed than the rest of Hedge 1 but the interior of the hedgerow is hollow in places, partly due to heavy trimming from adjoining land. The hedge base here is species-rich with grassland herbs such as ox-eye daisy, common dog-violet, greater birds-foot-trefoil, common knapweed, red clover, yarrow, ribwort plantain and imperforate St John's-wort *Hypericum maculatum*.

This is an excellent hedgerow for fauna as well as being botanically rich. Invertebrates including butterflies, grasshoppers and dragonflies were observed in some abundance along this sunny field edge and common lizard were twice noted basking in the hedge base.

3.2.3 Hedge 2

Hedge 2 is 20m of dense, wide blackthorn hedge that separates the Lower Paddock from the Paddock.

In total 10 vascular plant species were recorded including only 1 native woody species (excluding bramble).



View of Hedge 2

There are several young pine *Pinus sp.* trees planted alongside the hedge and its base and margin are dominated by tussocky grasses such as false oat-grass *Arrhenatherum elatius*, cock's-foot and common couch *Elytrigia repens* with only sparse herbs.

Hedge 2 ends at a track and beyond this is an area of scrub (rather than hedgerow) with small wood stores, a large branch pile, planted pines and bramble that links into Hedge 3.



Scrub, wood stores and branch pile between Hedge2 and Hedge 3

Hedge 2 is definitely not a species rich hedgerow but is nevertheless ecologically valuable to fauna for its dense structure and functions as part of the diverse hedgerow network.

3.2.4 Hedge 3

Hedge 3 is approximately 75m long and comprises a tall, outgrown hedgerow between Plant Fair Field and Lower Paddock.

In total 24 vascular plant species were recorded including 7 native woody species (excluding bramble).



View of Hedge 3

The woody species present include several mature ash trees as well as field maple, hornbeam and a wild service-tree *Sorbus torminalis*. Wild service-tree is an ancient woodland indicator species and is very characteristic of old hedgerows in the Weald of Sussex. In recent decades it has been widely planted outside its natural range.

On the eastern side of this hedgerow within Plant Fair Field there are wood piles, troughs and a charcoal kiln.

3.2.5 Hedge 4

Hedge 4 is a short length of hedgerow, approximately 3m high and 2m wide, that separates the Paddock and the Old Tennis Court area. There is a ditch along its north side and its southern side appears to be unmanaged in contrast with the trimmed northern side.

In total 36 vascular plant species were recorded including 6 native woody species (excluding bramble).



View of Hedge 4

There are wide, unmown margins on both sides of this hedgerow which contain a good range of tussocky grasses and a mixture of herbs including cow parsley *Anthriscus sylvestris*, common knapweed, great willowherb *Epilobium hirsutum*, hedge woundwort *Stachys sylvatica* and vetches *Vicia spp.*.

An old ash stump to the north of Hedge 4 and a large log pile at its eastern end are additional features of interest on this hedgerow.

3.2.6 Hedge 5

Hedge 5 is approximately 140m long and a very varied stretch of hedgerow that, together with Hedge 1, forms the boundary between Great Dixter and Little Dixter. These two parts of the same long property boundary are described here as separate hedgerow “survey units” because they have quite different characteristics. This is largely as a result of differences in their current management regimes.

Hedge 5 varies in height up to a maximum of 3.5m and its width exceeds 2m in places. It lies on a slight bank with an associated ditch.

In total 66 vascular plant species were recorded including 10 native woody species (excluding bramble).

At the southern end of Hedge 5 there are some large habitat piles of twigs and branches and the dense canopy of a mature cypress tree has shaded part of the hedgerow. A badger latrine is present and a well-used badger track crosses the sparse hedgerow at this point.



Gap in Hedge 5

Where Hedge 5 adjoins the Paddock in the south (Target Note 10), its top is trimmed but its eastern edge is free growing and merges into a dense bramble thicket. There are both mature and newly planted Scots pine *Pinus sylvestris* alongside this part of the hedgerow. One of the old trees has a luxuriant growth of ivy *Hedera helix* on its trunk. Mature ivy and dense bramble are both very useful resources for a range of fauna from invertebrates to birds and roosting bats and their presence enhances the ecological value of this hedgerow.

Alongside the Old Tennis Court (Target Note 11) Hedge 5 is generally wide, tall and only lightly managed. There is a wide grassy verge separating the hedgerow from an informal track and blackthorn from the hedge is suckering into the verge. This part of the hedge is taller and wider than the northern and southern sections.



Grassy verge and scrubby edge along Hedge 5

Hedge 5 changes direction in the north (Target Note 12) and here its base contains several plants typical of hedgerow and woodland habitats including frequent dogs mercury *Mercurialis perennis*, male fern *Dryopteris filix-mas*, hedge woundwort and greater stitchwort *Stellaria holostea*. This section of the hedgerow is very wide and sprawling but with a severely cut top.

In the crook of the hedge there is a hollow and damp flush (possibly the site of an old pond) with tall lush vegetation. There are tussocky grasses, stands of coarse herbs such as nettle, cow parsley, dock and creeping thistle as well as several wetland species such as meadowsweet *Filipendula ulmaria*, great willowherb and cuckoo-flower *Cardamine pratensis*.



Damp area at the crook of Hedge 5

The northern section of Hedge 5 adjoining the parking area (Target Note 13) lies on a well-defined bank and has a narrow but herb-rich margin. Ox-eye daisy, common knapweed, common birds-foot-trefoil, meadow vetchling and red clover are all present along this south-facing strip. There is a large old laid stem of field maple within the hedgerow. This section is no longer managed as a laid hedge but instead both sides are cut regularly to maintain a dense, relatively narrow structure.



Northern section of Hedge 5

Overall Hedge 5 is a structurally diverse hedgerow habitat with some good areas of adjoining vegetation that is likely to provide valuable feeding, resting and nesting habitat for fauna such as birds, dormice, reptiles, amphibians and invertebrates.

Some parts of this hedgerow are quite gappy, particularly where the top has been cut back severely and there are some large hollow areas in the body of the hedge.

3.2.7 Hedge 6

Hedge 6, which runs alongside the track between the potting shed and the parking area, is approximately 40m long and 1.25m in height. It appears to be of quite recent origin and is managed by regular trimming.

In total 34 vascular plant species were recorded including 6 native woody species (excluding bramble).



View of Hedge 6

The hedge is dominated by hawthorn with some yew *Taxus baccata*, dog rose, bramble and bay *Laurus nobilis*. There is a small wild service-tree within the hedgerow. Black bryony *Tamus communis* and wild hop *Humulus lupulus* scramble through the woody structure. At the base of the hedge there is a narrow but moderately flowery grass verge.

Adjoining the hedge there is an area of tussocky grasses with frequent cow parsley that contains a row of ash trees, some of which have woodpecker nest holes.

3.2.8 Hedge 7

Hedge 7 is a line of trees and unmanaged shrubs, approximately 40m long, that lies between the Plant Fair Field and the New Meadow. It adjoins the uppermost reaches of the gill stream that flows from the Lower Moat into Four Acre Shaw. This hedgerow is likely to be a remnant of the gill woodland that may never have been managed as a hedgerow.

In total 24 vascular plant species were recorded including 9 native woody species (excluding bramble).

The native woody species recorded along this relatively short feature include mature ash, oak and field maple trees with quite sparse hazel *Corylus avellana*, hawthorn and blackthorn shrubs.



View of Hedge 7

There is a wide margin of tussocky grasses on both sides of this hedgerow dominated by coarse herbs including nettle, hogweed and hemlock water-dropwort as well as occasional plants more typical of woodland ground flora such as lesser celandine, dog's mercury and bush vetch *Vicia sepium*.

3.2.9 Hedge 8

Hedge 8 is approximately 110m long and lies on a sloping bank between New Meadow and an area of pasture to the east. It is trimmed to a height of approximately 1.8m and is of varied width.

In total 30 vascular plant species were recorded including 9 native woody species (excluding bramble).

This typical mixed, farm hedgerow contains field maple, hazel, hawthorn, spindle *Euonymus europaeus* and blackthorn shrubs. There is a mature hedgerow oak in the north of the hedge and what remains of a hedgerow ash that has fallen into New Meadow.



View of Hedge 8 with hedgerow oak

At its northern end this hedgerow is quite narrow and sparse with a gappy “wineglass” structure where its base has been heavily grazed by sheep. The southern section beyond the field gate is much more dense and wide where it is protected from grazing by sprawling bramble banks that merge into the junction with Four Acre Shaw.



Southern part of Hedge 8 with sprawling bramble

The base of the hedge has a rich flora with patches of dog’s mercury and a diverse mixture of grasses and herbs that reflects the species present in New Meadow.

3.2.10 Hedge 9

Hedge 9 lies at the top of a bank on the western side of the concrete track that leads down to Great Dixter Farm. It is approximately 40m long and the hedgerow shrubs are sparse in places, especially at the southern and northern extremes.

In total 43 vascular plant species were recorded including 7 native woody species (excluding bramble).



View of Hedge 9

This short, mixed hedgerow is managed by regular trimming and its southern end is quite shaded by the trees of a small copse.

The hedge base and bank have a diverse flora that includes typical hedgerow species such as garlic mustard *Alliaria petiolata*, herb Robert *Geranium robertianum*, bluebell *Hyacinthoides non-scripta*, dog's mercury and primrose *Primula vulgaris* as well as a range of other grasses and herbs.

3.2.11 Hedge 10

Hedge 10 continues the line of Hedge 9 beyond a wide gap for a barn entrance. This survey unit comprises approximately 40m of a 2.5m high trimmed, dense hedgerow that continues along the track beyond the Great Dixter estate boundary.

In total 34 vascular plant species were recorded including 6 native woody species (excluding bramble).



View of Hedge 10

This very typical farm hedgerow of mostly hawthorn and blackthorn has a flowery grass verge at its base and there is a single plum tree *Prunus sp.* at its southern end near the barn entrance.

3.2.12 Hedge 11

Hedge 11 lies on a bank on the eastern side of the concrete track to Great Dixter Farm (opposite Hedge 9) and extends from an oak tree near the car park entrance to the Farm Pond.



View of Hedge 11

This 40m length of hedgerow contains much hawthorn, blackthorn and roses *Rosa spp.*. It is trimmed to approximately 1m high and is quite sparse. There are several mature trees including a large oak on the Farm Pond bank which cast shade on the hedgerow.

In total 42 vascular plant species were recorded including 7 native woody species (excluding bramble).

The verge and hedge base of Hedge 11 have a diverse flora. In the north a narrow, damp verge with a slight ditch supports clumps of pendulous sedge *Carex pendula*, remote sedge *Carex remota*, rushes *Juncus spp.* and a mixture of tall grasses and herbs including cow parsley.

As the hedge banks rise above the track surface there is more nettle in the sward along with foxglove *Digitalis purpurea*, male fern, dog's mercury and stone parsley *Sison amomum*.

The widest area of grassy verge on the corner near the car park is open and sunny with a quite flowery sward that includes bush vetch, meadow vetchling, hedge woundwort, greater stitchwort and common bird's-foot-trefoil.

3.2.13 Hedge 12

The Hedge 12 survey unit extends from the entrance to the disabled car park in the west to the end of the drive in the east. The hedgerow is approximately 175m long with the wooded bank adjoining it for approximately 90m.

Hedge 12 is part of what may be an ancient boundary or routeway feature on the north side of the entrance drive to Great Dixter. The eastern end of the hedgerow lies at the foot of a steep, wooded bank and there is a public footpath along its entire length. The vegetation of the wooded bank was included in the habitat assessment of Hedge 12 as it is clearly a feature of ecological and historic value.

In total 40 vascular plant species were recorded in the hedgerow including 11 native woody species (excluding bramble). On the adjoining bank there were 34 vascular plant species including 13 woody species.

The western end of the hedgerow (Target Note 14) comprises a trimmed, mixed species hedge approximately 2m high and up to 1m wide with predominantly native woody species and a narrow, mown, grassy verge alongside it.



The western end of Hedge 12

About 20m from the western end of the hedge there is a slight dog-leg and a narrow break in the hedgerow for pedestrian access from the drive to the public footpath on the north side of the hedge.

From this point eastwards the height of the hedgerow varies considerably from approximately 3m down to 1.5m. There is a short 3-4m high offset section of hedge that screens the entrance to a toilet block.

The eastern part of the hedgerow (Target Note 15) is shorter and more sparse than the west part and has several gaps. There is a mixture of woody species here such as hazel, hawthorn and holly *Ilex aquifolium* with ivy quite frequent within the hedge.



The eastern part of Hedge 12

This eastern section of Hedge 12 appears to be of quite recent origin and may have been planted to separate the public footpath from the drive. A single violet helleborine *Epipactis purpurata* was

noted at the base of the hedgerow (Target Note 16) and there may be other individuals of this ancient woodland indicator species along the wooded bank.

The remains of a much older native hedgerow are present at the top of the wooded bank on the north side of the footpath.

The flora of the bank is diverse and includes some species that are characteristic of ancient woodland and old woodbanks such as bluebell, primrose and barren strawberry *Potentilla sterilis*. Other plants typical of these habitat present on the bank are bracken *Pteridium aquilinum*, foxglove, soft rush *Juncus effusus*, common dog-violet *Viola riviniana*, honeysuckle *Lonicera periclymenum*, bluebell, broad buckler-fern *Dryopteris dilatata*, male fern, wood sage *Teucrium scorodonia*, greater stitchwort, hawkweed *Hieracium sp.* and nipplewort *Lapsana communis*.



The bank adjoining Hedge 12

A range of trees and shrubs occurs on the bank including sweet chestnut *Castanea sativa*, bay, holly and ash trees along with several mature oaks. A young wild service-tree is growing at the foot of one of the larger oaks.



Young wild service-tree on the bank

The row of old oaks along the north side of the drive are rooted on the bank, along its top edge and in the adjoining field. Several of these trees are of considerable age and likely to be of high biodiversity value.

Plants that originate in the gardens have become established in the eastern part of the bank. These include dwarf elder, Himalayan honeysuckle *Leycesteria formosa*, Kerria *Kerria japonica*, a bramble cultivar *Rubus sp.* and cotoneaster *Cotoneaster sp.*. Ideally these should be removed from the bank to prevent them displacing the native plant species that grow along this semi-natural wooded feature.

3.3 Ponds

3.3.1 Lower Moat

Lower Moat lies between the orchard and a wooded strip next to Plant Fair Field and is the most shallow and shaded of the three ponds covered in this brief assessment. There are mature trees around the pond, especially to the south, with overhanging branches and a dead tree that has fallen into the water.



View of Lower Moat

The lack of light, shallow water and deep silt in this pond mean that there appears to be little aquatic vegetation. By August water levels in this pond were very low and common duckweed *Lemna minor* covered much of the remaining water's surface.



Marginal vegetation around Lower Moat

There is a mixture of native and exotic plant species around the margins of Lower Moat. In the north garden plants predominate with much *Gunnera*, *Lysichiton* and *Impatiens*. The southern end has a higher proportion of native plant species on the pond edges and extending up the banks including yellow flag *Iris pseudacorus*, hemlock water-dropwort, gipsywort *Lycopus europaeus*, bittersweet *Solanum dulcamara*, bugle *Ajuga reptans*, great willowherb, wood anemone and lesser celandine. The bankside vegetation grades into the herb-rich flora of the Orchard meadow.



Grassy bank of Lower Moat

The wooded, southwestern edge of Lower Moat supports a narrow strip of woodland with a mixture of native and garden species. Canopy trees include ash, lime *Tilia x vulgaris*, cherry *Prunus sp.*, yew and oak over mixed shrubs of hazel, bramble, holly, *Rhododendron*, guelder-rose *Viburnum opulus*, dog rose and hawthorn. The diverse ground flora includes Solomon's-seal *Polygonatum sp.*, common dog-violet, false-brome *Brachypodium sylvaticum*, primrose, cow parsley, bush vetch, dog's mercury, herb Robert, nipplewort, germander speedwell *Veronica chamaedrys*, hogweed and male fern with scrambling bramble and black bryony in places.

3.3.2 Horse Pond

Horse Pond is a sizeable pond in the north of the formal gardens, adjacent to the drive. There are herb-rich areas of garden meadows adjoining its the south and west sides whilst a band of trees and scrub lines its northern bank. To the east is a low-lying marshy, mossy area that extends alongside the drive.

The banks and margins of the Horse Pond support diverse and structurally complex vegetation with the species-rich meadow flora extending up to the water's edge in places.

Native plant species and their cultivars in and around the pond margins include marsh marigold *Caltha palustris*, bogbean *Menyanthes trifoliata*, reed sweet grass *Glyceria maxima*, yellow flag, hemlock water-dropwort, purple loosestrife *Lythrum salicaria*, gipsywort, galingale *Cyperus sp.* and sedges *Carex spp.*. More exotic plants around the Horse Pond include water-lilies *Nymphaea*, pickerelweed *Pontederia cordata*, montbretia *Crocsmia*, *Gunnera* and bamboos.



Mixed emergent vegetation in Horse Pond

The northern edge of the pond supports a band of mixed trees and shrubs whilst scattered scrub is also present on the eastern and western pond banks. Plants in these scrubby areas include ash, alder *Alnus sp.*, willows *Salix spp.*, oak *Quercus spp.*, hazel, bramble, dogwood *Cornus sp.* and frequent dwarf elder along with black bryony, wild hop, nettle and false oat-grass.



View of Horse Pond

The Horse Pond's diverse species and structurally complex vegetation make it a very valuable habitat for wildlife. A mixture of sunny and shaded water on the margins further adds to the variety of conditions and water temperature zones present within the pond.

To the east of the Horse Pond, alongside the drive, there is an interesting pocket of land (Target Note 17). Part of this area was previously managed to promote meadow vegetation (Lloyd 2016) but its vegetation is now largely left to develop naturally.



The marshy area next to Horse Pond

On the wettest ground near the pond edges there are stands of nettle amongst grey willow *Salix cinerea*, poplar *Populus* sp. and aspen *Populus tremula* suckers.

The damp scrub grades into a marshy zone with a very mossy sward and a rich assemblage of native plants, many of them typical of wet grassland habitats. These include jointed rush *Juncus articulatus*, sharp-flowered rush *J. acutiflorus*, soft rush *J. effusus*, hemlock water-dropwort, creeping bent, water horsetail *Equisetum fluviatile* and greater birds-foot-trefoil. On the drier edges of the marshy grassland there are some of the typical meadow species found throughout the garden meadows such as sweet vernal-grass, green-winged orchid, common knapweed, meadow buttercup, selfheal, yellow rattle, common spotted-orchid, common sorrel, field wood-rush *Luzula campestris* and lesser hawkbit *Leontodon saxatilis*.

The drier, eastern end of this zone has a group of mature oak trees over a grassy field layer of creeping soft-grass *Holcus mollis*, Yorkshire fog, false oat-grass, bent-grass, honeysuckle, common cat's-ear, primrose and hawkweed.



The drier area and ferny bank

There is steep, dry bank rich in ferns and mosses separates this area from the banks of the covered reservoir. Its ground flora includes patches of lily of the valley *Convallaria majalis* along with typical

native plants of dry, acid hedgebanks such as wood-rushes *Luzula spp.*, common bent-grass, bluebell, wood anemone, bracken, creeping soft-rush and hawkweed

3.3.3 Farm Pond

The Farm Pond is a largely undisturbed habitat away from the formal gardens with a pond dipping platform on its northern bank.

The pond occupies what may be an old extraction pit just south of Great Dixter Farm. The steep banks of the pit support trees and shrubs on all sides except to the north. These include oak, osier, *Salix viminalis*, hawthorn, ash, field maple and grey willow with quite frequent dog rose and bramble.



View of Farm Pond and its island

Despite being partly shaded there is a well-developed fringe of marginal and emergent vegetation around parts of the pond. This includes widespread wetland plants such as reed sweet grass, yellow flag, common water-plantain *Alisma plantago-aquatica*, common marsh-bedstraw *Galium palustre*, branched bur-reed *Sparganium erectum*, gipsywort, hard rush *Juncus inflexus*, bittersweet and creeping bent-grass.



Emergent vegetation in Farm Pond

A densely vegetated island in the pond has an old duck house surrounded by a large stand of bamboo along with pendulous sedge, hedge bindweed *Calystegia sepium* and yellow flag.

Aquatic vegetation includes common duckweed and water-starwort *Callitriche agg.* but is dominated in late summer by an exotic water-lily and water-soldier *Stratiotes aloides*, a species that is not native in Sussex and potentially very invasive.



Water-soldier in Farm Pond

There is a patch of less shaded ground around the dipping platform and here the pond bank vegetation has a tussocky structure with soft rush, hard rush and bulky grasses such as false-brome, Yorkshire fog, cock's-foot, false oat-grass and creeping bent-grass. There is a quite herb-rich bank near the dipping platform where common knapweed, ox-eye daisy, greater birds-foot-trefoil, great willowherb, meadow cranesbill *Geranium pratense*, meadow vetchling, yarrow, ribwort plantain, common vetch, stone-parsley, red clover and common sorrel were noted.

Tall stacks of deadwood and twigs have been created near the pond banks to provide habitat piles for fauna.

3.4 The Garden Meadows

3.4.1 Orchard Meadow

Orchard meadow lies on a gentle south-facing slope and has an outstandingly herb-rich sward. The upper and eastern slopes in particular have a very naturalistic appearance.



A mown path through Orchard Meadow

Scarce native species are present including large numbers of green-winged orchid, scattered corky-fruited water-dropwort, occasional dyer's greenweed and small amounts of adder's-tongue fern *Ophioglossum vulgatum*. This latter plant was not observed during the 2018 vegetation survey, probably as it is a very diminutive and early season species, but its presence was reported to the author by the garden staff.



View of Orchard Meadow

The lower slopes of Orchard Meadow are generally more nutrient rich with a higher proportion of grasses and damp-loving plants. Swathes of crocus, daffodil and other bulbs are planted throughout the Orchard meadow sward.

3.4.2 Front Meadow

Front Meadow in particular combines an assemblage of native grassland species rich in orchids with planted, non-native bulbs that add colour throughout the year. This creates a striking effect and is a

prime “meadow gardening” demonstration area in a prominent position at the entrance to the house and formal garden.

3.4.3 Topiary Lawn

Topiary Lawn also has a high proportion of native species with planted bulbs in the upper tiers though the sward has a particularly natural appearance in the lower areas. Legumes, especially common birds-foot-trefoil, and yellow rattle are prominent in the sward with frequent ox-eye daisy, occasional green-winged orchid and abundant common spotted orchid.



Topiary Lawn's herb-rich sward

This too is an important area that illustrates how native plants and meadow habitat fit within a garden and appears to have a very high level of appeal with visitors.

3.4.4 The Prairie

The Prairie has a very different and less naturalistic sward than the other garden meadows. Tall, lush native and exotic grasses, including occasional pampas grass tussocks, are a striking feature of this area. There is a high proportion of legumes in the sward especially vetches, meadow vetchling and medics with scattered meadow cranesbill and a large amount of an herbaceous spurge. Patches of hemlock water-dropwort are present in damp and disturbed areas.



View of the Prairie

As well as the more exotic species in the Prairie there are also elements of the more typical herb-rich neutral meadow plant community found in the other garden meadows, Yellow rattle is locally abundant whilst green-winged orchid, common spotted-orchid, ox-eye daisy, common knapweed, lesser stitchwort and dyers greenweed are all present in places, especially in the shorter vegetation along paths. Soft rush and cuckoo-flower occur in damp areas and changing forget-me-not is prominent in places where the sward is sparse.

There is a covered reservoir on the eastern edge of the Prairie. The sloping banks support dense growth of tall grasses including common couch, false oat-grass and a *Phalaris* along with much cow parsley.



View from the top of the covered reservoir towards the Prairie

In contrast the thin soil on the top of the reservoir has a particularly species-rich, low-growing sward of native plants including green-winged orchid, yellow rattle, ox-eye daisy, field woodrush, common twayblade *Neottia ovata* and red clover.



Herb-rich sward on top of the covered reservoir

3.4.5 Overview

The garden meadows at Great Dixter are not only a highlight of the formal gardens but also a crucial component of the estate's high ecological importance.

All the garden meadows are outstandingly rich in the native plant species that are characteristic of unimproved lowland hay meadows, a nationally scarce and still declining semi-natural habitat that has a stronghold in the High Weald AONB.

Many parts of the garden meadows have an extremely high ratio of wildflowers to grasses, usually as a result of the large amount of yellow rattle in the sward. These colourful meadows have a spectacular appearance and capture the essence of the lost wildflower meadows of the past, before widespread agricultural intensification changed the nature of most meadows in the wider countryside.

Plant introductions to the meadows as well as deliberate and accidental exchange of species between the garden meadows and the estate grassland areas has taken place over many years as meadow creation has been a special focus of work at Great Dixter (Lloyd 2016).

However, the garden meadows clearly have their origins in high quality, unimproved meadows rather than being derived from nutrient rich, improved garden lawns. Their outstanding plant assemblages contain not only the widespread and relatively easily grown range of native grassland species but also several of the much more uncommon and slow to colonise plants that are particularly special to valuable semi-natural grassland in the High Weald, most notably green-winged orchid and adder's-tongue.

These species-rich garden meadows are botanically valuable, they provide excellent resources for native fauna, especially invertebrates, and they provide complementary habitat to the other, semi-natural parts of the estate.

The garden meadows also have enormous educational value as demonstration areas for meadow creation and enhancement techniques. Their importance in convincing the many visitors to Great Dixter of the beauty and wildlife value of garden meadows is hard to over-estimate.



The Orchard Meadow

4.0 RECOMMENDATIONS

4.1 Current Wildlife Value

The majority of the ponds, hedges and meadows surveyed at Great Dixter are derived from the typical features of a traditional High Weald farmstead. Most have been modified to some degree through the long history of gardening and botanical experimentation by the estate's owners and managers.

The complex origins and unconventional management of these areas with their mixture of native and non-native species have created vegetation with great species and structural diversity that provides abundant resources for many types of native fauna, particularly invertebrates. This blurring of the line between garden and the wider estate undoubtedly contributes to Great Dixter's excellent potential to support high levels of biodiversity.

Great Dixter is now known to be of outstanding importance for its invertebrate assemblages including some very rare species (Phillips 2017). An important focus of management of the habitats across the whole estate should be to ensure that conditions remain suitable to support the rare and threatened fauna present. Important features for invertebrates are diverse sources of pollen and nectar available throughout the season as well as a range of nesting and breeding habitat. The invertebrate survey report sets out in some detail the habitat requirements of key species that have been recorded during the biodiversity audit.

The species-rich meadows at Great Dixter are also of high ecological interest both as examples of a declining, priority habitat type and for the rare and threatened native plant species present. The current carefully executed management of these important grassland habitats is very good and should be continued. Opportunities to increase the extent of this habitat within the Great Dixter estate on suitable soils should always be considered.

However, to promote and support maximum biodiversity the estate should be considered as a single ecological unit within the wider landscape and its management should aim to create a mixture of different habitats and vegetation types with robust connectivity.

Weights Wood is an important part of the Great Dixter estate but at present this ancient woodland is separate from the rest of the property. Acquiring the large pasture field that separates Great Dixter Farm from Weights Wood would be a significant achievement and would provide good opportunities for more coherent and effective habitat management and creation options to reinforce connectivity and promote biodiversity across the estate.

4.2 New Habitat Creation

Great Dixter has some outstanding grassland and woodland habitats but native scrub is relatively scarce on the estate compared to other vegetation types. It is mostly found in small patches on the woodland edges around Bottom Meadow and as a component of hedgerows.

Creating larger, linked areas of scrubby vegetation within a mosaic of tussocky grasses, flowering native woody climbers and shrubs, would add to the overall variety of semi-natural habitats at Great

Dixter and could help to strengthen habitat connectivity across whole estate. This type of intermediate, edge vegetation will develop naturally in the interface between woodland, hedges and grassland if regular hedge trimming and grass mowing is reduced or stopped.

Current management of the grassland areas is based on a varied hay mowing regime with field edges and corners left long over the winter months. There is a small group of sheep that graze the fields but their impact is very small. Whilst this management is entirely appropriate for the most herb-rich grasslands of Lower Paddock and New Meadow there is an opportunity to carry out some experimental habitat creation in the botanically poor Bottom Meadow.



Bottom Meadow mown for hay

Bottom Meadow is semi-improved grassland that is likely to have reasonably high soil nutrient levels. It would be possible to use Great Dixter's tried and tested techniques to enhance this field with wildflower seed and reduce the grass vigour with yellow rattle but an alternative would be to promote the development of a scrubby habitat complex on Bottom Meadow.

Bottom Meadow already has some good patches of edge habitat and areas of tussocky sward structure with low botanical diversity.



Developing edge habitat in Bottom Meadow

Mowing could be stopped and grazing suspended for an initial period of two years so that vegetation from the scrubby edges can spread further into the tussocky field. The aim should be to allow natural

processes to change the vegetation in this field from predominantly open grassland towards a more complex mixture of grassland and scrub.

The vegetation transition will be unpredictable in the time it takes for woody species to spread naturally into the field and the species mixture that will develop over time. Browsing by deer, rabbits and voles might prevent woody species establishing in the sward but if this is the case then planting groups of woody shrubs could also be considered. Monitoring the process of change by way of fixed point photography and periodic botanical surveys is advisable to document the experiment.

In the medium term, once woody species have begun to establish in the sward and spread from the field edges, herbivore-driven management of the field by low intensity grazing would help to maintain a diverse sward structure with patches of scrub. The choice of grazing animals to use will depend on the practicalities of obtaining and looking after the livestock but could be a small number of hardy, native breed cattle (such as Sussex, belted Galloway or Dexters) or equines such as Exmoor ponies, Polish Konik or even donkeys.

4.3 Invasive Plants

In a few places there are plants of garden origin that should be controlled where they are spreading into valuable semi-natural habitats.

Dwarf elder is considered to be an archaeophyte (an ancient introduction to the British flora) and is long-established at some sites in Sussex (SBRS 2018). However at Great Dixter it is certain to be derived from the garden and is spreading into some semi-natural habitats along the drive and on the edge of the Plant Fair Field. The extent of this plant should be monitored to ensure that it does not start to out-compete native species in the wider estate.



Dwarf elder along the drive

Farm Pond contains water-soldier which is a very competitive plant with the potential to displace native aquatic species. It is also very persistent and difficult to remove, as has been the case on Pevensey Levels. Because at least some of the ponds at Great Dixter are host to the legally protected great crested newt *Triturus cristatus* (Andy Phillips *pers.comm.*) it is probably best not to attempt to clear the pond of water-soldier as this could have an adverse impact on any newts present. This plant

should nevertheless be treated with caution and not allowed to become established in any other water bodies.

Creeping thistle is a native species that is very attractive to some native fauna, for example as larval foodplant of the painted lady butterfly *Vanessa cardui* and as a source of seed for goldfinches *Carduelis carduelis*. This plant is already present at low levels in the Great Dixter grasslands but it may become more prominent in future, especially if mowing is suspended in Bottom Meadow or if rabbit grazing continues to create bare ground in the New Meadow sward. It would be advisable to monitor the extent of creeping thistle to ensure it does not become over-dominant in the grassland or is perceived as a nuisance to adjoining landowners.

4.4 Hedgerow Enhancement

Small scale management work on some of the hedges would help to increase their value to wildlife.

Hedgerow trees are a valuable addition to the hedge habitat. Hedges 1 and 8 would benefit greatly from allowing new hedgerow trees to develop.

A connecting hedgerow of mixed native species could be planted between Lower Paddock and Bottom Meadow along the line of sheep fencing to create a new habitat link from Hedge 1 to Hedge 3.



Potential location for a new hedgerow

The southern end of hedge 5 has already developed some very useful edge habitat that grades from unmown grass margin to bramble thicket and into the woody hedge. However, the scrub element of the hedgerow is locally quite sparse because its western side has been quite heavily managed in the past. Continuing to allow blackthorn to sucker outwards to the east will help this section become a more dense scrub edge.

Hedge 12 has a large gap and sparse sections could be thickened by planting with native shrubs. This boundary should ideally be treated as one wide hedgerow/shaw/hedgebank including the footpath. The garden species should be removed carefully to benefit the diverse mixture of native woody species already present.

Wherever possible all the hedgerows should be managed with a light touch and infrequent, rotational cutting to promote taller, thicker, free-growing hedgerows with graded edge habitat.

4.5 Local Wildlife Site Status

Through the biodiversity audit process Great Dixter has been shown to support priority habitats with very high levels of biodiversity as well as a variety of rare and threatened species. The management team should consider proposing the estate for designation as a Local Wildlife Site (LWS) to the Sussex Biodiversity Record Centre, who administer the county LWS programme.

County Local Wildlife Sites play an important role as biodiversity hotspots within the wider countryside and can also be particularly valuable when they are open to the public (Defra 2006).

LWS status is a non-statutory designation that recognises the conservation value of sites at a local and regional level. Designation as a LWS would not restrict any management or gardening activities on the estate but would raise the profile of Great Dixter for its biodiversity importance and add weight to its role in environmental education for a range of audiences.

Great Dixter garden and estate is an outstanding demonstration site for species-rich grassland management, creation and enhancement. It could also illustrate ways of enhancing biodiversity and using different management techniques across the whole range of habitats within the property.

4.6 Summary of Recommendations

- Change the management in Bottom Meadow to promote more extensive scrub and woodland edge vegetation
- Consider hardy livestock grazing in Bottom Meadow in future years
- Carry out selective control of some garden plants outside the formal gardens
- Monitor the extent of creeping thistle in grasslands
- Manage hedges to promote dense, wide features with hedgerow trees
- Plant a new hedge between Lower Paddock and Bottom Meadow
- Put the Great Dixter estate forward for consideration as a LWS

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APPENDIX. Great Dixter Vegetation Survey Species Tables

Table 1. Grassland Species

The abundance of each species is estimated using the DAFOR scale where D = Dominant, A = Abundant, F = Frequent. O = Occasional, R = Rare, L = Locally

Forbs that seldom occur outside unimproved grassland or which are indicative of long-term, uninterrupted grassland management are highlighted in yellow

| SCIENTIFIC NAME | COMMON NAME | NEW MEADOW | BOTTOM MEADOW | LOWER PADDOCK | PLANT FAIR FIELD |
|-----------------------------------|----------------------|------------|---------------|---------------|------------------|
| GRASSES | | | | | |
| <i>Agrostis capillaris</i> | Common bent-grass | F | A | FLA | A |
| <i>Agrostis stolonifera</i> | Creeping bent-grass | FLA | ALD | F | A |
| <i>Alopecurus pratensis</i> | Meadow foxtail | F | F | F | FLA |
| <i>Anthoxanthum odoratum</i> | Sweet vernal grass | A | A | A | A |
| <i>Arrhenatherum elatius</i> | False oat-grass | | OLF | O | |
| <i>Cynosurus cristatus</i> | Crested dog's-tail | OLF | | F | F |
| <i>Dactylis glomerata</i> | Cock's-foot | OLF | OLF | | O |
| <i>Elytrigia repens</i> | Common couch | | OLF | | FLA |
| <i>Festuca rubra</i> | Red fescue | O | | F | OLF |
| <i>Holcus lanatus</i> | Yorkshire fog | FLA | ALD | A | A |
| <i>Hordeum secalinum</i> | Meadow barley | OLF | | O | F |
| <i>Lolium perenne</i> | Perennial rye-grass | | F | FLA | A |
| <i>Phleum pratense</i> | Timothy | O | OLF | | F |
| <i>Poa annua</i> | Annual meadow-grass | | LF | | |
| <i>Poa trivialis</i> | Rough meadow-grass | F | FLA | F | F |
| <i>Vulpia bromoides</i> | Squirrel-tail fescue | OLF | | | |
| FORBS, SEDGES & RUSHES | | | | | |
| <i>Achillea millefolium</i> | Yarrow | OLF | | OLF | O |
| <i>Ajuga reptans</i> | Bugle | O | | | |
| <i>Anacamptis morio</i> | Green-winged orchid | R | | R | |
| <i>Anemone nemorosa</i> | Wood anemone | | LF | | |
| <i>Anthriscus sylvestris</i> | Cow parsley | O | | | O |
| <i>Bellis perennis</i> | Daisy | | | O | |
| <i>Cardamine pratensis</i> | Cuckoo-flower | O | | | |
| <i>Carex hirta</i> | Hairy sedge | | | | LF |
| <i>Centaurea nigra</i> | Common knapweed | ALD | R | FLA | OLF |

| SCIENTIFIC NAME | COMMON NAME | NEW MEADOW | BOTTOM MEADOW | LOWER Paddock | PLANT FAIR FIELD |
|----------------------------------|------------------------------|------------|---------------|---------------|------------------|
| <i>Cerastium fontanum</i> | Common mouse-ear chickweed | FLA | F | F | |
| <i>Cerastium glomeratum</i> | Sticky mouse-ear | O | | | |
| <i>Cirsium arvense</i> | Creeping thistle | OLF | OLF | O | OLF |
| <i>Cirsium palustre</i> | Marsh thistle | | | | R |
| <i>Cirsium vulgare</i> | Spear thistle | | OLF | | |
| <i>Crepis capillaris</i> | Smooth hawk's-beard | | R | OLF | O |
| <i>Crepis vesicaria</i> | Rough hawk's-beard | | | R | |
| <i>Dactylorhiza fuchsii</i> | Common spotted-orchid | OLF | | | R |
| <i>Ficaria verna</i> | Lesser celandine | FLA | LA | | OLF |
| <i>Galium aparine</i> | Common cleavers | OLF | O | | |
| <i>Genista tinctoria</i> | Dyer's greenweed | R | | O | |
| <i>Geranium dissectum</i> | Cut-leaved cranesbill | O | O | | R |
| <i>Geranium pratense</i> | Meadow cranesbill | O | | | |
| <i>Glechoma hederacea</i> | Ground-ivy | | | O | |
| <i>Heracleum sphondylium</i> | Hogweed | O | O | | OLF |
| <i>Hieracium sect. subauda</i> | Hawkeed sp. | | | | R |
| <i>Hyacinthoides non-scripta</i> | Bluebell | R | | | |
| <i>Hypericum maculatum</i> | Imperforate St John's-wort | O | | O | R |
| <i>Hypochaeris radicata</i> | Common cat's ear | O | R | O | O |
| <i>Lathyrus pratensis</i> | Meadow vetchling | OLF | OLF | FLA | OLF |
| <i>Leontodon hispidus</i> | Rough hawkbit | | | R | |
| <i>Leucanthemum vulgare</i> | Ox-eye daisy | FLA | | O | OLF |
| <i>Lotus corniculatus</i> | Common birds-foot-trefoil | A | OLF | FLA | FLA |
| <i>Lotus pedunculatus</i> | Greater birds-foot-trefoil | F | OLF | F | F |
| <i>Luzula campestris</i> | Field wood-rush | O | | | O |
| <i>Medicago arabica</i> | Spotted medick | | OLF | | |
| <i>Medicago lupulina</i> | Black medick | O | | F | OLF |
| <i>Myosotis discolor</i> | Changing forget-me-not | FLA | | | |
| <i>Oenanthe crocata</i> | Hemlock water-dropwort | OLF | | | LF |
| <i>Oenanthe pimpinelloides</i> | Corky-fruited water-dropwort | LF | | O | O |
| <i>Orchis mascula</i> | Early-purple orchid | | R | | |
| <i>Pimpinella saxifraga</i> | Burnet-saxifrage | O | | R | R |
| <i>Plantago lanceolata</i> | Ribwort plantain | A | | OLF | OLF |
| <i>Prunella vulgaris</i> | Selfheal | OLF | OLF | OLF | OLF |
| <i>Pulicaria dysenterica</i> | Fleabane | | | R | |

| SCIENTIFIC NAME | COMMON NAME | NEW MEADOW | BOTTOM MEADOW | LOWER PADDOCK | PLANT FAIR FIELD |
|---|------------------------|------------|---------------|---------------|------------------|
| <i>Ranunculus acris</i> | Meadow buttercup | F | O | F | F |
| <i>Ranunculus bulbosus</i> | Bulbous buttercup | F | O | F | F |
| <i>Ranunculus repens</i> | Creeping buttercup | | OLF | O | OLF |
| <i>Rhinanthus minor</i> | Yellow rattle | ALD | LF | FLA | A |
| <i>Rumex acetosa</i> | Common sorrel | F | R | O | O |
| <i>Rumex crispus</i> | Curled dock | OLF | O | O | O |
| <i>Rumex obtusifolius</i> | Broad-leaved dock | O | OLF | | R |
| <i>Senecio jacobaea</i> | Common ragwort | O | R | | R |
| <i>Stellaria graminea</i> | Lesser stitchwort | O | O | OLF | O |
| <i>Stellaria holostea</i> | Greater stitchwort | R | | | |
| <i>Taraxacum agg.</i> | Dandelion | O | O | O | OLF |
| <i>Trifolium dubium</i> | Lesser trefoil | | | OLF | |
| <i>Trifolium pratense</i> | Red clover | FLA | OLF | FLA | F |
| <i>Trifolium repens</i> | White clover | F | FLA | F | A |
| <i>Urtica dioica</i> | Common nettle | | O | | LF |
| <i>Veronica arvensis</i> | Wall speedwell | O | | | |
| <i>Veronica chamaedrys</i> | Germander speedwell | O | O | | OLF |
| <i>Veronica serpyllifolia</i> | Thyme-leaved speedwell | | R | R | O |
| <i>Vicia cracca</i> | Tufted vetch | R | | | |
| <i>Vicia hirta</i> | Hairy tare | O | O | LF | LF |
| <i>Vicia sativa</i> | Common vetch | O | | R | O |
| <i>Vicia sepium</i> | Bush vetch | R | | | R |
| <i>Viola riviniana</i> | Common dog-violet | O | | | |
| Number of grass species | | 12 | 12 | 11 | 13 |
| Number of non-grass species | | 50 | 33 | 37 | 43 |
| Total number of species recorded | | 62 | 45 | 48 | 56 |

Table 2. Hedgerow Woody Species

This table includes the native woody species used to define a species-rich hedge (DEFRA 2007) i.e. trees, shrubs and climbers excluding bramble

Bank = Species recorded on the south-facing bank adjacent to Hedge H12

| SCIENTIFIC NAME | COMMON NAME | H 1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | Bank |
|---|-------------------|------------|-----------|-----------|-----------|------------|-----------|-----------|------------|-----------|-----------|-----------|------------|-----------|
| <i>Acer campestre</i> | Field maple | x | | x | | x | | x | x | x | x | x | | |
| <i>Acer pseudoplatanus</i> | Sycamore | | | | | | | | | | | | x | x |
| <i>Betula x aurata</i> | Hybrid birch | | | | | | | | | | | | x | x |
| <i>Carpinus betulus</i> | Hornbeam | x | | x | | x | | | | | | | | |
| <i>Castanea sativa</i> | Sweet chestnut | | | | | | | | | | | | | x |
| <i>Corylus avellana</i> | Hazel | x | | | | | | x | x | | | | x | x |
| <i>Crataegus spp</i> ¹ | Hawthorn | x | | x | x | x | x | x | x | x | x | x | x | x |
| <i>Euonymus europaeus</i> | Spindle | x | | | | | | | x | | | | | |
| <i>Fagus sylvatica</i> | Beech | | | | | | | | | | | | x | x |
| <i>Fraxinus excelsior</i> | Ash | x | | x | | x | x | x | x | x | | | x | x |
| <i>Hypericum androsaemum</i> | Tutsan | | | | | | | | | | | | | x |
| <i>Ilex aquifolium</i> | Holly | | | | | x | | x | | | | | x | x |
| <i>Pinus sylvestris</i> | Scots pine | | | | | x | | | | | | | | |
| <i>Prunus sp.</i> | Prunus sp. | x | | | | | | x | x | x | x | x | | x |
| <i>Prunus spinosa</i> | Blackthorn | x | x | x | x | x | | x | x | x | x | x | x | x |
| <i>Quercus robur</i> | Pedunculate oak | x | | | x | x | x | | x | x | | x | x | x |
| <i>Rosa arvensis</i> | Field rose | x | | | x | | | | | | | | | |
| <i>Rosa canina</i> | Dog rose | x | | x | x | x | x | | x | x | x | x | x | |
| <i>Sambucus nigra</i> | Elder | x | | | x | x | | x | | | x | x | | |
| <i>Sorbus torminalis</i> | Wild service-tree | | | x | | | x | | | | | | | x |
| <i>Taxus baccata</i> | Yew | | | | | | x | | | | | | x | |
| <i>Ulmus glabra</i> | Wych elm | | | | | | | x | | | | | | |
| Number of native woody species | | 12 | 1 | 7 | 6 | 10 | 6 | 9 | 9 | 7 | 6 | 7 | 11 | 13 |
| Approximate length of hedgerow in metres | | 250 | 20 | 75 | 30 | 140 | 40 | 40 | 110 | 40 | 40 | 40 | 175 | 90 |

¹ Hawthorn occurs in almost all the hedgerows. Much is *Crataegus monogyna* but Midland hawthorn *Crataegus laevigata* and their hybrid *Crataegus x media* are present in the woodland and almost certainly within the older hedgerows too. Time and seasonal constraints did not allow these to be separated accurately when surveying the hedgerows so the records are amalgamated as *Crataegus spp.*

Table 3. Additional plant species recorded in the hedgerows and hedge bases

| SCIENTIFIC NAME | COMMON NAME | H 1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | Bank |
|--------------------------------|----------------------------|-----|----|----|----|----|----|----|----|----|-----|-----|-----|------|
| <i>Achillea millefolium</i> | Yarrow | x | | | x | x | | | | | | | x | |
| <i>Aesculus hippocastanum</i> | Horse chestnut | | | | | | | | | | | | | x |
| <i>Agrostis capillaris</i> | Common bent-grass | x | | | | | | | | | | | | |
| <i>Agrostis stolonifera</i> | Creeping bent-grass | | | | | x | | x | x | | | | x | |
| <i>Alliaria petiolata</i> | Garlic mustard | | | | | | | | | x | | | | |
| <i>Alopecurus pratensis</i> | Meadow foxtail | x | | x | x | x | x | x | | x | x | x | | |
| <i>Anisantha sterilis</i> | Barren brome | | | x | | x | x | | | | x | | | |
| <i>Anthoxanthum odoratum</i> | Sweet vernal grass | | | | | x | | | | | | | | |
| <i>Anthriscus sylvestris</i> | Cow parsley | x | | x | x | x | x | x | | x | | x | x | |
| <i>Arrhenatherum elatius</i> | False oat-grass | x | x | x | x | x | x | | x | x | x | x | | |
| <i>Arum maculatum</i> | Lords and ladies | x | | | | | | | | | | x | | |
| <i>Brachypodium sylvaticum</i> | False-brome | x | | | | x | | x | x | x | | x | x | |
| <i>Bromus hordeaceus</i> | Soft brome | | | | | x | | | | | | | | |
| <i>Calystegia sepium</i> | Hedge bindweed | x | | | | | | | | | | | x | |
| <i>Carex otrubae</i> | False fox-sedge | | | | | | | | x | | | | | |
| <i>Carex pendula</i> | Pendulous sedge | | | | | | | | | | | x | x | |
| <i>Carex remota</i> | Remote sedge | | | | | | | | | | | x | | |
| <i>Centaurea nigra</i> | Common knapweed | x | x | | x | x | | | x | x | x | x | | |
| <i>Cerastium fontanum</i> | Common mouse-ear chickweed | | | | x | x | | | | | | | | |
| <i>Cirsium arvense</i> | Creeping thistle | x | | | x | x | | | x | x | x | | | |
| <i>Cirsium vulgare</i> | Spear thistle | | | | x | | | | | | | | | |
| <i>Cotoneaster sp.</i> | Cotoneaster sp. | | | | | | | | | | | | | x |
| <i>Crepis vesicaria</i> | Beaked hawk's-beard | | | | | | | | | | x | | | |
| <i>Cyclamen sp.</i> | Cyclamen sp. | | | | | | | | | | | | x | |
| <i>Cynosurus cristatus</i> | Crested dog's-tail | | x | | | | | | | | | | | |
| <i>Dactylis glomerata</i> | Cock's-foot | x | x | x | x | x | x | | x | x | x | | x | |
| <i>Digitalis purpurea</i> | Foxglove | | | | | | | | | | | x | | x |
| <i>Dryopteris dilatata</i> | Broad buckler-fern | | | | | | | | | | | | | x |
| <i>Dryopteris filix-mas</i> | Male fern | | | | | x | | | | | | x | | x |
| <i>Elytrigia repens</i> | Common couch | x | x | x | x | x | x | | | x | x | | | |

| SCIENTIFIC NAME | COMMON NAME | H 1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | Bank |
|----------------------------------|----------------------------|-----|----|----|----|----|----|----|----|----|-----|-----|-----|------|
| <i>Epilobium hirsutum</i> | Great willowherb | | | | x | x | | | | | | | | |
| <i>Epipactis purpurata</i> | Violet helleborine | | | | | | | | | | | | x | |
| <i>Eupatorium cannabinum</i> | Hemp-agrimony | | | | | x | | | | | | | | |
| <i>Festuca rubra</i> | Red fescue | | | | | x | | | | | | | x | |
| <i>Ficaria verna</i> | Lesser celandine | | | | | x | | x | x | | | | | |
| <i>Filipendula ulmaria</i> | Meadowsweet | | | | | x | | | | | | | | |
| <i>Galium aparine</i> | Common cleavers | x | x | x | | x | x | x | x | x | x | x | x | |
| <i>Geranium dissectum</i> | Cut-leaved cranesbill | x | | | x | | x | | | | x | | | |
| <i>Geranium robertianum</i> | Herb Robert | | | | | | | | | x | | x | x | |
| <i>Geum urbanum</i> | Wood avens | | | | | | | x | | | | | x | |
| <i>Glechoma hederacea</i> | Ground-ivy | x | | | x | x | | | | x | | x | | |
| <i>Hedera helix</i> | Ivy | x | | | | x | x | x | x | x | x | x | x | x |
| <i>Heracleum sphondylium</i> | Hogweed | x | | | | x | | | | x | x | | x | |
| <i>Hieracium sp.</i> | Hawkweed sp. | | | | | | | | | | | | x | x |
| <i>Holcus lanatus</i> | Yorkshire fog | x | x | x | x | x | | | | | | | | |
| <i>Hordeum secalinum</i> | Meadow barley | x | | | | x | | | x | | | | | |
| <i>Humulus lupulus</i> | Wild hop | x | | | | | x | | | | | | | |
| <i>Hyacinthoides non-scripta</i> | Bluebell | | | | | | | | | x | | | | x |
| <i>Hypericum perforatum</i> | Perforate St John's-wort | x | | | | | | | | | | | | |
| <i>Iris foetidissima</i> | Stinking iris | | | | | x | x | | | | | | | |
| <i>Juncus effusus</i> | Soft rush | | | | | | | | | | | x | | x |
| <i>Juncus inflexus</i> | Hard rush | | | | | | | | | | | x | | |
| <i>Kerria japonica</i> | Kerria | | | | | | | | | | | | | x |
| <i>Lapsana communis</i> | Nipplewort | | | | | | | | | x | x | | | x |
| <i>Lathyrus pratensis</i> | Meadow vetchling | x | | | x | | x | | | | x | x | | |
| <i>Laurus nobilis</i> | Bay | | | | | | x | | | | | | x | x |
| <i>Leucanthemum vulgare</i> | Ox-eye daisy | x | | | x | x | | | x | x | x | | | |
| <i>Leycesteria formosa</i> | Himalayan honeysuckle | | | | | | | | | | | | | x |
| <i>Lolium perenne</i> | Perennial rye-grass | | | x | | | x | | | | x | | x | |
| <i>Lonicera periclymenum</i> | Honeysuckle | | | | | x | | | | | | x | | |
| <i>Lotus corniculatus</i> | Common birds-foot-trefoil | x | | | | x | | | | | | x | | |
| <i>Lotus pedunculatus</i> | Greater birds-foot-trefoil | | | | | x | | | x | | | | | |
| <i>Lunaria annua</i> | Honesty | | | | | | x | | | | | | | |
| <i>Medicago arabica</i> | Spotted medick | | | | x | x | x | | | | x | | | |
| <i>Medicago lupulina</i> | Black medick | | | | | | | | | x | x | | | |

| SCIENTIFIC NAME | COMMON NAME | H 1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | Bank |
|------------------------------|------------------------|-----|----|----|----|----|----|----|----|----|-----|-----|-----|------|
| <i>Mercurialis perennis</i> | Dog's mercury | x | | | | x | | x | x | x | | x | | |
| <i>Myosotis sp.</i> | Forget-me-not sp. | | | | | | | | | | | x | | |
| <i>Oenanthe crocata</i> | Hemlock water-dropwort | | | | | | | x | | | | | | |
| <i>Oenothera sp.</i> | Evening-primrose sp. | | | | x | | | | | | | | | |
| <i>Phleum pratense</i> | Timothy | | | | | | x | | | | | | | |
| <i>Plantago lanceolata</i> | Ribwort plantain | | | | x | x | | | | | x | x | | |
| <i>Plantago major</i> | Greater plantain | | | | | | | | | | | x | | |
| <i>Poa trivialis</i> | Rough meadow-grass | | | x | | | x | | | x | x | | | |
| <i>Potentilla sterilis</i> | Barren strawberry | | | | | | | | | | | | x | x |
| <i>Primula vulgaris</i> | Primrose | | | | | | | | | x | | | x | x |
| <i>Prunella vulgaris</i> | Selfheal | x | x | | x | | | | | | | | | |
| <i>Pteridium aquilinum</i> | Bracken | | | | | | | | | | | | | x |
| <i>Pulicaria dysenterica</i> | Fleabane | | | | | x | | | | | | | | |
| <i>Quercus cerris</i> | Turkey oak | | | | | x | | | | | | | | |
| <i>Quercus ilex</i> | Holm oak | | | | | x | | | | | | | | |
| <i>Ranunculus acris</i> | Meadow buttercup | x | | | x | x | x | | | x | | x | x | |
| <i>Ranunculus bulbosus</i> | Bulbous buttercup | | | | | | x | | | | | | | |
| <i>Ranunculus repens</i> | Creeping buttercup | x | | x | x | x | | | | x | | | x | |
| <i>Rhinanthus minor</i> | Yellow rattle | | | | | | | | x | | | | | |
| <i>Rubus fruticosus agg.</i> | Bramble | x | | x | x | x | x | x | x | x | x | | x | x |
| <i>Rumex acetosa</i> | Common sorrel | | | | | x | | | | | | | | |
| <i>Rumex conglomeratus</i> | Clustered dock | | | | | | | | | | | x | | |
| <i>Rumex crispus</i> | Curled dock | | | x | | x | x | | x | x | x | | | |
| <i>Rumex obtusifolius</i> | Broad-leaved dock | x | | | | x | | | | | x | | x | |
| <i>Rumex sanguineus</i> | Wood dock | | | | | | | | | | | | x | |
| <i>Sambucus ebulus</i> | Dwarf elder | | | | | | | | | | | | | x |
| <i>Senecio jacobaea</i> | Common ragwort | x | | | x | | | | | | | | | |
| <i>Silene dioica</i> | Red campion | | | | | x | | | | | | | | |
| <i>Sison amomum</i> | Stone parsley | x | | | | x | | | | x | x | x | | |
| <i>Solanum dulcamara</i> | Bittersweet | | | | | | x | | | | | | | |
| <i>Stachys sylvatica</i> | Hedge woundwort | | | | x | x | | | x | x | | x | | |
| <i>Stellaria graminea</i> | Lesser stitchwort | | | x | | x | | | | | | | | |
| <i>Stellaria holostea</i> | Greater stitchwort | x | | | x | x | | | x | x | | x | | x |
| <i>Symphytum sp.</i> | Comfrey sp. | | | | | x | | | | | | | | |
| <i>Tamus communis</i> | Black bryony | x | x | | x | x | x | x | x | x | | x | x | x |

| SCIENTIFIC NAME | COMMON NAME | H 1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | Bank |
|---|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <i>Taraxacum agg.</i> | Dandelion | | | | | x | | | | x | x | | x | |
| <i>Teucrium scorodonia</i> | Wood sage | | | | | | | | | | | | | |
| <i>Trifolium pratense</i> | Red clover | x | | | | x | | | | x | x | x | | |
| <i>Trifolium repens</i> | White clover | x | | | | x | | | | | | x | x | |
| <i>Urtica dioica</i> | Common nettle | x | | x | x | x | x | x | x | x | x | x | x | |
| <i>Veronica chamaedrys</i> | Germander speedwell | | | | | | | x | | x | | x | | |
| <i>Vicia cracca</i> | Tufted vetch | | | | | x | | | | | | | | |
| <i>Vicia hirta</i> | Hairy tare | | | | | | x | | | | | | | |
| <i>Vicia sativa</i> | Common vetch | x | | x | x | x | x | | | x | x | | | |
| <i>Vicia sepium</i> | Bush vetch | | | | x | | x | x | | x | | x | | |
| <i>Vicia tetrasperma</i> | Smooth tare | | | x | | | | | | | | x | | |
| <i>Viola riviniana</i> | Common dog-violet | x | | | | | | | | x | | | | x |
| Number of additional species | | 39 | 9 | 17 | 30 | 56 | 28 | 15 | 21 | 36 | 28 | 35 | 29 | 21 |
| Number of native woody species (from Table 2) | | 12 | 1 | 7 | 6 | 10 | 6 | 9 | 9 | 7 | 6 | 7 | 11 | 13 |
| Total number of species recorded along each hedgerow | | 51 | 10 | 24 | 36 | 66 | 34 | 24 | 30 | 43 | 34 | 42 | 40 | 34 |