

An eco-audit of Sawbridgeworth Parish, Herts.

Bob Reed. June 2021.

Contents.

Introduction.....	1
Introduction and background.....	2
Parish boundary.....	3
Parish boundary map.....	4
Soils and Geology.....	5
Habitat types and accounts.....	6-61
Appendix 1. Species lists.....	62-82
Appendix 2. County Wildlife sites.....	83-88
Appendix 3. References.....	89.

Introduction and background.

The idea for this parish biodiversity survey was born out of the current increasing awareness of the place of the human race in the whole environment and the interest being shown in biodiversity and sustainability especially in the face of global warming. In 1789, the 'Natural History and Antiquities of Selborne' by Gilbert White was first published. It was a record of the natural history of this small Hampshire parish written by the local parson and has never

been out of print. Sawbridgeworth parish is an unremarkable parish like so many in the country but it nevertheless forms part of the amazing patchwork of habitats which we are so fortunate to find in this country. Encompassing an area of 2213 acres (895 ha) the parish extends from Spellbrook (which is part of Sawbridgeworth parish) in the North down to Latton Lock on the River Stort on the outskirts of Harlow and on the east to the other side of the M11 motorway and the outskirts of Hatfield Heath, on the west it extends almost to High Wych. It is located at latitude 0°.09 minutes East and 51° 48 minutes North. The highest point in the parish is located to the east where the ground rises to 82 m above sea level descending to 44 m above sea level below Sawbridgeworth along the river. The average height above sea level is in the region of 69 m. Within this area I have identified a wide range of habitats and written a brief description of each along with a listing. I have located as accurately as possible the position of each site using an online Ordnance Survey map. Extensive use has been made of Google Earth for distances and areas. In addition, some suggestions have been made as to actions that may be undertaken to further record what we have in terms of biodiversity in the parish and how we may take measures to improve and enhance the habitats we have locally. A start has been made on recording individual species but this is a mammoth task and must be ongoing. Details of those groups covered so far have been included.

Having lived in this area now for over 70 years I thought that I knew it all quite well but doing this survey has been a revelation as to what we have on our own doorsteps. We all tend to think that we need to travel long distances to experience wildlife and countryside but if this account makes you think twice and causes you to take a walk and investigate and appreciate what we have locally in terms of biodiversity and wildlife then I will have achieved my aim!

Bob Reed. June 2021.

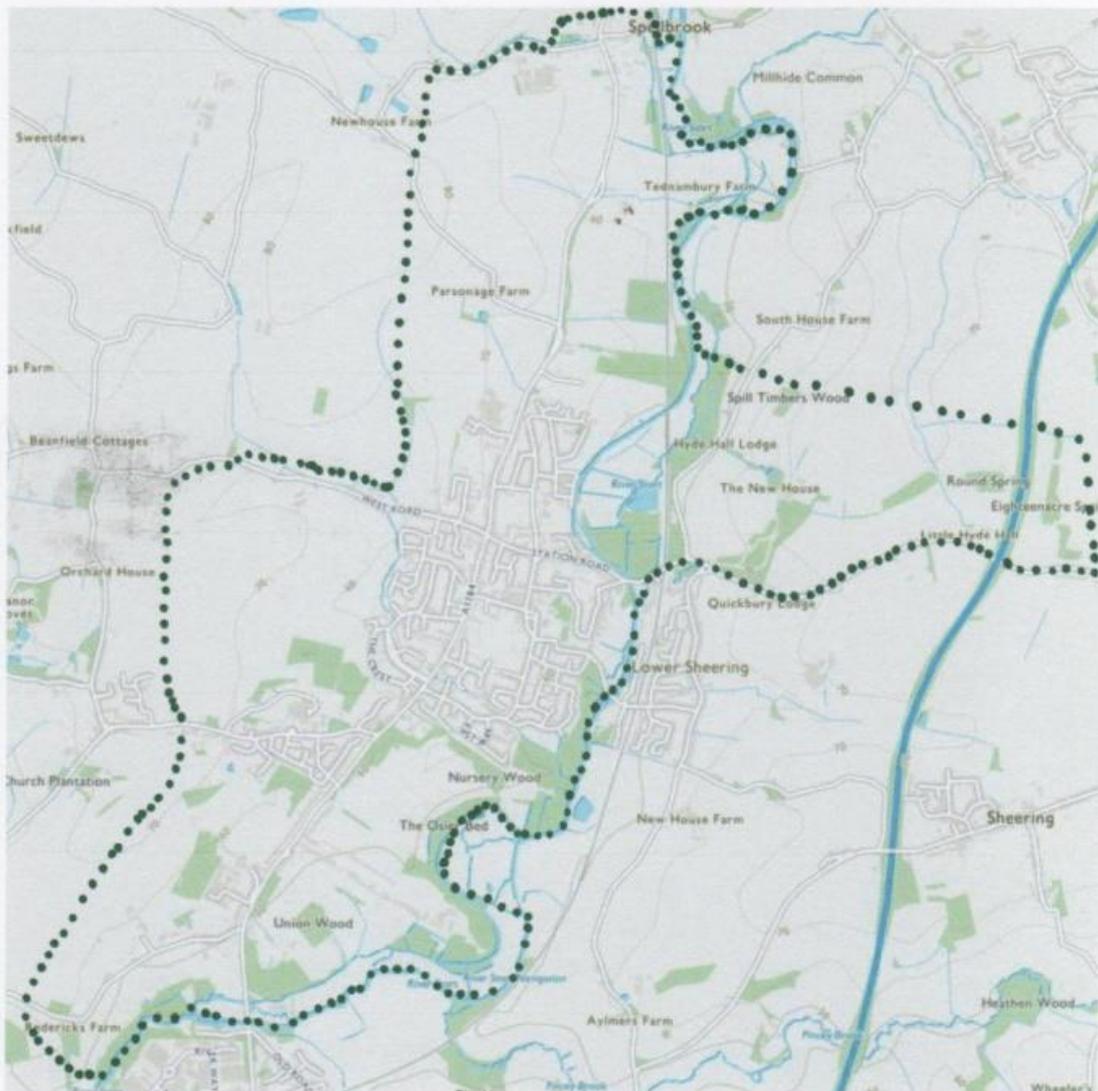
Description of the parish boundary.

Prior to 1862, Sawbridgeworth parish was much larger to the west encompassing High Wych and Gilston. In 1862, High Wych parish was created giving us the parish boundary we see today. Starting at the northernmost point the parish boundary crosses the A1184 at the signboard Spellbrook. The boundary then heads a short distance west into the fields before cutting back south to meet Spellbrook Lane West. At a point just east of New House Farm it turns south and then runs across the fields almost due south heading to a point west of Parsonage Farm and joining the footpath which leads to West Road. At this point it follows the line of the Sawbridgeworth Brook until at Tharbies Lodge it once again turns south between Sawbridgeworth and High Wych. According to the map it skirts the boundary of The Grange at High Wych but there has been an adjustment at this point so that the allotments are actually in High Wych parish where there is another roadside board. The boundary then continues south towards Redericks Farm which is in Sawbridgeworth parish. At this point it is difficult to determine the exact line of the parish because there has been extensive gravel extraction and landfill but the parish boundary continues in a southerly direction to meet the River Stort at Latton Lock. From this point the boundary follows the line of the river closely with the exception of a deviation to follow the old river in the area of The Mores. At this point it rejoins the canal until it reaches Station Road in Sawbridgeworth. Here it turns sharply right and follows the road towards Hatfield Heath. Having passed under the M11 motorway it then continues on until it reaches the first property on the left which is the easterly extent of the parish and where there is once again a signboard. The line of the parish then cuts in a northerly direction to take in Wren's Wood and Eighteen Acre Spring. At the northern end of this wood it turns sharply East and the current line takes it through an underpass under the motorway. It then heads due west, skirting Spill Timbers Wood to the north and thence through to the river Stort. At this point there is a small and interesting diversion because an old River channel marks the line of the parish on the floodplain meadow causing a deviation from the main line of the canal. The boundary rejoins the river just south of the Bomb Hole point on the backwater. There is another unexpected deviation which follows the original route of the river making the small triangular wood at Tednambury Farm actually in Essex (although for the purpose of the survey I have included in Herts!). Just south of Tednambury Lock the boundary turns right and follows the line of the backwater loop at Hallingbury Mill, rejoining the canal just before the bridge over the mill leat. Following the canal once again it deviates just before Spellbrook Lock going left and under the road to follow the old line of the river. At this point it passes into Thorley Wash Nature Reserve, following the original line of the river until it reaches a point opposite where we started in Spellbrook and we are once again back at the start.

An interesting point and one which is frequently raised is 'Why is Great Hyde Hall in Herts when geographically it is in Essex?'. The reason for this is that Great Hyde Hall is one of the original manors of Sawbridgeworth as set out after the Norman Conquest. The estate was in

the same ownership of the Jocelyn family for many centuries and prior to the formation of parish boundaries. As a result, and presumably because of the desire of the Jocelyn family to remain in Herts we see the apparent parish boundary anomaly as shown on the map today.

Sawbridgeworth Parish Area Map.



Soils and Geology.

The soils and geology of the parish reflect the fact that both during, and at the end of the last Ice Age, our parish area was at the very forefront of the furthest ice advance. Glaciers advanced no further than Epping Upland where the furthest point that the melting ice reached, is marked by a terminal moraine. There is another terminal moraine forming an East-West ridge under the High in Harlow New Town. At one time or another our area would either have been covered by many metres of ice or been subject to torrential floods and streams as the ice melted. At other times it would have very much resembled tundra conditions with perpetual freeze and thaw for many centuries. This process leads to downhill creep and slumping of deposits which are given the name Head. The overall result is that the higher ground on either side of the Stort Valley consists mostly of Great Chalky Boulder Clay which is thought to have been deposited when the ice melted suddenly and deposited its load of stones, rocks and clay derived by glaciers from either the North, Northwest or North-east. Further down the valley sides there are deposits of sands and gravels which are thought to have been derived from washing and reworking of the boulder clay. In some places there are thick deposits of glacial sands whose origin is uncertain and it is quite possible that they could have been laid down at a time when all the water was as ice but cold winds blew the sands about resulting in a 'loess' deposit as found in other areas of the world today. The floor of the Stort Valley comprises mostly recent alluvium, being peat and alluvial clay overlying gravels. It is known that there is a deep North-South sunken channel in the floor of the Stort Valley which is full of 'running silts' derived from the Chalk and Cambridge Greensand. Considering the fact that we do not have any 'hard geology' locally we do nevertheless have a wide variety of glacial geology features which will be the subject of a separate study.

Parish habitat types.

Sawbridgeworth Parish Biodiversity	
Urban Woods.	
<p>In this context we are considering woods which are found within nature reserves, country Parks, alongside roads and as part of estates.</p> <p>W2. Nursery Wood. Pishiobury Park. 2.3 hectares. 5.6 acres. This is a young wood essentially in a west and eastern section. The west section was largely an Elm Woodland prior to Dutch Elm Disease in the early 1970s when almost all the trees were felled. With the purchase of the park by the local authority in 1980, large areas were planted up with young trees including Ash, Cherry, Hazel and Hornbeam. The eastern section is older and records show that it was at one time part of East Field Common and was taken into the park in the mid 19th century. There are a large number of medium sized Oaks, a few Horse Chestnuts and several areas of Ash. There is a veteran Field Maple new to the exit into Springhall Lane. BD=M/H.</p> <p>W8. Hyde Hall Wood. 5.9 hectares. 14.81 acres. This wood and appears to be relatively young consisting mostly of Horse Chestnuts of varying sizes and ages, Lime and Ash. There is a ground flora of Dog's Mercury suggesting long established Woodland. Other species recorded include Sycamore, Cherry, Laurel, Beech, Holly and Yew-like conifer. It is known that there are some large Holm Oaks nearer to the main buildings. BD=M</p> <p>W9. Valet Home Woods. Sawbridgeworth Marsh Nature Reserve. 2.4 hectares 5.95 acres. This is an area of wet Woodland forming part of the reserve. The predominant trees are Crack Willow some of which have been pollarded and others coppiced. There are several large White Willows as a remnant population of the original cricket bat plantation that stood here. The area is crisscrossed with a network of ditches and parts of it have a rich ground flora. It is prone to flooding being on the flood plain. A Red Data Book species is present – Vertigo moulinsiana, Desmoulins Whorl Snail. BD=H</p> <p>W32. Locally known as 'The Spinney' this area lies between Springhall Field and the canal. It is thought that he was originally planted up by Thomas Rivers to provide hazel rods for the nursery. Species recorded include Sycamore, Hawthorn, coppiced Hazel and Ash. There is an exceptionally large hybrid Poplar mentioned in Notable trees. There are a line of old Cherry Plums next to the river towpath. The ground flora includes Ivy, Stinging Nettle, wild Red Currant, Wild Arum and Pendulous Sedge. BD=M.</p> <p>W12. Union Wood. Rowneybury. 2.6 hectares 6.7 acres. This word which has a curious name predates the present day building to which it is adjacent. Before Dutch Elm Disease it was almost 100% this tree species with a line of old Yews forming a screen along the northern side. It has now got a much more recent planting including a lot of Sycamore. Due to its private location no further information is available.</p> <p>W13. Small-leaved Elm Belt. Pishiobury Park. 0.82 hectares 2.14 acres. It is supposed that this woodland belt was planted as a screen for the park. It has subsequently been planted up with Ash</p>	

and Hawthorn has colonised naturally. Add that there are only one or two late 19th century or early 20th century oaks. Down towards the ditch the woodland changes in nature becoming Hornbeam and Ash of a much greater age. Holly is not uncommon and there is a large example just on the park side of the fence. There is a notable Crab Apple alongside the path leading in from the main road.

W14. Pishiobury Park. Hornbeam Woodland. 0.82 hectares 1.97 acres. This is a collection of very old coppiced GR Hornbeam trees which almost certainly predate the park and may well have been existing Woodland which was taken into the park when it was created in the 18th century. The soil is dark and gives every impression of being an ancient woodland soil. The ground flora is poor and is largely dominated by Three-cornered Leek which has almost certainly colonised from the Rivers Nursery site. BD=M

W15. Pishiobury Park. Maple belt. 0.57 hectares 1.41 acres. This is young Woodland was planted up as an additional screen in the early 1980s. It is a mixture of young Oak, Cherry, Hornbeam, Hazel and Field Maple. The trees are in the same species clumps and areas in line with the bundles of 'whips' which were planted. Because this woodland was grassland before 1980 the woodland ground flora is very poor. BD=L.

W16. Pishiobury. Osier Bed. 3.9 hectares 9.77 acres. On the 1839 Tithe Map this wet Woodland is shown as Woods Mead implying that it was grassland cut for hay. It would seem that the wood was leased or rented by Thomas Rivers and planted up on the wetter area with Osier willow for packaging materials for fruit trees and on the drier area along the park margin with Hazel. The far north end looks as if it has always been drier woodland and on the above map is called 'Wood'. It would seem that the Osiers died out or were removed when the Rivers interest stopped and the area was then planted with cricket bat willows. These contracted watermark disease and were all felled in the 1960's. Since that time the area has naturally colonised with Alder, Crack Willow and hybrid Poplar. One or two large White Willows remain. BD=H.

W18. Sayesbury Belt(Wood). 1.2 ha 3.08 acres. This is a relatively narrow woodland belt planted as a screen for both the Park and Rowneybury House. All younger trees with a few older oaks, probably late 19th century or early 20th century plantings. A lot of young Sycamore and Ash with the occasional Elm. Dogs Mercury would suggest that it is a wood with a long history. BD=L

W19. Ash grounds also known as Marshalls Wood. 4.82 ha 11.92 acres. This again is a screening wood for the Park. It has the appearance of a young wood with a number of Oaks all of the same age probably late 19th century or early 20th century. Also recorded are Sycamore and Ash. The Sycamore has been coppiced along the roadside but this could be due to work along the road rather than as a woodland practice. Dogs Mercury present at the north end suggests the wood is old. It may be that it was an Elm Wood decimated by Dutch Elm Disease and a lot of the Sycamore's self seeded. BD=L/M

W20. Rookery Wood. 2.13 ha 5.26 acres. This is within the private estate of Pishiobury. Mostly Horse Chestnuts of varying ages with a lot of Sycamore, much of which is self seeded. This wood was the site of the Ice House. BD=M

W21. Beech Drive. Planted as a screen, probably originally for the Park, now for the early/mid 20th century development. A range of trees including Beech, almost certainly late 19th century planting. Lime, Laurel, Yew and various other conifers. BD=L

W22. The Drive. A narrow screening belt for the main road. A range of trees including several different types of conifer, Sycamore, Maple and Beech. BD=L

W23. Triangle of wood opposite the Bull Public House. 0.29ha 0.71ac. A rather unusual small area of woodland planted up with a strange variety of trees. Hybrid Poplar, Cherry, Cherry Plum particularly along the hedge boundary to the houses, Bramble, large Sycamore, Hazel, Blackthorn, Bamboo, Elder, Dogwood, Sallow? A solitary Medlar next to the road. Wild Arum. Yellow Archangel presumably from garden rubbish along with a lot of other dumped rubbish adjacent to the houses. BD=L

W24. Woodland on the Rivers Nursery Site. 0.75 acres 0.3 ha. This woodland has largely establish itself on the site of the original nursery. It is a mixture of Dogwood thicket and other trees including Sycamore. It is essentially secondary woodland which has colonised and developed on bare ground. BD=M

W25. Causeway Mead Wood. 4.8 ha 11.87 acres This is a new wood which has developed naturally opposite the Antiques Centre. Up until the mid-1990s it was open pasture but following an attempt at planning to build on the floodplain the pasture was ploughed up. The Crack Willow trees which have developed over the whole site have appeared as natural seedlings. BD=M

W26. Shop Mead. 1.19 acres 0.48 ha. This is a small triangle on the side of the river just downstream from County Bridge on what was originally a rough grassy field which has developed largely by default into partial woodland. Trees recorded include a medium-size Oak, several willows including one very large example, Sallow and Hazel as well as Holly, and Alder. There is evidence of tree planting through Rabbit guards on some of the young stems. The area is being encroached by Bramble from the north end. There is a wet area adjacent to the fence separating the area from the mobile homes. Some of the area has been subject to some form of landfill possibly when it was part of the area of Bridgefoot Farm buildings. There is a large area of snowdrops. BD=M

Sawbridgeworth Parish Biodiversity

Arable Woods.

W1 Rowney Wood. 1.13ha. 2.8acres. This is a remnant of a much larger wood. Ancient Hornbeam woodland with Dogs Mercury and other ancient woodland indicators. Some invasion by Sycamore. Hawthorn hedge along the eastern boundary. BD=M

W3. Spill Timbers. 1.2 ha. 2.9 acres. Isolated wood set in intensive agriculture. Once part of a much larger woodland now reduced in size. Hazel and Field Maple coppice. Dogs Mercury. one or two stumps of much larger trees probably originally Oak. BD=M

W4. Fox Wood. 3.8 ha 9.4 acres. Consists largely of medium size Oaks. This gives the impression of a recently planted wood i.e. late 19th and early 20th century. Some Ash and Field Maple. Bracken on the southern edge. Soil sandy/ silty clay. Field adjacent is Brick Kiln Field which may give a clue to the origin of the wood. BD=M/H

W5. Tednambury Wood. 2.69 ha 6.6 acres. This is a long narrow partly wet wood sandwiched between the canal and river. It was originally leased or rented by Thomas Rivers for the cultivation of Osier Willow, Hazel rods and Sweet Chestnut poles by the nursery. The corner nearest to Kecksy's Bridge is part of Northfield Common and is grassy. There is evidence of some gravel extraction in the form of small pits and possibly brick pits at the northern end. There are some large to medium Oaks and large Willows. One veteran Crab Apple was recorded. the wood has a population of Bluebells and Primroses but both are being heavily impacted by Muntjac deer. BD=M-H.

W6. 18 Acre Wood. 4.11 ha. 10.17 acres. Old coppiced Hornbeam woodland with abundant Bluebell population. Some old boundary earthworks within the wood and along the western side where there is an old ditch and bank with the remains of a Small leaved Elm hedge. BD=H

W7. Two smaller Woods, the first is Round Spring nearest to the M11 motorway. 1.75 ha. 4.33 acres. Old coppiced Hornbeam woodland with Bluebell population. Heavily impacted by clay pigeon shooting interest. BD=M. The second is Oak Spring. 2.15 ha 10.17 acres. Like Round Spring

this is an old coppiced Hornbeam woodland with abundant Bluebell population. Large Oaks and Ash which have also been coppiced. BD=M-H.

W10. This wood is situated on an area which used to be locally known as the Racecourse due to the amateur riding interest of the farmer. 0.66 ha 1.62 acres. A narrow strip of woodland planted along the line of one of the branches of the Sawbridgeworth Brook. It may have its origins as a screening plantation. Contains a variety of trees including Oak, Ash and Larch. There are some shrubs including Privet and Willow at the wetter southern end. BD=M

W11. Redericks Wood. 1.63 ha 2.04 acres. This is a narrow strip of coppiced Hazel woodland leading down from the farm towards the river. In recent years it has been the focus of a game rearing interest. BD=M-L

W25. Roadside Cemetery Belt . 3.78 acres . Young Oaks and Ash at the Cemetery end. The only Rookery in the parish . The eastern side of the belt has a ditch with a young Hawthorn hedge . Some invasive species in terms of Three Cornered Leek and Lesser Periwinkle, also Snowdrops alongside old layby area . As the belt progresses northwards it becomes more scrubby with a large number of young Small Leaved Elms. The belt becomes a real mixture of different trees including Larch and Holly . Some much older Oaks recorded probably 19th century . Several old coppice Ash stools and an older oak post fence line adjacent to the entrance to Tednambury Farm Lane. It would seem that this belt has evolved as changes in the main A11 road have taken place .BD=M

W27. Tednambury Osier Bed. 0.52 ha 1.29 acres . This is a small triangular plantation of Aspen, Alder and Osier Willow . It was developed on the site of a pre-existing plantation of the same kind as a result of an ecological survey and work on the farm .BD=H

W28. Tednambury Island Plantation. 2.38 ha 5.88 acres . This area was planted up as part of the previously mentioned scheme and contains the same mixture of Alder, Aspen and Willow. it is adjacent to the canal and was formed when a loop of the original river was cut off by construction of the canal . BD=H.

W29. Mill Leat Plantation. 0.6 ha 1.49 acres . This was another plantation in the same scheme but has since been purchased by another landowner who has modified the area bringing about a reduction in biodiversity. The

Tednambury Brook flows along the side of this plantation before joining the course of the Old River Stort in this backwater loop .BD=L

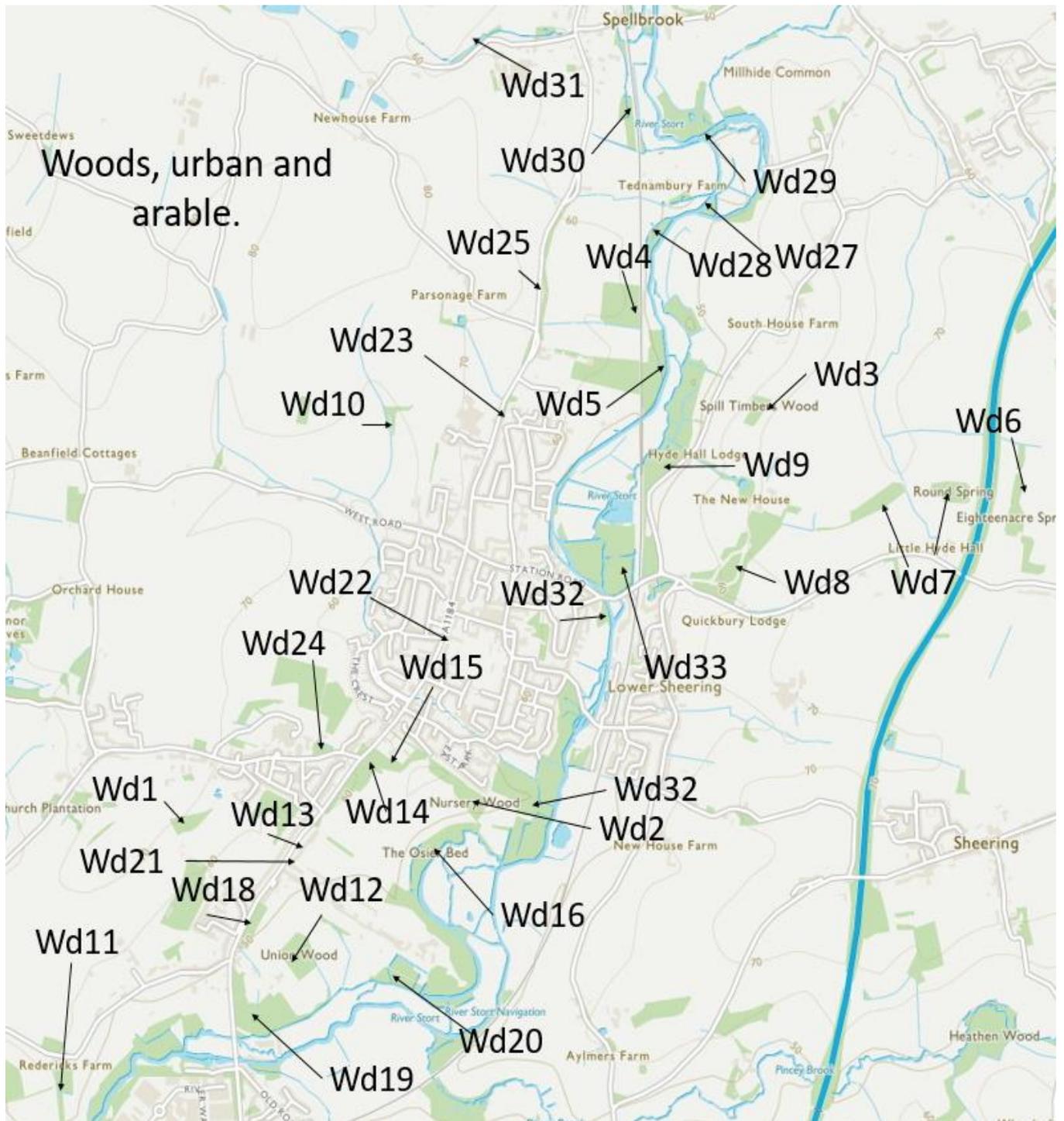
W30. Spellbrook Cricket bat Willow Plantation . 1.18 ha 2.92 acres . This is a commercial plantation for the cultivation of cricket bat willows . It is a very wet area taking some of the flow of the Spell Brook and being on a level with the floodplain. It forms the main inflow to the Tednambury Brook. At the time of the survey the mature bat Willows had been felled and replaced with new plantings. BD=M-H

W31. Corridor woodland developed along the upper part of the Spell Brook adjacent to Spellbrook Lane West . Field Maple , Hazel , Elder. The grounds of the grass mower factory planted up with hybrid Alder and Silver Birch . Woodland developed along a deeply incised course of the brook with Poplar and Hazel . Roadside hedge with Dogs Mercury , Hazel, Hawthorn and Field Maple. Blackthorn hedge and thicket with Wild Rose . BD=M

Suggestions for Action.

Many of these sites are on private ground or with restricted access. All can be viewed from the highway or public footpath and thus could be included as features on a 'Green Walks' leaflet.

If the opportunity presents itself the main suggestion would be to encourage landowners to participate in the new government environment scheme of 'Public money for public good'.



Sawbridgeworth Parish Biodiversity

Waterbodies. Streams, ditches and ponds,river.

Water bodies. Streams.

W1. Spell Brook. 0.42 miles. This small stream drains the area to the west and north-west of Spellbrook. It is fed largely by water from agricultural land and to the west of the hamlet is at times quite deeply incised and runs through woodland. Nearer to the main road a clean gravel bed is in evidence but it is also subject to spate flooding. On the east side of the main road the stream runs along the front of residential properties and finally feeds into the main watercourse of the River Stort in the vicinity of the railway.

Kingfishers have been recorded and proper sampling of the invertebrate biodiversity in the stream bed is planned .BD=M/L.

W2. Sawbridgeworth Brook. 1.93 miles. Initially rising in two branches to the north-west of the town, the Brook passes under West Road where there is the first of many additions of surface water from roads and drains. The bed of the Brook is gravel with some addition of man-made materials. It flows through a corridor of planted trees at the West Road play area and then enters a line of Blackthorn through to Gilders. Along Brook Lane it flows parallel to the old hedge line described elsewhere and it is this stretch from here upstream which is particularly vulnerable to drying out during the summer months. There is a major input of surface water from the London Road area and a significant proportion of road silt and general micro debris and chemicals is added to the gravel bed from the passage of road vehicles. The Brook follows a natural, rather winding course through to the point where it flows under the road at Vantorts. There is a significant input of clean water at this point both from the gravel aquifer and from the springs at Springhall.

Alongside the allotments at Southbrook the biodiversity score is quite high and there are small fish present in terms of Minnows and Bull heads. BD=M/H.

W3. Pishiobury Brook 0.7 miles.

This Brook is formed from the outflow of the Serpentine lake both through the waterfall, sluices and the outflow from the Moat which flows alongside the old kitchen garden. It is highly probable that the original course was modified from an existing drainage ditch which is typical of that found throughout the valley where a ditch has been dug at the foot of falling ground to capture water moving downhill. These channels typically follow the contour of the land and it looks as if it is this course which has been adopted. The bed of the Brook is gravelly and it has been modified by the farmer by the addition of gravel to the bed of the Brook to create a shallow area for cattle to drink, this appears to have been a typical practice in this local area and results in the creation of a high biodiversity gravel bed. This can be seen where the footpath from Pishiobury Drive to Harlow Mill crosses the Brook. From this point the Brook flows along the south side of the Rowneybury

Grounds before rejoining the backwater loop of the Old River Stort just east of the main road crossing at Harlow Mill. It is known that both Otters and Kingfishers use this brook. BD=M/H.

W4. Pishiobury Park Ditch. 0.79 miles. This ditch only flows periodically, taking surface run-off from the High Wych and Harlow roads. Through the Park its course is marked by a line of older Hawthorns and the gradient has been modified at some point probably in the 18th-century. This modification was almost certainly to enable what would have been a wetter and marshy area of the Park to be drained as part of the creation of the 18th-century landscape Park. A small pond has been excavated in the 1980s and a pond dipping platform installed which was never successful due to the fact that the pond receives polluted water from the main road and the biodiversity is hence low. The ditch follows an interesting course through the gardens of houses at Pishiobury Drive, passing under a culvert under the Drive and then reappearing in the Meadows on the south side of Pishiobury Drive to join the Pishiobury Brook. BD=L.

W5. Tednambury Brook. 0.49 miles. This short length of Brook has its origins in the area adjacent to Spellbrook Jr School but there is also an input from the cricket bat willow Plantation area alongside the railway. It flows under the railway onto the land at Tednambury Farm and then over the floodplain. Because the River is higher in level at this point than the Brook, it passes in a culvert underneath the canal, re-emerging to join the Old River Stort backwater loop at Hallingbury Mill Marina area. BD=L.

W6. Hyde Hall ditch. 0.12 miles. This ditch drains the sewage treatment plant at Hyde Hall and runs down the hedge line from the plant, under the Hallingbury Road and onto the Sawbridgeworth Marsh Nature Reserve. BD=Very Low as treated sewage effluent rich in phosphates and organic sediment.

W7. Hyde Hall Road brook. 0.29 miles. This small brook rises a short distance up the road towards Hatfield Heath and flows along the north side of the road, disappearing into a culvert part of the way along the woodland fringing Hyde Hall. It reappears on the Essex side in a pipe where calcareous tufa can be seen. It continues on the Essex side through the small triangular area of wet woodland adjacent to what was the Railway Hotel. BD=L.

Ponds and Lakes.

W8. Small ponds at Tednambury Farm. The first is adjacent to the Toll House on the private road leading to the farm and the second is in a hollow on the field to the south of the farm. It is probable that the first was originally a water reservoir as there is a small disused pumphouse adjacent and the adjacent field is called Pond Field. Both ponds are essentially ephemeral in nature and subject to drying up during the summer months. BD=L

W9. Springhall 'Lake' Vantorts Road. This small private lake was much more in evidence before recent development on the site and was fed by the spring giving Springhall House its name. BD=?

W9. Redricks Lakes. 2.3 ha. 5 acres and 3.27 ha 8.8 acres. These lakes are on the site of earlier gravel extraction are bisected by the parish boundary. They have been developed into a leisure facility for fishing and swimming. The less disturbed Lake has Great Crested Grebe, Gadwall and Tufted Duck. Development of the nearby North Harlow is likely to have a heavy environmental impact on this area.

W10. Pettypools.

W11. Pishiobury Lake. 1.07 ha. 2.65 acres. This is the Serpentine lake of the 18th-century landscape Park. It was developed by diversion of the Old River Stort backwater and its level was originally controlled by an adjustable sluice from the River Stort canal. Today, it is much silted up and is inaccessible. It is very likely to be a haven for wildlife. BD=H

W12. Round Moors Pond, Reed Bed Pond, Alec Martin Pond and the Valet Homes ponds are part of the complex Sawbridgeworth Marsh Nature Reserve. Each pond has its own character and none of them are of any great size. Frogs spawn annually in Round Moors and 12 Spined Sticklebacks were at one time common in the others but confirmation required. The ponds are home to a thriving colony of Water Voles. BD=H

W13. Sawbridgeworth Angling Society Fishing Lake. 1.3 ha. 3.23 acres. This water was originally designed as a trout fishing lake in private hands and was then acquired by the above Angling Society and is now a coarse fishery. It is typically a carp fishery but other species are present. There is an anti-otter fence to prevent predation. Little Terns are occasionally seen on the lake as are Kingfishers. There is a semi-resident population of Mallard and Canada Geese. BD=M

W14 Union Wood lake. 0.2 ac 0.08 ha. This is a small man-made lake in the middle of the above wood. Private area. BD?

W15 Primrose Bungalow, High Wych Road. 0.06 ha 0.14 acres.

W16 Kecksy's Farm. 0.08 ha 0.19 acres. These two recently excavated man-made lakes both undergoing colonisation and succession by Reed Mace. Boast on private sites. BD?

W17. Hyde Hall. 0.17 ha 0.42 acres. This is a small circular ornamental lake in the grounds of Hyde Hall. It is probably spring fed as the levels are constant. BD?

W24. Parsonage Farm Pond. 0.08ha 0.19acres.

This small pond area created within the private grounds of the farm. There is almost certainly rising water in the vicinity and there was originally a deep moat now dry. The pond feeds into the ditch towards the main road. BD?

River and canal.

W18. River Stort canal. 4.9 miles. Starting at the north end of the parish at Spellbrook Lock the canal Navigation this is the man made waterway constructed in part from the course of the original River and in other places cutting across bends and valley spurs. There are five disused corn grinding mills with associated locks. In several places there are 'spill ways' where water flows out of the canal into the back water loops which are the course of the Old River Stort. Originally utilised for transporting coal and timber upstream and taking malted barley downstream to London for the breweries. The canal is bordered with the tow path which indicates that the original mode of transport was horse drawn barges. In more recent times the waterway was used by small pleasure cruisers in the 1960s and 70s and is now heavily used by narrowboats with associated marina sites. The water supply to the river is a combination of inputs from the Chalk aquifer and further downstream gravel aquifers all of which are heavily abstracted for drinking water. The other inputs are from treated sewage effluent of which there are six in the watershed which influence the water quality in our section of the River. Addition of phosphates from treated sewage effluent and regular agitation by narrowboat passages along with periodic dredging episodes has resulted in a dramatic loss of the macrophyte water weed population causing a subsequent reduction in biodiversity. A conservation success story has been the reappearance of the Otter in the River indicating that the fish population must be sufficiently robust to support this top predator. Several reintroduction of the Water Voles is leading to a reappearance of this small mammal which was once driven to the point of extinction by the feral Mink which are now subject to a control programme. BD=M.

W19. Thorley Wash back water loop. 0.28 miles. There is only a very short section of this back water loop in Sawbridgeworth Parish. BD=M.

W20. Hallingbury Mill loop. 0.59 miles. This loop incorporates the mill leat which would have originally powered the waterwheel at the mill. A significant proportion of the flow of the river passes through this loop and the associated marina site. The loop retains many of the desirable original features of the River including beds of Yellow Water Lily, Common Bulrush, and branched Bur Reed and Water Buttercup. Substantial shoals of roach, chub and bream can be observed. BD=H

W21 Sawbridgeworth Loop. 0.96 miles. Much of this loop is inaccessible and as with the Hallingbury loop it retains many of the original and desirable conservation features of the original River. Otter and Kingfisher are regular users. BD=H.

W22 Sheering Mill loop. 0.21 miles. This is a short loop which in the past has been vulnerable to pollution through a culvert which passes from the Maltings area under the railway line and canal emerging in the bank of the back water loop. It retains once again many of the original features of the River including Yellow Water Lily. BD=M

W23 Pishiobury Loop. 0.72 and 0.29 miles. This is a double loop which was almost certainly modified and constructed to regulate the flow of water through the serpentine lake at Pishiobury. The outer loop follows an original meandering course taking it along the outer perimeter of the Osier Bed at Pishiobury Park and thence into the serpentine lake. The inner loop flowing through the area known as 'The Mores' follows the line of one of the original River terraces. It has a gravel bed and was once a stronghold for the Kingfisher. It is currently inaccessible due to being on private land grazed by horses and sheep, traditionally it was grazed by the dairy herd from New House Farm. BD=H.

W24 Harlow Mill loop. This is a short loop cutting through the commercial and residential development at Harlow Mill. It forms the boundary for the parish. There is good evidence for it being used by Otters and Kingfisher and the gravel and man-made material nature of the river bed suggests high biodiversity. BD=H/M.

Suggested Action Plan:

Current status.

- The canal is that part of the river which is navigable by boats. The backwater loops are the original course of the river before canalisation.
- The river flow is derived in part from chalk springs above the Bishop's Stortford, in part from the gravel aquifer underlying the floor of the valley and in the greater part from treated sewage effluent. Contribution to this effluent is from small treatment works at Clavering, Manuden, Little Hallingbury, a large works at Stansted and a very large treatment works below Bishop's Stortford. These treatment works between them contribute a large part of the river flow especially during the summer months.
- The effect of the treated effluent is to enrich the river with phosphates resulting in excessive algal growth and in more recent years toxic blue green algal 'blooms' associated with the hot weather. The turbidity resulting from the algal growth and organic sediment has the effect of suppressing the growth of higher water plants such as Water Lilies.
- The river is heavily used by narrow boaters as is the towpath for walking, running and cycling.
- The fact that the river seems able to be able to support a wide range of coarse fish providing support for animals such as the otter suggests that there is a substantial food chain and biomass pyramid.

Current factors affecting the Habitat.

1. Wide range of flow rates being sometimes excessive spate flooding and at other times excessively low flow rate. This has the effect of creating instability in the ecosystem.

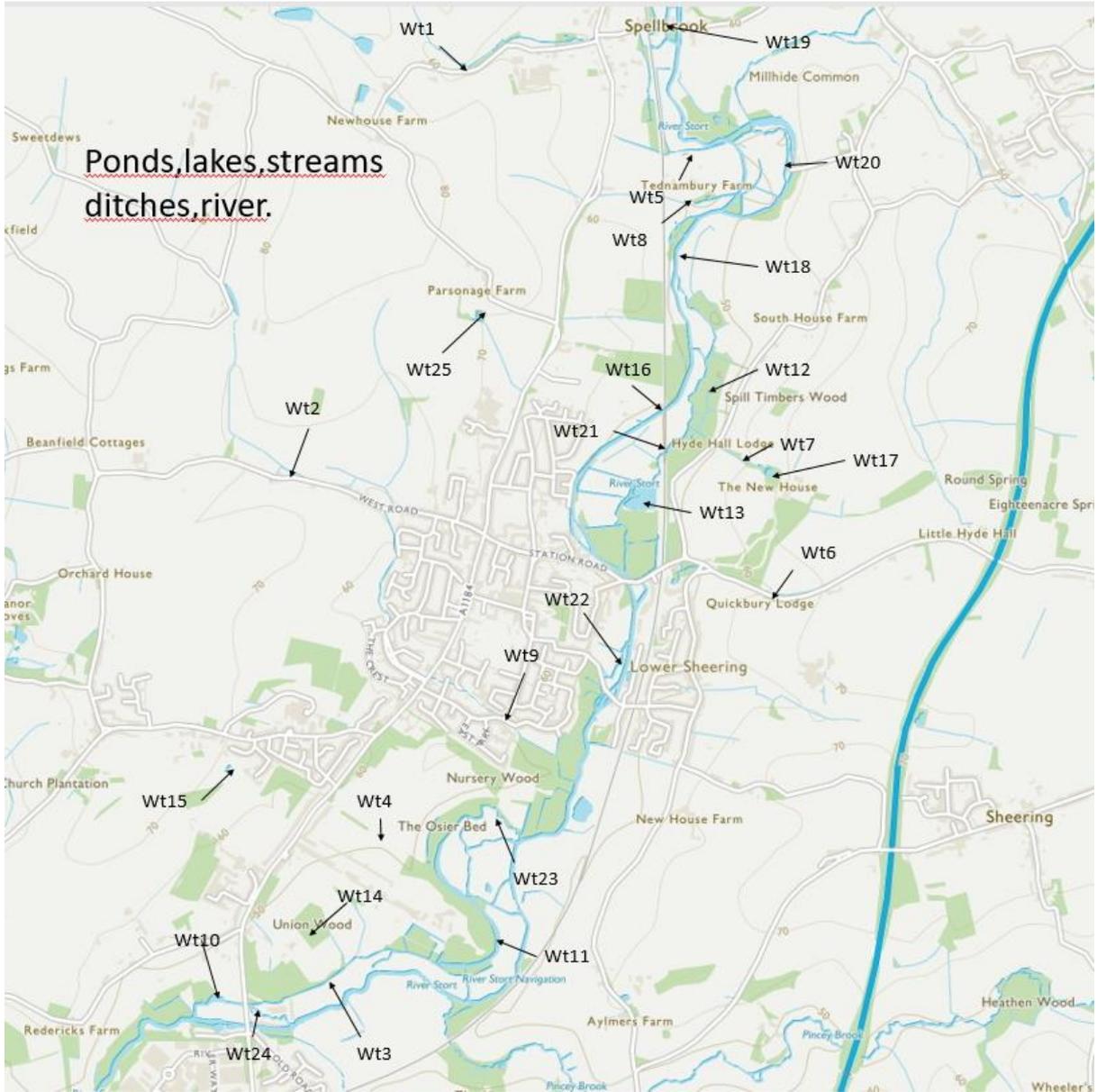
2. High a rate of phosphates resulting in a condition known as 'eutrophication' which similarly is a cause for instability.

Current Action

The canal is maintained primarily by the Canal and Rivers Trust for river users. Work carried out includes cutting back of riverside trees and mowing and cutting along the towpath. Some dredging and silt removal is carried out where deemed necessary. The Environment Agency carry out sampling of the fish populations primarily in the backwater loops and water quality checks are also carried out. Unfortunately the 'what's in my backyard' section of their website is no longer available so it is not possible to check the water quality of the river.

Proposed Actions

1. Carry out Citizen Science exercise to investigate the biodiversity of the canal. Use the results to formulate a Biotic Index for water quality.
2. Similarly, use reliable chemical water tests to monitor water quality.
3. Liaise with the Canal and Rivers Trust regarding what may be considered to be unnecessary cutting of the vegetation along the towpath causing damage to riverine habitat Including that of Water Voles and Water Shrews as well as lowering the general level of biodiversity. Monitor and record vegetation along the towpath.



Action Plan
River Stort canal.
<p>Current status.</p> <ul style="list-style-type: none"> •The canal is that part of the river which is navigable by boats. •The river flow is derived in part from chalk springs above the Bishop’s Stortford, in part from the gravel aquifer underlying the floor of the valley and in the greater part from treated sewage effluent. Contribution to this effluent is from small treatment works at Clavering, Manuden, Little Hallingbury, a large works at Stansted and a very large treatment works below Bishop’s Stortford. These treatment works between them contribute a large part of the river flow especially during the summer months. •The effect of the treated effluent is to enrich the river with phosphates resulting in excessive algal growth and in more recent years toxic blue green algal ‘blooms’ associated with the hot weather. The turbidity resulting from the algal growth and organic sediment has the effect of suppressing the growth of higher water plants such as Water Lilies. •The river is heavily used by narrow boaters as is the towpath for walking, running and cycling. •The fact that the river seems able to be able to support a wide range of coarse fish providing support for animals such as the otter suggests that there is a substantial food chain and biomass pyramid.
<p>Current factors affecting the Habitat.</p> <ol style="list-style-type: none"> 3. Wide range of flow rates being sometimes excessive spate flooding and at other times excessively low flow rate. This has the effect of creating instability in the ecosystem. 4. High a rate of phosphates resulting in a condition known as ‘eutrophication’ which similarly is a cause for instability.
<p>Current Action</p> <p>The canal is maintained primarily by the Canal and Rivers Trust for river users. Work carried out includes cutting back of riverside trees and mowing and cutting along the towpath. Some dredging and silt removal is carried out where deemed necessary. The Environment Agency carry out sampling of the fish populations primarily in the backwater loops and water quality checks are also carried out. Unfortunately the ‘what’s in my backyard’ section of their website is no longer available so it is not possible to check the water quality of the river.</p>
<p>Proposed Actions</p> <ol style="list-style-type: none"> 4. Carry out Citizen Science exercise to investigate the biodiversity of the canal. Use the results to formulate a Biotic Index for water quality. 5. Similarly, used reliable chemical water tests to monitor water quality. 6. Liaise with the Canal and Rivers Trust regarding what may be considered to be unnecessary cutting of the vegetation along the towpath causing damage to riverine habitat Including that of Water Voles and Water Shrews as well as lowering the general level of biodiversity. Monitor and record vegetation along the towpath.

Action Plan
River Stort backwater loops.
<p>Current position.</p> <p>The backwater loops are that part of the natural course of the river which were cut off during the construction of the canal. In many ways, they retain many of the characteristics of the original river and are seen as a 'gold standard of biodiversity'. On our section of the river we are very fortunate in having part of the Thorley Wash loop, the Hallingbury loop, the Sawbridgeworth loop, Sheering Mill and Pishiobury loops. They represent a secluded refuge for wildlife away from the busy canal. The Environment Agency commissioned a detailed survey of the back water loops in 2009 which flagged up the importance of this section of the river and included a number of Red Data book species. Currently, the Environment Agency seemed to lack the internal specialists to carry out this type of surveying and such projects are contracted out.</p>
<p>Current factors affecting the Habitat.</p> <ol style="list-style-type: none"> 1. Variable flow rates in the river as a whole have an exaggerated affect on the back water loops. At one time they can be subjected to extensive sheet flooding and damaging flow volumes whilst at other times the flow can almost cease especially when the water level in the canal falls below the level of the spillways which feed the backwater loops. This typically happens at times of heavy narrow boat usage in the summer months when the canal level is frequently lowered especially at the end of the weekend. Variation inflow rate of this kind is a very difficult for wildlife to cope with, a good indication being any only nest tunnels of Kingfishers being destroyed by spring floods and on the other hand potential deoxygenation through lack of flow rate during hot weather.
<p>Current Action</p> <p>The Environment Agency commissioned a detailed survey of the back water loops in 2009 which flagged up the importance of this section of the river and included a number of Red Data book species. Currently, the Environment Agency seem to lack the internal specialists to carry out this type of surveying and such projects are contracted out. As a result we do not have a clear current picture of biodiversity in the backwater loops and without it is being maintained or declining.</p>
<p>Proposed Actions</p> <ol style="list-style-type: none"> 1. Carry out a visual survey of the backwater groups and compile a report would regard to their general status. 2. Carry out such biodiversity sampling as is possible, not all of the backwater loops are accessible, several being on private land. 3. Carry out publicity to raise interest and awareness in the is almost unique and very special aspect of our local river.

Sawbridgeworth Parish Biodiversity

Urban hedges.

HG1. Hand Lane. 254m. Old managed field hedge. Silver birch, sycamore, small leaved elm, Holly, privet, Hawthorn, blackthorn, ash, elder, dogwood. BD=H.

HG2. Chaseways. 232m. Blackthorn, Crab Apple, Hawthorn, Elder, Ash. Old Field Maple stumps.

HG3. Chaseways to Wheatley Close. Very old Field Maple hedge line on field bank. Hawthorn, Blackthorn, Wild Rose, Dogwood. BD=H-M.

HG4. Northfield House. 130m Hawthorn, Blackthorn, Cherry Plum, Elder, Field Maple, Ash, Holly, Small-leaved Elm. BD=L due to proximity of road.

HG5. Brook Lane. 253m. Old field hedge with some wrought iron estate fencing. Blackthorn, Beech, Field Maple, Hazel stools, Cherry Plum, Yew, Dogwood. Several unidentified and may be cultivated forms as there used to be several cottages on the field side of the hedge. BD=M

HG6. Cricket field. 158m. Cherry Plum boundary hedge. BD=M

HG7. Town Fields. 200m. A run of mixed hedge from the main road to the cricket club pavilion including Holly, Cherry Plum and various garden escapes. BD=M

HG8. Brook Road. 115m. Remains of old Hawthorn field hedge running alongside footpath. Overgrown with ivy, being encroached on by fencing from East Park gardens. BD=M

HG9. Springhall Road. 20m. Mixed hedge of Privet, Forsythia and Chinese Honeysuckle. BD=M

HG10A. Sayesbury Road. 198m. A collection of small individual household frontage hedges on the older properties. Mostly Privet. BD=L

HG10B. West Road. Small Gains Cottages. 36m. Hawthorn hedge adjacent to garages. Favourite home of a colony of House Sparrows. BD=M

HG11. West Road. Clay Lane Farm. 440m. Overgrown roadside hedge on both sides. Field Maple, Hawthorn, Blackthorn and Small-Leaved Elm. BD=M

HG12. Rivers Beech hedge. At least 243m of managed veteran beech hedge. BD=M

HG13. Hatfield Heath Road. 242m. Cherry Plum. BD=L

HG14. Hyde Hall. East to Oak Spring. 145m. Sycamore, Ash, ending in Blackthorn thicket. BD=L

HG15. Hyde Hall. South eastern estate boundary. 302m. Deep ditch with water. Evidence of old hedge and boundary line. Old pollard and coppiced oaks and field maple. Hazel stools. BD=H-M

HG16. Hyde Hall. North side. 331m. Old field hedge. Oak, Field Maple, Blackthorn, Hawthorn. BD=M

HG17. Hyde Hall. From above to back drive entrance. 336m. Closely cut Hawthorn largely overgrown with ivy. BD=M-L

HG18. Hallingbury Road. From start of nature reserve at north end to back drive entrance to Hyde Hall. 384m. Ash, Hazel, Crab apple, Elder. One veteran oak 19c. BD=H

HG19. Hallingbury Road. Opposite side to previous entry. Sequence of old Hazel coppice stools and two veteran oaks probably pollards. Dog's mercury indicative of ancient woodland.BD=H-M

HG20. Hallingbury Road. 262m from Hyde Hall back drive entrance to corner. Sallow, Field Maple, Hazel, Spindle, Cherry Plum, Blackthorn, Hawthorn, Alder, Crack Willow.BD=H

HG21. Hallingbury Road. 241m. From Station Road to entrance to fisherman's lake. Hawthorn, Field Maple, Willow, 2 large 19c Oaks.BD=H

HG22. Pishiobury Park. Hawthorn hedge to Osier Bed. 512m. Almost 100% Hawthorn with occasional Privet.BD=M

HG23. Pishiobury Park.Three Acre Mead. 218m. Large Hazel and Blackthorn with occasional Elder and Blackthorn. One clump of Butchers Broom.BD=M-H

HG24. Pishiobury Park. By boardwalk leading to river from Springhall Meadow. A row of very old Hazels probably planted by Thomas Rivers. 69m.BD=M-H

HG25. Springhall Field. 277m running alongside the Sawbridgeworth Brook by Southbrook allotments. Large Beech and Field Maple next to Springhall Lane. Cherry Plum. Hawthorn. Blackthorn. Sycamore. A number of old Hazel stools. Field Maples.BD=H

HG26. Springhall Lane.298m. Cherry Plum. Hazel. Elder. Small leaved Elm. Sycamore. Opposite parts of Kings Mead the top of the hedge is regularly cut flat by residents to maintain their view. Hawthorn. Cherry Plum. Blackthorn. Onwards from the point where the footpath crosses on to Springhall Meadow there are numerous small leaved Elms. On the Park side – Hornbeam, Wild Rose, Elder, Hawthorn. At the end of the lane there is an old Beech on the right and opposite on the field side a veteran and broken down Elm with numerous suckers colonising the hedge.BD=M-H

HG27. Springhall Meadow. 135m. The hedge dividing the field with the causewayed enclosure from the fallow field adjacent to the north. A largely derelict hedge consisting previously of Elms which have died from disease. A significant number of very large and very old Cherry Plums. Blackthorn suckering out into the meadow.BD=M

HG28. Forebury Avenue and Crescent.502m 23pprox.. of small sections of front garden hedges attached to older properties. Mostly Privet.BD=M-L

HG29. Fawbert and Barnard School Hedge. 146m of maintained hedge running alongside Forebury Avenue. Probably originally Hawthorn and Cherry Plum but now largely overgrown with Ivy.BD=M

HG30. Reedings School. 114m. Maintained school frontage hedge, mostly Hawthorn.BD=M

HG31. Mandeville. 382m. Mostly inaccessible due to development but school frontage hedge mixed with Holly, Cherry Plum, Blackthorn and Elder. This part forms a green corridor from West Road through to Leventhorpe Sports Field.BD=M-H

HG32. Leventhorpe. 557m as perimeter hedge to sports field. Mostly Hawthorn but with addition of Privet, Dogwood and Poplar on the stretch leading down to the ditch on the southern boundary. 96m of original field hedge incorporated into the sports field when the area was taken in from arable land. Field Maple, Blackthorn, Common Buckthorn incorporated into the original school Wildlife Area.BD=M-H

H39. 109m of roadside hedge fronting properties (Brickwell Villas) on the North side of West Road. This dense hedge of mixed mostly climbing and straggling garden species is established on a steep bank at the bottom of which is car parking. Blackthorn, Hawthorn, Travellers Joy, Wild Rose. BD=M.

HG39. Spellbrook Lane West. 651m. Roadside hedge with various garden plantings including Yew, Horse Chestnut, Douglas Fir? Ash, Field Maple, Hazel, Wild Rose, Elder, Small leaved Elm, Hawthorn. Ivy covered maintained hedge. Silver Birch. Hybrid Alder in grounds of lawnmower factory.

Hg40. Spellbrook School area. 170 and 166m .Several ditches (one with running water) with associated hedge lines leading from the main road to the railway. Large Willows, Hawthorn, Hazel, Sallow, occasional young Oak.

Urban hedge summary.

Within the urban area of Sawbridgeworth, hedges fall into four categories.

Hedges which were previously a feature of farmland but which have now become absorbed into residential development. These older hedges may be single species but more frequently multiple species and thus have higher biodiversity. Hedges which have been planted up, often with single species, to form boundaries around schools. Hedges which have developed piecemeal associated with older residential development, these are frequently single species, typically Privet. Hedges planted up around green spaces and sports fields often Cherry Plum.

Suggested actions:

- Encourage planting of new mixed species hedges.
- Suggest hedges cut after bird nesting season finishes.
- Encourage retention and regeneration of existing hedges.
- Survey for old hedges with age calculations.

Sawbridgeworth Parish Biodiversity

Arable hedges.

H33. Field Hedges to the west of Rowneybury Farm and the old Triangle Nursery Site. 816m+. Maintained hedges along ditch lines. Mostly Field Maple, Hazel, Wild Rose, Dogwood and very a occasional Common Buckthorn. Interspersed with standard Oaks and the occasional very old Oak pollard. There are occasional green margins probably maintained for vehicular access. BD=M.

H34. Mile Pond Farm. 388m of old largely derelict hedge leading down to the old railway crossing for horses and carts. Medium size Small leaved Elm at the west end and regularly spaced old Hazel stools on hedgebank. Bramble and occasional Sallow at railway end. BD=M

H35. Sawbridgeworth Cemetery. 470m leading down to Fox Wood. The south side of the ditch has been planted up with Hazel and Ash. Younger small leaved Elms of various ages. Bramble and Elder. BD=M-L.

H36. Hedge leading west from site of current car washing plant opposite entrance to Tednambury Farm Lane. 905m. Ditch of increasing depth uphill with grass margins on both sides. Young Elms and Blackthorn, Hawthorn, Wild Rose, Sallow, Oak saplings. Rough corner at top end with Hardhead, Willow Herb, Hazel, coppiced Ash and larger Oak. The ditch divides into two with one branch heading towards Spellbrook Lane. This is a very old hedgeline having Crab Apple, Wild Rose, Hazel, Elm, Field Maple, Hawthorn and very old derelict Oak, old coppiced Ash and Hazels stools. Narrow grass margin. This hedge has the potential to have high biodiversity but this may be limited by the surrounding agricultural practices.

H37. West Road play area. Collection of trees and shrubs alongside the brook bordering the children's play area. 0.07 miles.

Beech, Field Maple, Oak, Ash, Willow. There appears to be the remains of an old field hedge with coppiced Hazel and Field Maple. BD=M.

H38. A complex of mixed hedges to the west of the White Post Field development and adjacent to the Rivers Hospital site. A total of 1.39 miles. Well established hedges along ditch lines. Field Maple, Blackthorn, Oak, Dogwood, Hazel. BD=M/H.

The area is currently being encroached upon by the West Road development.

Other than those adjacent to the Hyde Hall Estate no hedges could be recorded on the eastern side of the parish. Consultation with the 1839 Tithe Map will indicate the level to which hedges have been removed and fields amalgamated to fulfil the needs of modern agriculture.

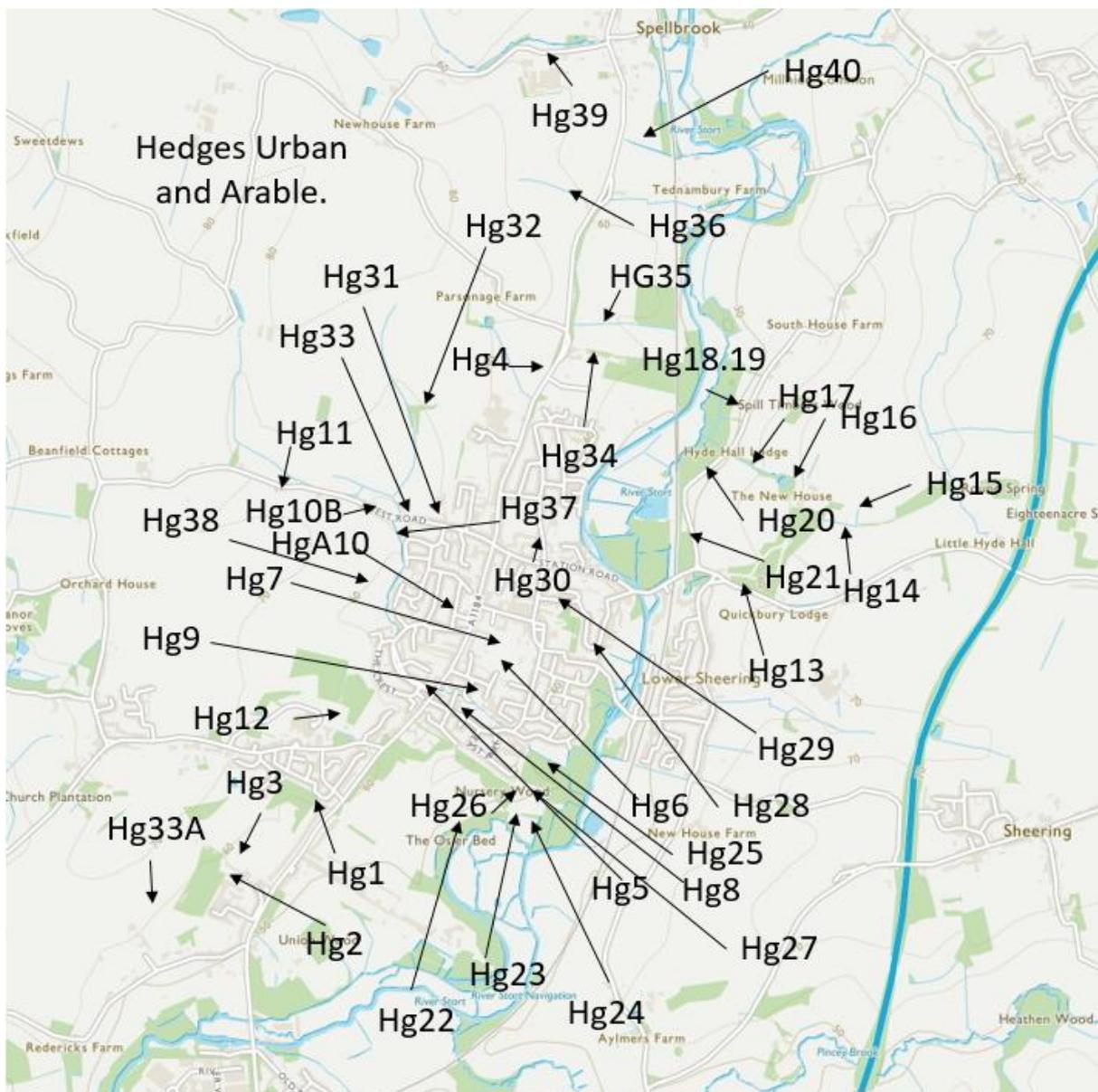
Arable hedges summary.

The general impression is that hedges have only survived where they are integral to a land drainage pattern. The general management of those still existing seems to be a regular trim leaving in place any larger trees. The creation of grass margins is favourable to biodiversity but may equally be in place due to a recommendation to avoid self patient of ditches and waterways through runoff. In some places rough corners have been left almost certainly due to the fact that

very large machinery cannot negotiate such tight turns. These have a high biodiversity potential but this may be limited by their isolated position and surrounding agricultural practices.

Suggested actions:

- If the opportunity should arise, then make suggestions to farmers and landowners regarding management of their hedges to further encouraged by diversity.
- It is possible that the current government advice to give 'public money for public good' with a definite environmental bias linked to payments, may be a way forward to increase biodiversity.



Sawbridgeworth Parish Biodiversity

Grasslands.

Under this heading are considered areas of grassland which have been created or developed specifically for this sole purpose rather than being a public green space.

G1. Pishiobury Park. 23.45 ha 62.9 acres. Listed as a County Wildlife Site with A* potential in the Phase 1 Habitat Survey 2013. Considered as unimproved or semi-improved grassland. The semi-improved aspect almost certainly comes from the fact that most of the Park is a sandy clay loam overlying Glacial gravel deposits and similar, these soils rapidly dry out in the summer months and those plants which have a bulbous root or underground storage organ are best suited to survive. The farmer who leased the grazing post World War II told me that they applied 1% nitrogen to the most favourable areas but never used any herbicides. On occasions they grazed up to 90 head of cattle on the Park along with several riding horses used for foxhunting and even a small flock of sheep at one time. Wide range of flowering plants making it's PCs rich grassland. Ancient grassland indicators including *Luzula campestris* and Pignut. Good populations of Ladies Bed Straw, Birds foot trefoil and Dwarf Thistle. Bee orchids flower periodically and there are a wide range of native grasses including Quaking Grass and Crested Dog's tail. There are a wide range and substantial population of grassland invertebrates including Cockchafer beetles and Adonis Ladybird. Wax Fungi appear in season. BD=H.

G2. Springhall Field. At one time this field was arable up until the early 1960s. It then reverted to grassland and became rough grazing. The quality of the flora reflects this heritage of dry gravelly soils. Ragwort, mouse ear chickweed, Speedwell, Spear Thistle and small Or form and Wild Rose scrub. BD=M

G3. Wildflower meadow at Rivers Hospital site. 1.36 ha 3.35 acres. This is a specifically created wildflower meadow and has a spectacular show of Cowslips in spring. Throughout the summer there are a succession of flowering grassland plants including Hard head and various vetches and trefoils. BD=H

G4. Tednambury Farm. 14.8 ha 36 acres. Most of this linear grassland has been improved but an area towards Kecksy's Bridge is listed as a County Wildlife Site. BD=L/M.

G5. The Chase. 6.19 acres 2.5 ha. Heavily improved grassland which was used both for hay cutting and grazing until recently. BD=L

G6. The Mores. 28 acres 11.3 ha. The name of this area implies low-lying wet grassland but part of it is on one of the river valley spurs and is dry valley gravels. Along with G7 and G8 these areas have all suffered from agricultural impact after the cessation of the grazing dairy herd at New House Farm. Practices have included turf stripping, growing linseed and

growing cannabis for fibre. It is currently being heavily overgrazed by horses and sheep. BD=L

G7,G8, 2.5 ha 6.2 acres and 9.9 acres and 4 ha respectively. As mentioned above these have suffered from heavy agricultural impact. BD=L

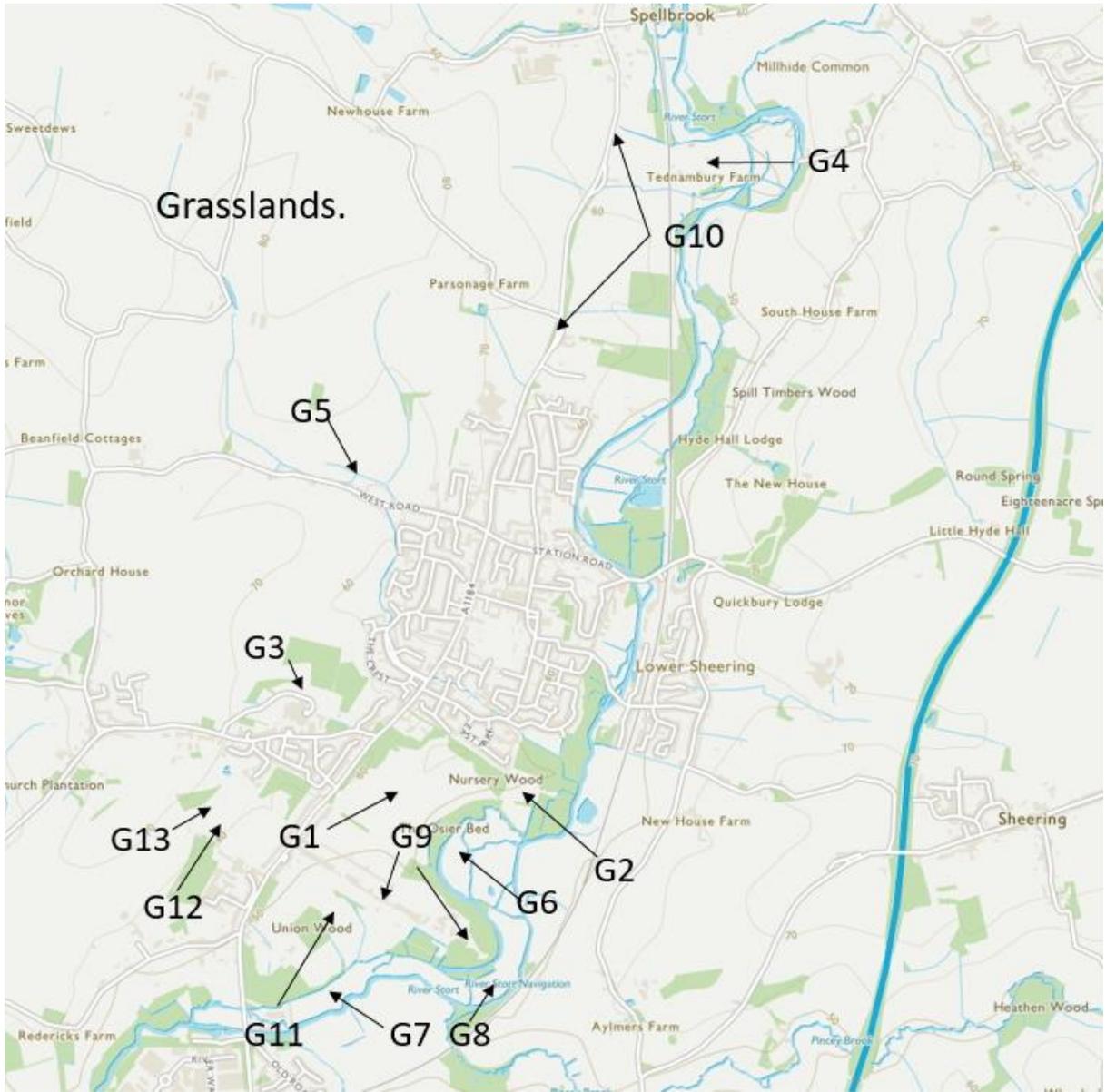
G9. Fields on the east and west side of Pishiobury House House. That on the east (1.59ha 3.93ac) was originally an arable field which reverted to grassland and now to scrub woodland. That on the west side (5.18ac 2.1ha) was the playing and cricket field which has reverted to rough grass and oak scrub. BD=M

G10. Grass Verges alongside the main road north of Sawbridgeworth. 0.58 acres 0.23 ha and 0.69 acres 0.28 ha. These areas were created during the straightening and improvement of the old A11 in the early 1970s. They are currently mown on a regular basis throughout the summer but have the potential to be good roadside wildlife refuges if managed more sympathetically. BD=L

G11. Grassland surrounding Union Wood. 31.4 acres 12.7 ha. This is very Private grassland surrounded by security fencing. It was known that a crop of Timothy Had a was taken regularly on a recent basis. BD=L

G12. Grassland adjacent to Rowney Wood. 5.46 acres 2.21 ha. This field has been rough grassland for many years although some topsoil used to be taken from it for use on the adjacent Triangle Nursery. It has recently been fenced and public access denied. BD=L?

G13. Rowney Bois Field. 2.33 ha 5.77 acres. Originally part of Rowney Wood this area was the riding school up until relatively recently. This area appears to be reverting to scrub but is very private. BD=?



Sawbridgeworth Parish Biodiversity

Grasslands.

Current status.

- Cattle grazing from April until October.
- Ongoing Friends Work Party items aimed at keeping the grassland in good conservation status.
- Listed as County Wildlife Site with A* potential. To the listing is aimed primarily at the conservation value of the grassland.

Current factors affecting the Habitat.

- Cattle grazing enriches the grassland habitat and encourages biodiversity through action of grazing, provision of nutrition for invertebrates via cow pats, mechanical action of hooves keeping the turf open and providing sites for seeds to germinate.
- Area heavily walked by the general public creating a significant impact via soil compaction and poaching of the surface during wet weather.
- The area is prone to drought as the subsoil on much of the park is a dry, sandy loam. This has the effect of favouring those plants which have a deep root system or some kind of bulb or root storage system. This can affect plant species such as Thistles which have a deep root system and Ragwort which if allowed to seed can readily colonise exposed soil.
- Potential enrichment by dog urine and faeces although most owners have a responsible attitude and clear up after their animal.

Current Action.

- The local authority currently receive funding for grazing through the Higher Level Stewardship Scheme.
- There is ad hoc monitoring of the flora as specified in the Friends work party schedule.
- Friends Work Parties carry out Ragwort pulling and some Creeping Thistle control using chisel hoes.
- There is an annual 'Bug Hunt' for children as part of Love Parks week.
- Friends Work Parties carry out ongoing clearance of scrub establishing itself in areas rich in flora.

Proposed Actions.

- Formalise organizing of the flora on an annual basis and produce an annual report.

- Work on measures to publicise the importance of the flora in a way which is attractive, relevant and interesting to the general public.
- Restart the butterfly transect established some years ago and report to the Herts Butterfly Group.
- Liaise with the grazier to carry out a proper 'Meet the Cattle' event to better inform the public about the animals and their importance in the maintenance of the grassland.

Sawbridgeworth Parish Biodiversity

Allotment sites.

There are currently four designated allotment sites in the parish. The level of cultivation varies both with the individual allotment holder and the sites. Two of the sites are on what might be considered to be lower grade land with underlying sand and gravel whilst the other two are on highly fertile floodplain areas.

A1. South Brook. 1.65 acres 0.67 ha. This is on the alluvial floodplain of the Sawbridgeworth Brook. Historically, the area was used for growing lettuces and was the site of a Dutch Light nursery. Being adjacent to what might be considered open countryside it is in a good position to increase biodiversity and this is further enhanced by the Sawbridgeworth Brook which runs along the southern edge. There appears to be almost 100% plot usage. BD=M/H.

A2. Vantorts. 0.13 ha 0.37 acres. This is a relatively small site at the back of the old people's bungalows. Some plots are in a high level of cultivation others less so. The soil is gravelly. There is a substantial hedge along the southern side. Hedgehogs are known to be present. BD=M

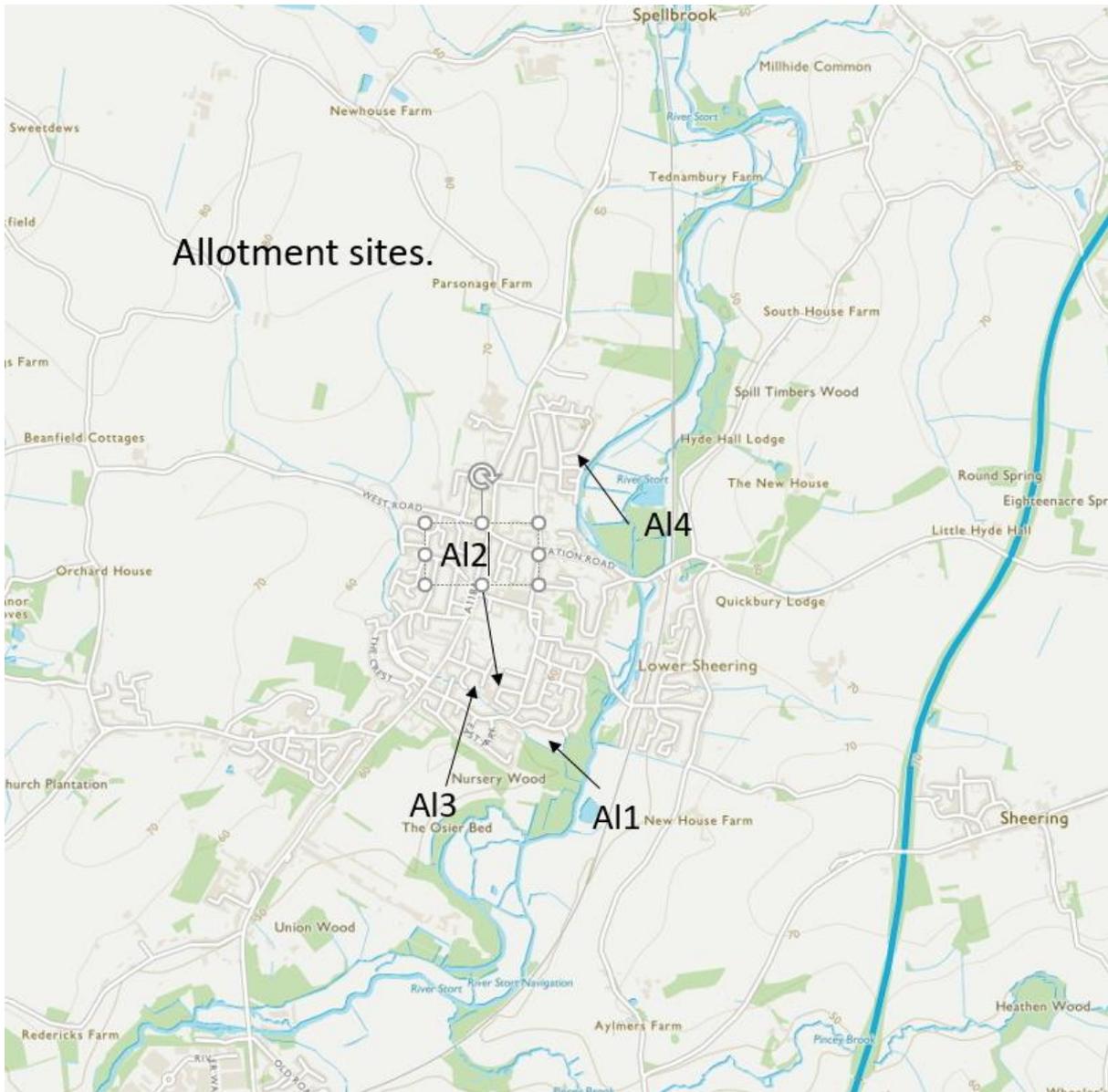
F3. Bellmead. 0.33 acres 0.13 ha. These allotments are on the alluvial floodplain of the Sawbridgeworth Brook. Plot usage is variable. They are adjacent to the Sawbridgeworth Brook which enhances the possibility of biodiversity. Due to the lower level of cultivation of some of the plots the biodiversity is probably relatively high. Hedgehogs present in 2015 survey. BD=M/H

A4. Bullfields. 1.06 ha 2.63 acres. This is a sloping site with a largely gravelly soil. It is adjacent to the River Stort and the open fields to the north. Plot usage is variable and the proximity of the river increases the possibility of biodiversity. BD=M/H

Suggested actions:

- The allotment sites present a real opportunity to develop biodiversity within the parish. The variation in the level of cultivation and the low use of herbicides and pesticides means that biodiversity is encouraged.
- Enthuse the allotment holders with the idea of biodiversity going hand in hand with cultivation of vegetables etc.
- Try and promote organic methods of cultivation including composting.
- Discourage fires and where possible use weeds and rubbish for composting or for habitat piles.

- Carry out surveys on the allotment sites with plot holders permissions including a survey of hedgehogs, bats, amphibians and reptiles and invertebrates.



Sawbridgeworth Parish Biodiversity

Arable land.

Arable land in this context means land which is being largely used for the cultivation of wheat, barley, field beans and the occasional oilseed rape and sugar beet crop. A total of 455 acres are estimated on the West of the parish and 253 acres on the East of the parish.

A1. Tednambury Farm. 72ac. 28 ha.

Intensive cereal cultivation. BD=L.

A2. Bursteads and Racecourse area. 85 ha. 211 acres.

Intensive cereal cultivation with a small area of grass margins. BD=L/M

A3. Fields to the east of the Grange in High Wych. 85 acres. 34.6 ha.

Intensive cereal and field bean cultivation with some grass margins. BDL/M.

A4. Redricks Lane area. 6.04 ha. 14.9 acres and 8.2 ha 20.46 acres.

Mainly cereal cultivation but some fields in Oilseed rape and field beans this year.
BD=L/M

A5. Hyde Hall area. 85 acres 34.6 ha.

Intensive cereal cultivation. BD=L

A6. Land to the south of West Road. 59 ha. 146 acres.

Intensive cereal production but parts of area soon to be partly lost to residential development. BD=L.

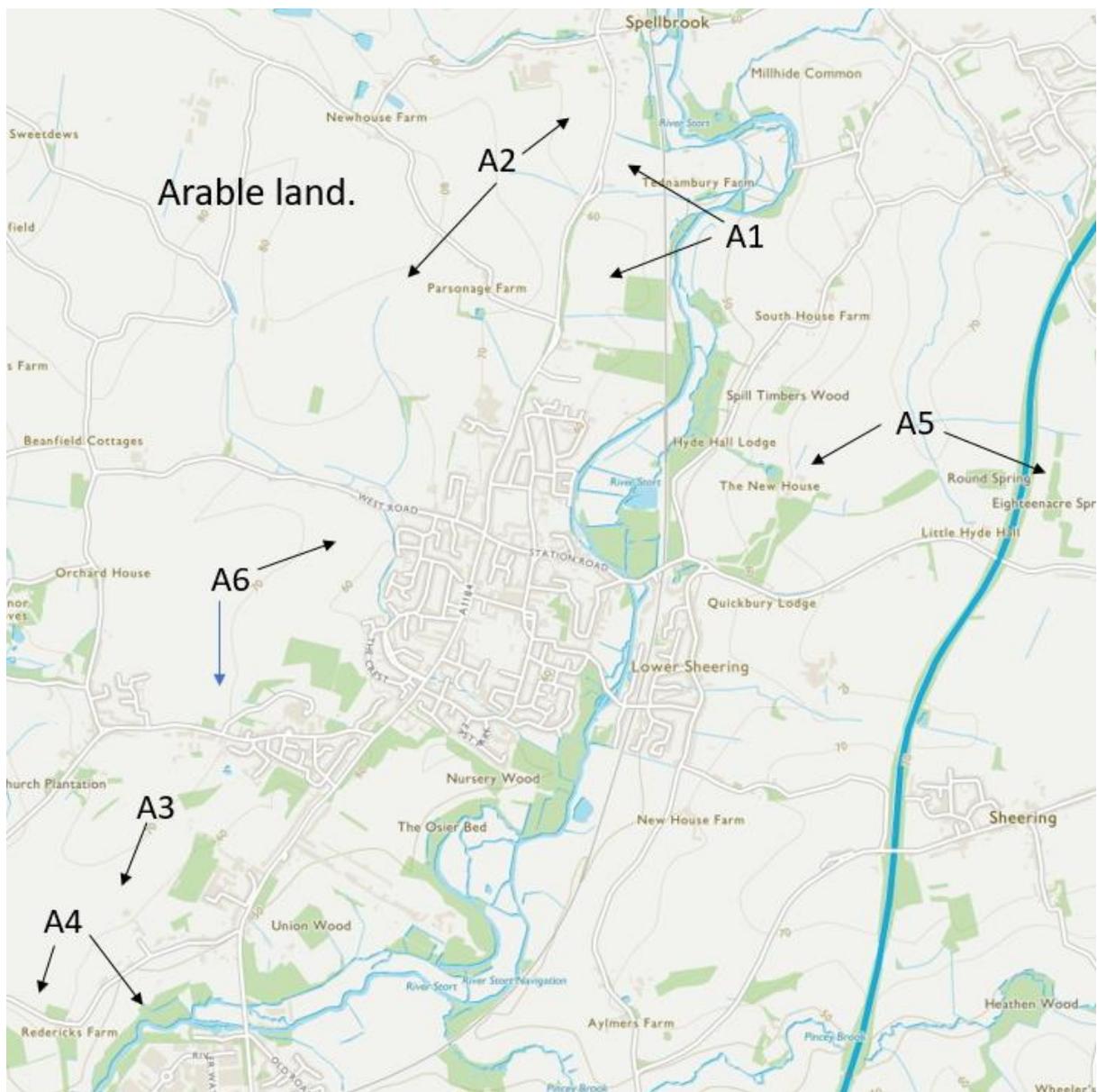
Current status:

The intensive nature of crop cultivation in all these areas means regular applications of herbicides, insecticides and fungicides. Some spray drift onto hedges and any headlands means that biodiversity will be continually reduced or largely eliminated. The crops will also be receiving heavy applications of artificial fertiliser much of which will probably end up running into waterways.

The occasional sighting of birds such as Partridges and Skylarks are possible but on the whole the biodiversity can only be assessed as low.

Suggestions for action:

Lobbying politicians and the farming community to bring about a change in attitudes and making it financially worthwhile for farmers to carry out measures on their land which will allow them to raise crops but respect the environment at the same time and encourage biodiversity.



Sawbridgeworth Parish Biodiversity

Fallow or derelict areas.

Fallow or derelict land in this context means areas which are no longer in use for their original purpose. It is highly probable that some of these areas have been set aside with a view to application for residential development at some time in the future.

F1. Springhall Lane. 7.29 acres 2.95 ha. This land was in cultivation until relatively recently when it started to turn into scrub when this process ceased. A lot of small oak trees and Bramble established and were removed several times. Currently a much more systematic removal of this scrub has taken place and the area now much more resembles a cultivated field with the exception of a very large pile of wood, tree stumps etc. BD=L

F2. The old Triangle Nursery Site at the end of Chaseways. 9.82 acres 3.97 ha. The old nursery buildings and greenhouses have been largely demolished with the exception of the Office Block. Very little remains except the concrete roads and paths. The area has been largely taken over by Bramble. BD=M

F3. Land at the back of Rowney Gardens. 19.6 acres 7.9 ha. This land was originally arable land but was fenced in and used for horse grazing as it reverted first of all to rough grassland and then to Blackthorn scrub. The old sandpit is sited at the north end. BD=M

F4. Rivers Nursery site. It is difficult to place an exact measurement on the area which is designated as fallow but is in the region of 14.64 ha 36 acres. Some of the area has reverted to Hawthorn, Blackthorn and dog would scrub whereas in other areas Sycamore and other trees have taken over. There is one area designated as a football field for children to play and another area of rough grassland. BD=M

F5. The site of the old Sawbridgeworth Town rubbish tip partly over the site of what was the sewage treatment works. 0.98 ha 2.41 acres. When the town was connected to the trunk sewer at Rye Meads in the early 1970s, the old sewage works was demolished and the area of the sludge settling ditches and pits was used as a disposal area for domestic rubbish. The area has been colonised by hybrid Poplar and Elder. It is judged to be a hazardous area due to the possibility of subsidence. There is also a distinct risk of seepage into the river from the site and something of this kind would never be given approval at the present day. It is understood that dredging of the river adjacent is disallowed due to the possibility of encouraging seepage and pollution. BD=L

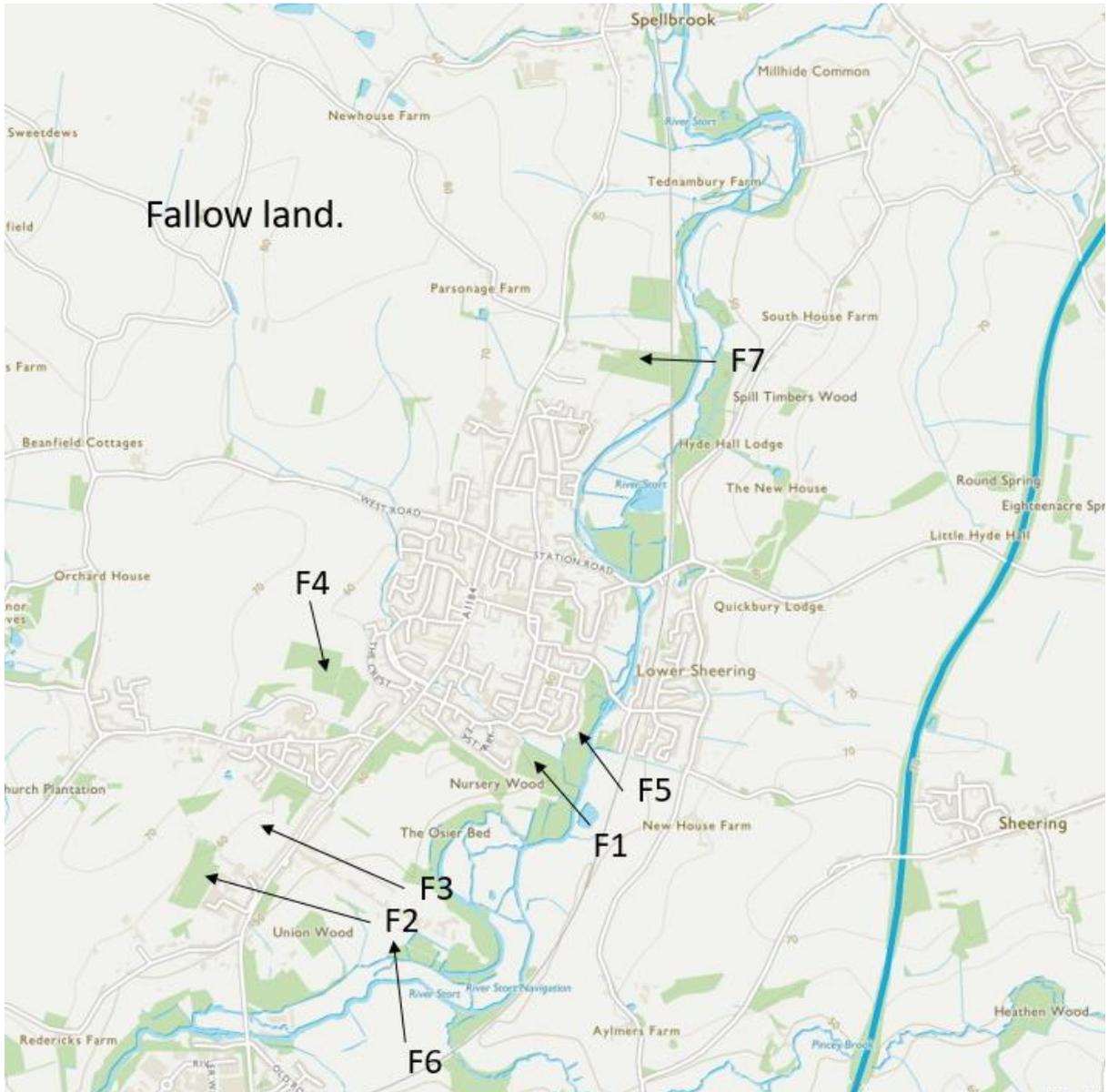
F6. Rookery Pasture or Gymkhana Field. 2.56 acres 1.04 ha. This was originally part of the southern section of Pishiobury Park and was grazed by cattle up until relatively recently. With the change of ownership of Rowneybury House and the consequent fencing of this

state, the grazing became untenable and the field is rapidly reverting to Bramble and Oak scrub. BD=M/H

F7. The old piggery site at 3 Mile Pond Farm. 5.37 ha 13.27 acres. This large field still has many of the old piggery buildings and there has been some ad hoc grazing. Most of the area is rough grassland and scrub. BD=M

Suggested Actions:

All of the sites listed are in private ownership and it is likely that even a biodiversity survey would be a sensitive issue but this would be an ideal objective. Such a survey would very likely be carried out in advance by a prospective developer who would employ their own ecologist with a view to any mitigating measures.



Sawbridgeworth Parish Biodiversity

Graveyards and Churchyards.

Three sites have been identified and recognised as the areas surrounding religious buildings.

Gr1. Great St Mary's Church. 2.9 acres 1.2 ha.

A greater part of the churchyard is surrounded by a red brick and flint wall which will have its own biodiversity. An interesting range of trees as might be expected including hybrid Poplar, Oak, Silver Birch with papery bark, Yew, Plane, Flowering Cherry, Bird Cherry, Wellingtonia, Large Beech, Lime, several conifers whose identification is open to question including Scots Pine? Western Red Cedar? and a blue conifer. There are a minimum of seven large Horse Chestnuts. The large Yew tree adjacent to the path from the Rectory to the church door is obviously old and is multi-stemmed. The hedge separating the churchyard from the Bowling Green is largely made up of Chinese Honeysuckle. Flowering plants recorded in spring included blue Violets, Cow Parsley, Primrose, Lungwort, Wild Arum and Snowdrops. A significant proportion of the main churchyard looks as if it is regularly mown leaving a relatively wide band of older graves against the properties in Forebury Avenue. There is an interesting flora of lichens on the older gravestones and tombs. The small area adjacent to the main churchyard which at one time was very overgrown appears to be managed as a wildlife area. Stock Doves were recorded and some bat boxes observed. There are a variety of trees including Oak, Weeping Willow, Sycamore, Yew, Lime and several conifers which may be Scots Pine. BD=M/H

Gr. Evangelical church, London Road. 0.51 acres 0.21 ha.

Gr3. Catholic Church, Sayesbury Road. 0.08 ha 0.2 acres. This is a very small area which does not appear to have any burials. Trees recorded include Cedar? Two Yew trees and two large Lime trees on the adjacent pavement. There is a thick hedge separating the mown area from residential gardens. BD=M

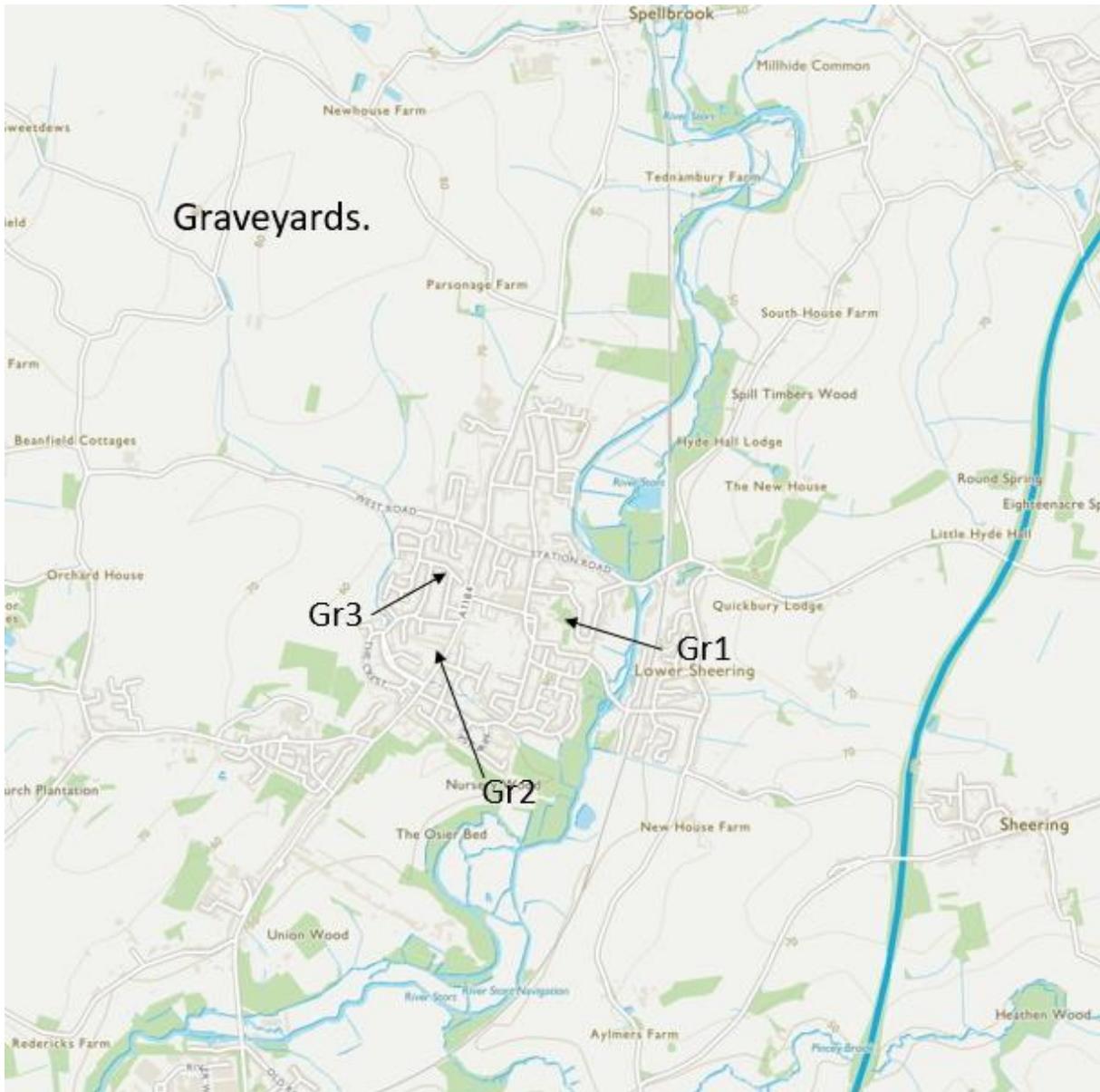
Current Status:

All three areas are subject to different degrees of management and there is an obvious desire to keep these areas neat and tidy. The most encouraging site for biodiversity is the less managed area at Great St Mary's and also the adjacent wildlife area.

Suggestions for action:

Carry out a biodiversity survey particularly at Great St Mary's.

Make recommendation as to how the adjacent wildlife area at Great St Mary's might be managed and improved.



Sawbridgeworth Parish Biodiversity

Urban Lanes.

The term 'lane' has been used in the context where it occurs as a part of the road or track network of the parish. In some cases these refer to surfaces that have been made up and metalled and in other cases to services which remain as rough track ways. In the current context the emphasis is on the biodiversity of these routes.

L1. Brook Lane. 0.2 miles. Leading from the main A1184 road to Gilders. It represents a valuable section of the Sawbridgeworth Brook green corridor having an old hedge on one side and the actual brook on the other. The biodiversity of each of these has been covered in the relevant section. BD=M

L2. Pishiobury Road. 0.14 miles. Leading from the main A1184 at Bonks Hill to the Newton Drive entrance to Pishiobury Park. At one time this was main carriage entrance to the Park from the north. It would have gone out of use with the grading of Bonks Hill to make a cutting reducing the incline for wheeled traffic. It is bounded on the Northside by the remains of a derelict hedge now largely replaced by hard boundaries from the housing development. Previous to this there were examples of Ash trees which had been 'laid' as part of the hedge maintenance. The lane is on average 4m+ width and has been colonised mostly by Sycamore with some Horsechestnut. There is the remains of a shallow boundary ditch on the south side which presumably at one time marked the park boundary. There is also the remains of a vertical tarred and boarded fence which was maintained in the 1920s, primarily to keep the Park private. The Friends have preserved a section of this fence in the Activity Area. The side of the lane has been used for much dumping of hard materials originating in the housing development and these in themselves will have contributed to a the biodiversity which was not intentional! BD=M

L3. Rowney Bois Lane. 0.28 miles. Leading from the High Wych Road at the Sawbridgeworth signboard and leading through to Chaseways farm and Rowney Wood. The north end of the lane has become very much urbanised but at the entrance to Rowney Bois it becomes a winding, narrow, country lane. There are hedges and banks on both sides which are described in the relevant section. Species recorded include Spindle, Small-leaved Elm, Oak, Hazel, Hawthorn, Wild Rose, Dogwood, Field Maple, Elder and several very old Ash which have been coppiced or have been part of a laid hedge. Dogs Mercury is an ancient woodland indicator. BD=M

L4. West Road. 0.07 miles. This is a very short section of lane connecting the road through to the agricultural land beyond. It follows part of the course of the Sawbridgeworth Brook which divides into two branches at this point. On the east side there are old Field maple and Hazel trees with a substantial covering of Wild Hop. On the west side is the main course of the brook with blackthorn and bramble thickets and the occasional Sallow tree. BD=M

L5. Three Mile Pond. 0.26 miles. This is a very short length of lane which I believe was once the access route used by Thomas Rivers to gather materials from the wood over the railway for use on the nursery. The main feature are a number of older Small-leaved Elms. At the end of the lane it becomes a field hedge described in the relevant section.

L6. Northfield House. A short length of lane adjacent to the House. Hybrid Poplars, large Beech and Walnut in the grounds or on boundary.

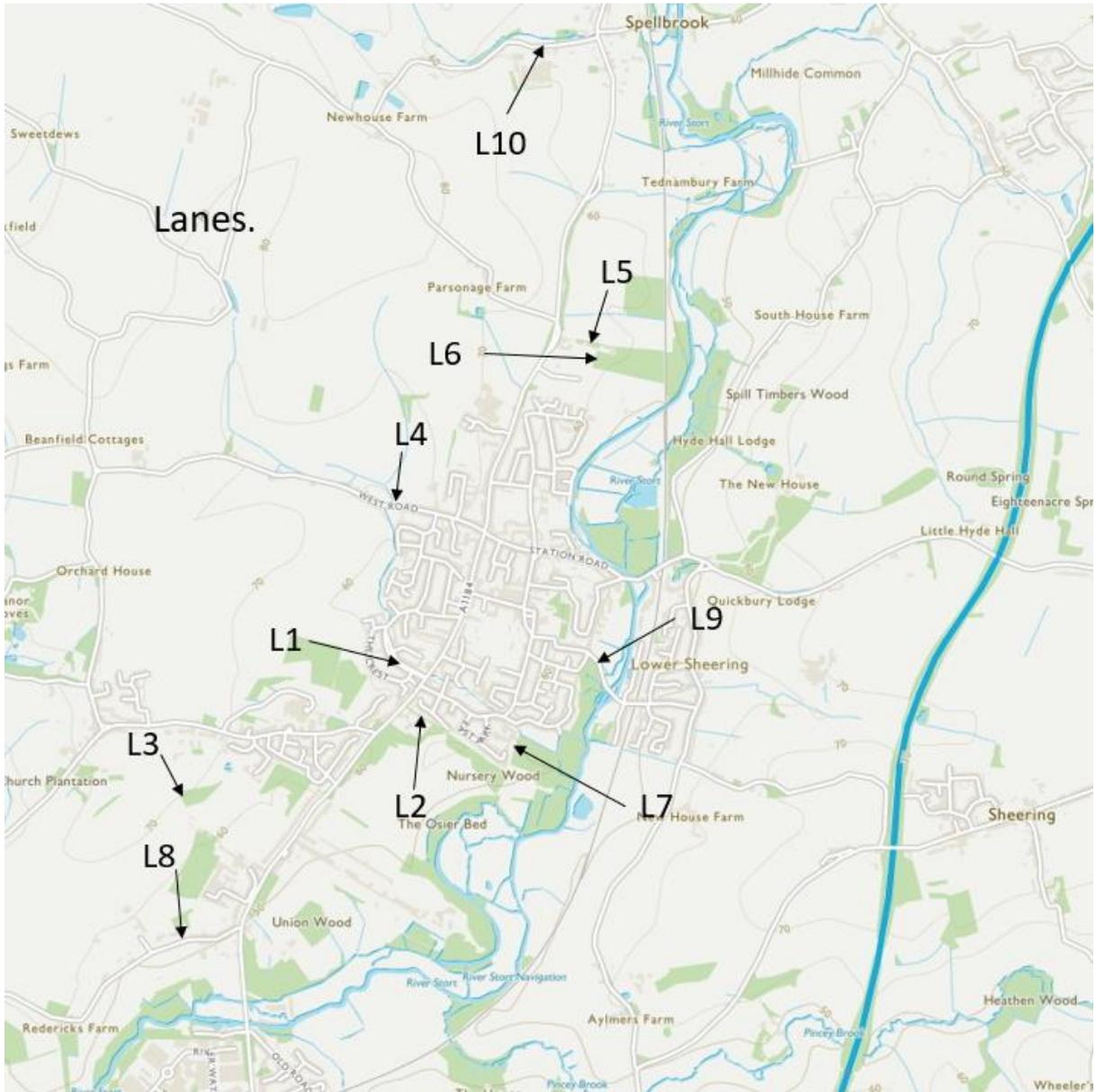
L7. Springhall Lane (known locally as Duttons Lane after the owner of a model farm who lived at Springhall in Vantorts Road and who farmed the adjacent area). 0.26 miles. This is one of the

original access routes to Pishiobury Park and the adjacent meadows and fields. It was essentially an agricultural access route as opposed to an estate feature. The hedges are described in the relevant section and had an interesting development history linked in with Rivers Nursery. At the present time the western side is being progressively encroached by Kings Mead with accompanying modification of the boundary which was once a hedge and a limited amount of garden rubbish. At the bottom end of the lane it becomes a 'holloway' doubtless due to the hooves and wheels of countless cattle and carts over the years. There is evidence that the surface of the lane has been gravelled but this could also be related to the underlying geology. BD=M/H

L8. Redricks Lane. 0.8 miles. This is now more of a cut through road than a lane and is heavily used by traffic. Much modification of the roadside boundaries but remaining hedges are Field Maple and Small-leaved Elm. There are hybrid Poplars in the vicinity of Redericks Farm. BD=L

L9. Sheering Mill Lane. 0.31 miles. Most of this lane is bounded by housing but the bottom end where it passes on to the flood plain becomes much more interesting for biodiversity. On the southern side is a quite large bed of Common Reed with some large Willows. This area was once a piggery and the remains of the corrugated iron sheds can still be seen. There is a freshwater spring at the bottom end of the Fairway on Vantorts Estate which is described in the relevant section. On the north side of the lane there is a large area of wet meadow on the flood plain. Both sides of the road work grazed by bullocks in recent memory but both have now become overgrown both with Reed and Willow Herb. There is evidence of the same spring line on the north side. Both areas have considerable and uninvestigated biodiversity potential. BD=H

L10. Spellbrook Lane west. 0.47 miles. A variety of roadside trees and shrubs including those associated with gardens. Yew, Field Maple, Hazel, Horse Chestnut, Elder, Silver Birch and hybrid Alder in the grounds of the lawnmower factory. Roadside shrubs include Blackthorn, Cherry Plum, Wild Rose, Sycamore and Lime. An old and progressively overgrown narrow meadow adjacent to the deeply incised channels of the Spellbrook at its western end could be good for biodiversity. BD=M. Spellbrook Lane East. 0.18 miles. A short length of lane leading to the parish boundary just on the other side of the railway. Crack willows and an interesting area of old orchard adjacent to the junction with the A1184. BD=M/H?



Sawbridgeworth Parish Biodiversity

Marshes and wetlands.

What is a Marsh? There are many arguments over whether an area is a marsh, fen or bog. In this context we are taking an area which is damp or wet underfoot all year but not necessarily flooded all the time.

M1. Sawbridgeworth Marsh Nature Reserve. 3.19 ha 7.88 acres. This is an Essex Wildlife Trust reserve rather incongruously in Herts! The area was made a reserve in the early 1970s on the basis of a countywide survey carried out by Dr John Dony who referred to the Marsh as "one of the best marshes in Herts". The reserve was designated specifically on the basis of the flora which contains a lot of rare and unusual species. It is home to a reintroduced Water Vole population and is periodically frequented by the Otter. There is at least one Red Data Book species which is *Vertigo moulinsiana*- Desmoulin's Whorl Snail. The bird population tends to be largely seasonal with Snipe feeding and resting during the winter months and Reed, Sedge and Cetti's Warblers breeding during the summer. In the past the area has been a stronghold for the Cuckoo. BD=H.

M2. Plovers Mead. 0.97 ha 2.4 acres. This area was added to Pishiobury Park in the 1980s. It is a wet meadow, maintained by the flushes along the northern perimeter. It is grazed by Longhorn cattle. An initial survey of the flora was carried out at the time of purchase and needs to be repeated. One interesting species recorded was Ragged Robin and there will certainly be other typical marshland plants and invertebrates present. BD=H.

M3. Petty Pools. 2.13 ha 5.25 acres. This area has been described in some detail in the section on 'Springs'. The 'pools' wording refers to several deep areas colonised by Reed Mace and there are some boggy areas with hard rush and sedges. BD=H

M4. Borrowdykes alongside the railway at Sawbridgeworth Station. 5.89 acres 2.39 ha and 3.79 acres 1.53 ha. These long wet marshland strips run alongside the railway and may have been created when the route of the well away lines crossed the floodplain. They are colonised by Sallow and Willow and there is Common Reed. They are something of a sanctuary for birdlife as they are inaccessible. BD=H

M5. Mill Fens. 15.84 ha 39.14 acres. This large area of mixed marshland and wet grass and scrubland runs from north of Kecksy's Bridge down to County Bridge in Station Road. The area is a network of old 'meads' which would have almost certainly been cut for hay and then grazed by cattle. Many of the compartments there the name of neighbouring farms which presumably had rights to the hay and graze afterwards. The Northern compartments are named as Mill Fen Common going back to the days when people would have had rights of common probably to graze cattle. Up until fairly recently there was a gate on the tow path which marked the boundary of the Common. The area is

designated for flood relief at times of heavy rain and the towing path has been lowered downstream of Kecksys' Bridge specifically to allow water out onto the floodplain and avoid flooding and overwhelming of the Burtons Mill area. The area has had various management regimes in the past and there has been some dumping of dredging materials when the backwater was dredged out and the channel deepened in the early 1960s. This has resulted in phosphate enrichment of parts of the area stimulating a rich growth of Stinging Nettles and Willow Herb. There appears to have been some attempt at 'carbon offsetting' as some trees such as Horse Chestnut and Hornbeam can be found planted in a totally inappropriate setting on the floodplain. In the past there has been some speculation with regard to residential development but the idea was strongly rejected by the Environment Agency. It would make an ideal Local Nature Reserve area. BD=M/H

M6. Sheering Mill Lane. 2.64 ha 6.53 acres in two halves on either side of the road. Some description of this area has already taken place in the sections on 'Springs' and 'Lanes'. The whole area has high biodiversity potential and a proper survey is needed.

M7. Hallingbury Mill Marsh. 16.2 acres 6.5 ha.

This large wetland area is a County Wildlife Site. It was grazed for many years by cattle from Tednambury Farm. The area is floodplain and prone to flooding at times of heavy rain. It is crossed by several ditches which are now largely silted up and overgrown. The grassland has been 'improved' along with the rest of the farm and this has significantly reduced the wetland flora diversity. BD=M.

Current Status:

Nearly all these marshy areas are being subjected to different management regimes or no management at all. They represent good areas of carbon sequestration as well as having potential high biodiversity.

Suggested Actions:

Carry out a proper and detailed survey of those areas which are easily accessible.

Look into the possibility of developing the Mill Fens area as a Local Nature Reserve.

Sawbridgeworth Parish Biodiversity

Disused mineral extraction sites.

Mineral extraction sites.

In this context we are considering sites which in the past have been used to extract minerals such as gravel and sand, mostly for use in building. There is also a possibility locally that 'brick earth' was dug on an 'ad hoc' basis when a temporary brick kiln was set up, probably to provide bricks for a building to be constructed nearby. In the old days there would not have been the means to transport the quantity and number of bricks required to make a building of any size any distance.

P1. Pishiobury Park. Main Park pit. This is a shallow pit dug into a deposit known as 'Head'. This type of coarse and mixed gravel deposit is thought to have originated at the end of the Ice Age when there would have been huge volumes of melt water in our area as the glaciers retreated. Centuries and possibly thousands of years of freezing and thawing resulted in partial reworking and transport of this type of deposit. A work face can be seen in several places on the western side and it looks very much as if the rough gravel was extracted by the cartload. The exit point from the pit is on the east side. Also on the east side and downhill can be seen lots of small mounds which are almost certainly wheelbarrow loads of topsoil which were removed to expose the gravel underneath. The flora is typical of a dry environment and includes Storksbill and Birds Foot Trefoil.

BD=M/H

P2. Gravel Pit at the east end of Springhall Field. The material dug from this pit is part of the lower level River terraces which would have been formed at the end of the Ice Age as the River reasserted its old course and gradually eroded and cut its way down through sands and gravels to gradually form a meandering course. This pit has been used as a domestic rubbish dump for Sawbridgeworth in more recent times. It has been suggested that the gravel may either have been used on the Park or may have been extracted and transported to waiting horse-drawn barges pulled up along the canal. It is understood that the small wood called the 'Spinney' was at one time owned or leased by Innes Gravel Company. At the present time the pit has been colonised by Hawthorn bushes which have now turned into trees. There is also a large Crab Apple tree and a good example of a Spindle bush. It has long been known as a site for fox earths. It is also a winter roost site for winter bird visitors such as Redwings and Fieldfares. BD=M/H

P3. Rowney Gardens Sand Pit. This is a substantial pit excavated at the north end of this large field. The deposit is a glacial chalky sand. This deposit is of some interest because it is first of all found at the north end of the parish at Fox Earth Wood, then at Leventhorpe School, and old sandpit on the site of what is now White Post Field and on the Rivers Nursery site, it is also found in Union Wood. The field adjacent to the sandpit was

originally arable but has since fallen into disuse and become colonised mostly by Blackthorn. The site is fenced and private. BD=M

P4. The Hermitage. This pit found between the railway and the canal is only really marginally in our parish but is included for interest. As with P3 it has been dug into a chalky sand and has been locally referred to as the 'bomb pit' but the working of the pit can clearly be seen as having nothing to do with explosives. In the late 1940s and early 1950s the pit was home to a hermit who lived there for a number of years in a small hut dug into the wall of the pit. BD=M/L

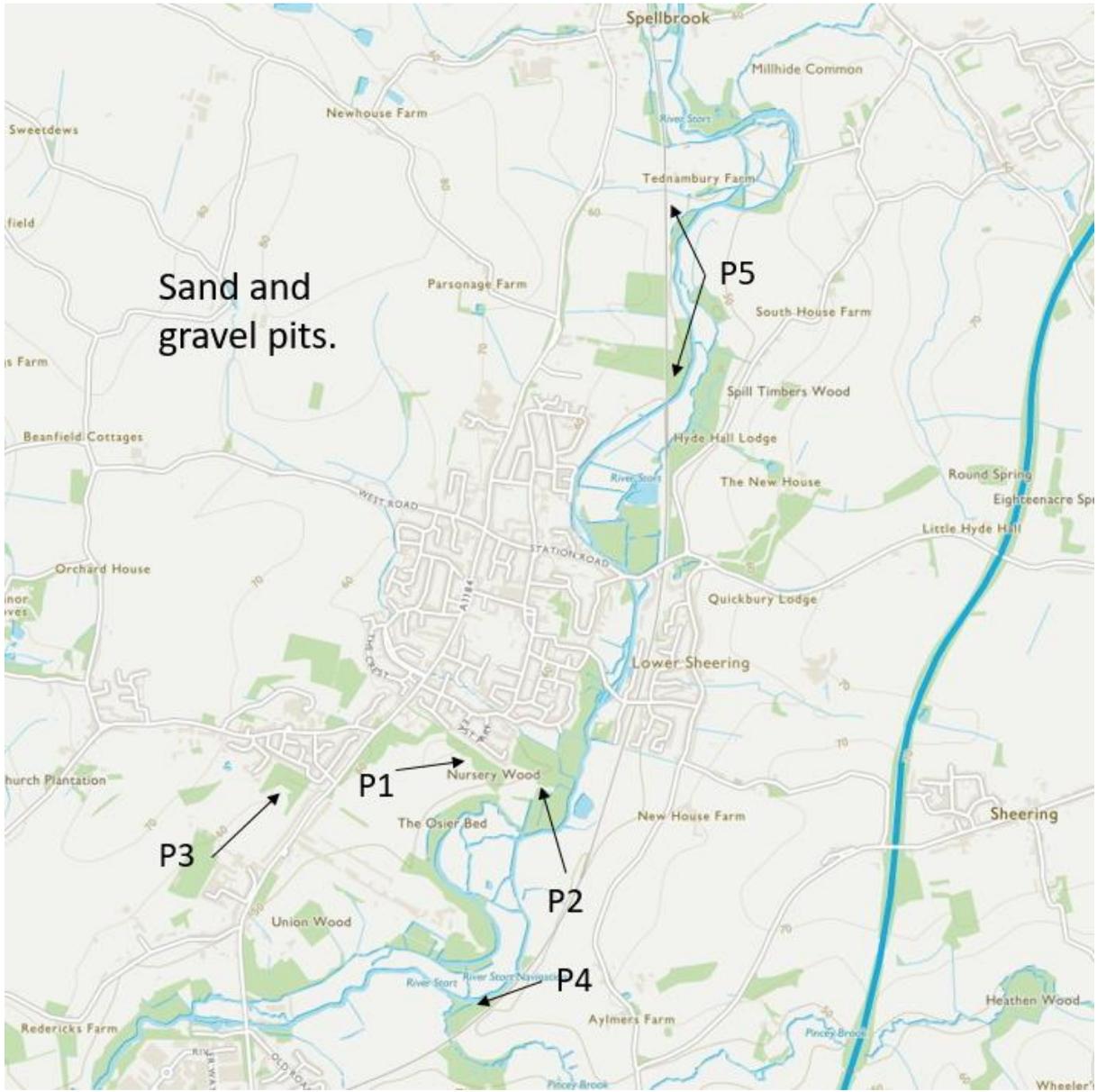
P5. This reference is to scattered small gravel pits alongside the London to Cambridge railway line. They are found mostly in the Tednambury Farm area and were very likely dug to provide ballast when the railway was constructed. Similarly, it is not uncommon to find the name 'Gravel Pit Field' on the Tithe Map indicating a small-scale and probably temporary extraction of material almost certainly for making up road surfaces in the days before tarmacadam.

Current status:

All of the pits described are in a disused condition and have undergone succession and been colonised by various types of vegetation. As such, they are all providing a different range of habitats for wildlife and so should be valued for biodiversity.

Suggested actions:

These disused pits are favourite sites for motorcycle scrambling and mountain bike riding. Whilst these activities do no great harm in their own way they do represent significant disturbance to the habitat and in some cases large volumes of soil have been moved to create 'jumps' particularly for mountain biking. They can also be a focus for antisocial activity and therefore it is suggested that each of these areas be carefully monitored where they are accessible.



Sawbridgeworth Parish Biodiversity

Urban Walls.

In this context I am referring to brick structures usually as boundaries to properties or on the sides of roads. The brick types are typically soft red brick, cinder brick and Cambridge White brick. For preference the mortar is lime mortar as opposed to Portland Cement mortar. Old walls are considered important for biodiversity because they provide a very useful habitat for lichens, mosses and possibly even ferns. Plants such as Ivy-leaved Toad flax and Yellow Corydalis are essentially plants of the Mediterranean and are quite at home in the demanding situation of a drywall. Holes and voids in the wall are valuable habitat for small invertebrates particularly spiders.

WL1. On the south side of Fair Green. 21 m of old redbrick wall.

WL2. The entrance to Brook Lane. 60 m of red brick wall separating the old Lane from the modern road at Burnside.

WL3. Car Park. 19 m of cinder brick wall with an interesting cindery capping. Especially good for mosses.

WL9.. Vantorts Road as part of the road wall at Spring Hall House. 37 m of red brick wall.

WL5. Brook Road. 20m+ of cinder brick wall going south up Bonks Hill.

WL6. Sheering Mill Lane. 70 m of redbrick wall on both sides of the lane before the double bends.

WL7. Parish Hall area. 20 m of old wall with mixed content. Seablite established at the top of the wall.

WL8. Great St Mary's churchyard. 186m of redbrick and flint wall.

WL4. North side of the entrance to Springhall Road. 37 m of cinder brick wall with interesting timber post insets.

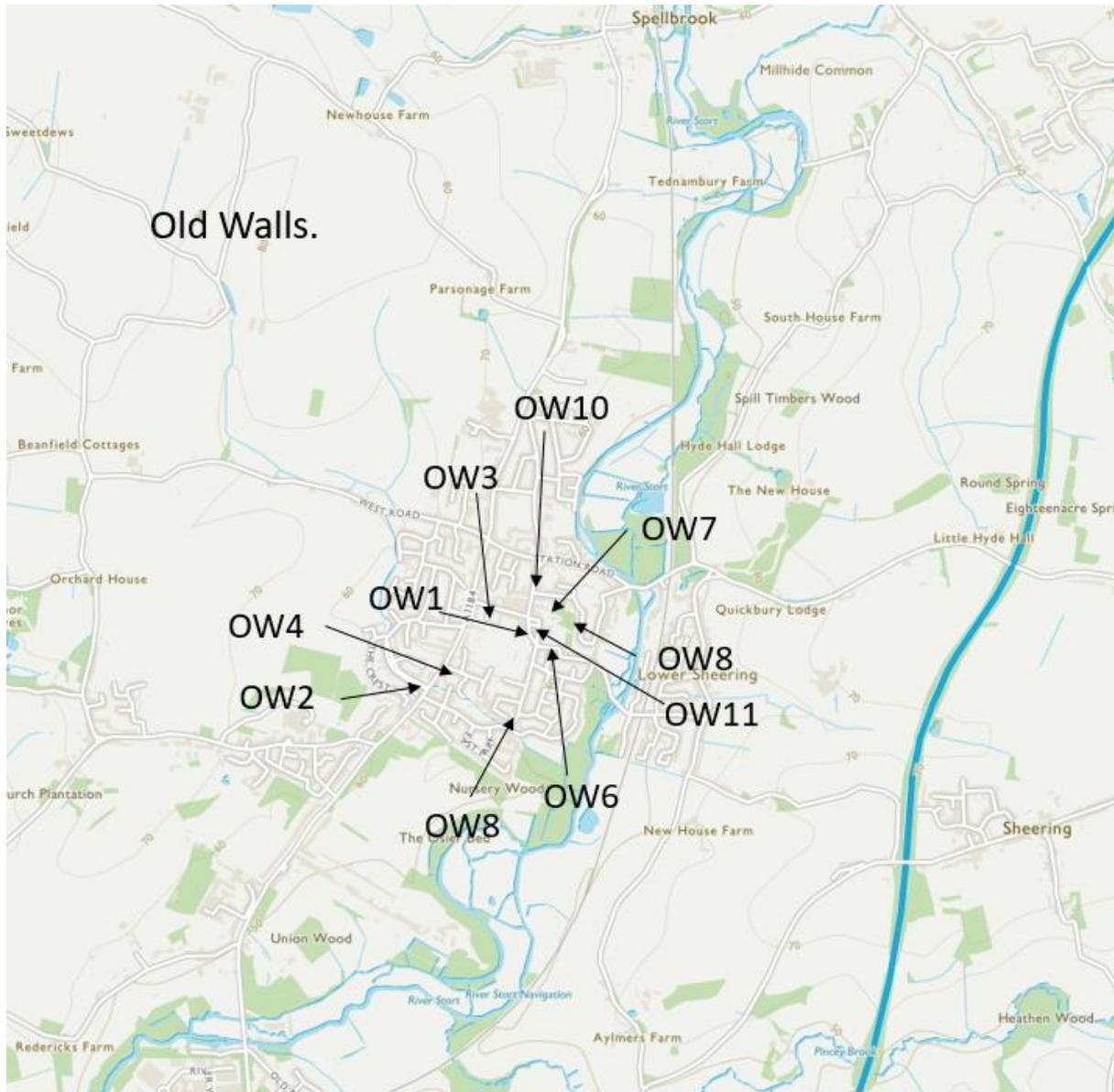
WL10. Knight St. 20 m of Cambridge White Brick. Ivy- leaved Toad flax established.

WL11. 128m of mixed wall being redbrick and Cambridge White Brick around the perimeter of the properties on the Fair Green. Adjacent is the redbrick wall of the Alms Cottages and the Church House.

Suggested actions.

- Recognise the value of old walls as important habitat for biodiversity.
- Encourage repair of old walls with lime mortar and materials in character. Avoid Portland Cement mortar.

- Encourage owners or contractors not to remove any plants and vegetation which should be growing on the wall.



Sawbridgeworth Parish Biodiversity

Orchards.

In this context, orchards are recognised as fruit trees which have been deliberately planted to produce a crop of fruit.

O1. Rivers Orchard. 2.32 ha 5.74 acres. A nationally recognised and very important Orchard site as a remnant of the original Thomas Rivers Nursery business. The orchard contains a wide variety of different types of fruit trees and is currently managed by a team of volunteers. The groundfloor of the orchard is largely represented by semi or unimproved grassland with a splendid show of Cowslips in season. Further work is needed to identify important invertebrates which doubtless are present on the veteran fruit trees. BD=H

O2. Hyde Hall. 0.83 ha 2.06 acres. This is a privately owned orchard which was presumably planted originally to supply fruit for the occupants of the House. The orchard is very well maintained and very neatly set out. The site is private but it looks as if the grassland is regularly mown and maintained. BDM?

O3. Redericks Farm Orchard. 0.43 acres 0.18 ha this is a very small largely derelict orchard opposite the farm and in amongst old farm buildings. The site is in private ownership. BD=?

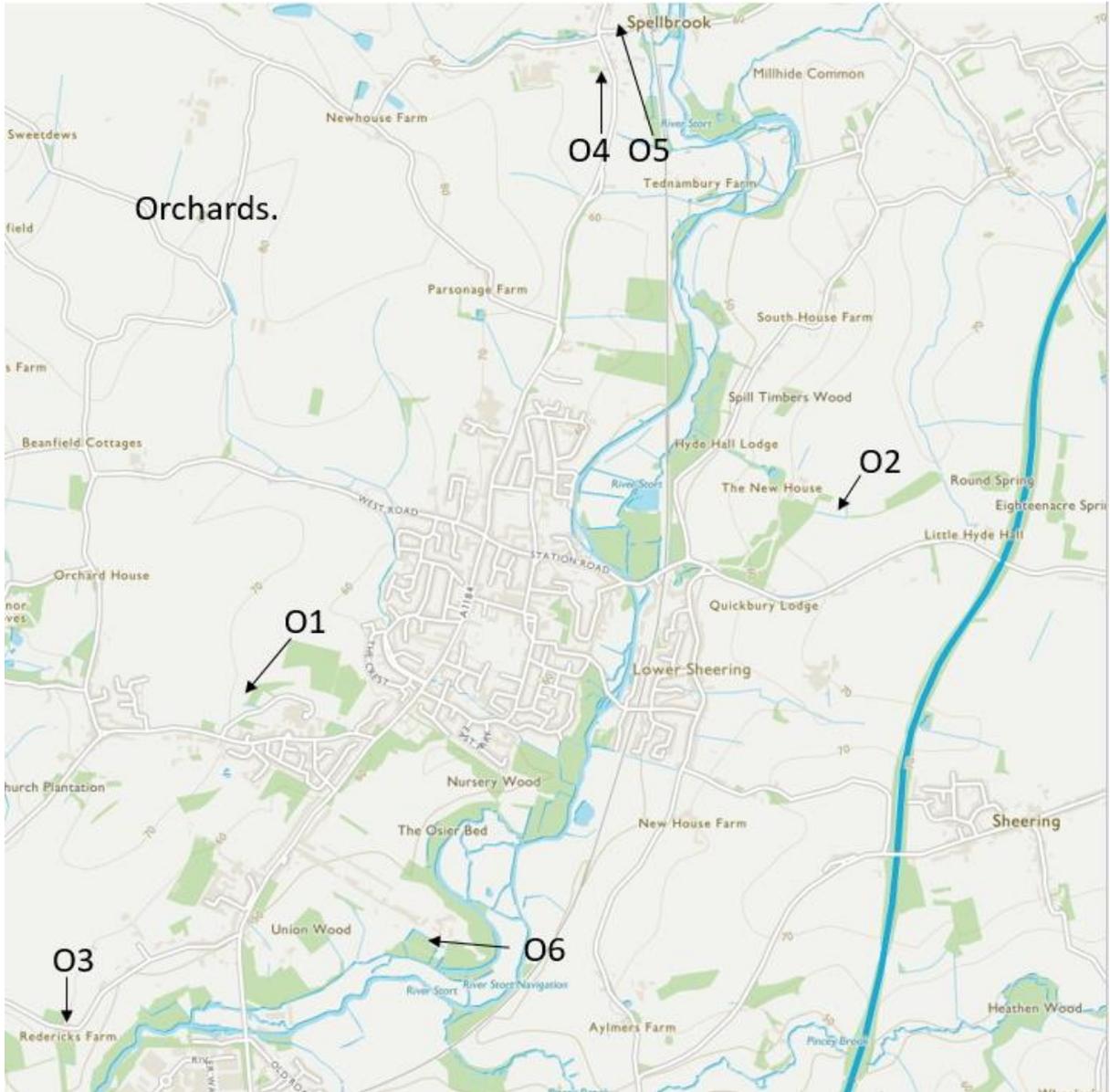
O4 and O5. O4 is at the top of the hill in Spellbrook and is in a private garden. It is understood that it is an old Orchard of significant importance and needs further investigation. BD=H? O5 is just on the north side of Spellbrook Lane East and appears to be a small remnant of what may well have been a tiny smallholding as some buildings still remain along with the occasional old fruit tree. BD=M?

O6. Pishiobury. 1.02 acres 0.41 ha. Little is known of this Orchard other than recollections from the 1950s. It is a linear Orchard on the south side of the Moat which forms the southern boundary of the old kitchen garden and included Hazel nut shrubs. The site is private. BD=H?

Suggested actions:

Carry out a biodiversity Rivers Nursery Orchard with special emphasis on invertebrates.

If possible, seek to obtain access to investigate the other orchards in private ownership and place them properly on record.



Sawbridgeworth Parish Biodiversity

Urban Green Public Spaces.

Public green spaces are those generally freely available to the general public for exercise and relaxation. Exceptions include the football fields. Most are managed by the local authority and are regularly mown and maintained during the summer season. The result is that biodiversity is generally low, especially with regard to the flora which is restricted to Lawn Daisies, Broad leaved Plantain, Yarrow and Dandelions. Some exceptions are found on the margins of these areas which will be the subject of a separate survey. The main exception is Pishiobury Park which is 70 acres 30 ha of semi-and unimproved grassland which is managed by cattle grazing.

GS1. Vantorts Open Space. 2.2 acres 0.92 ha Grassland as above but with a scattering of trees of a variety of species but often cultivated varieties. There is variation in the flora on the side of the access road in from Vantorts Road and also an additional margin as a buffer against the properties on the north side. The area does provide foraging for a variety of birds such as Rooks, Carrion Crows, Wood Pigeons and Jackdaws as well as Blackbirds and Song Thrushes .BD=L

GS2. Rivers Nursery Area. 43 acres 17.5 ha. A network of green space incorporating the Orchard, wildflower meadow, scrubby woodland, football and play area, rough grassland. BD=M/H.

GS3. The Bowling Green. 0.3 ha 0.86 acres. This green play area has been in existence for almost 2 centuries and is listed on the 1839 Tithe Map. There are interesting margins where the area adjoins the churchyard and churchyard extension. There has been some recent planting of trees on the southern side adjacent to Sheering Mill Lane. BD=L

GS4. Bullfields Play Area incorporating the football field. 4.2 acres 1.7 ha. BD=L

GS5. Fair Green. 0.17 ha 0.42 acres. Grassland as already described with the particular in additional feature of the two veteran 'shredded' Lime trees on the road outside Fair Green House. BD=L

GS6. Pishiobury Park. 70 acres 30 ha. Listed as a County Wildlife Site on account of the semi and unimproved grassland. Several other features are described elsewhere including the woodlands, old River Stort, Osier Bed and marshy grassland. BD=H.

GS7. West Road Play Area. Grassland as already described. The area has been planted up with a variety of trees including Oak and Ash. It is adjacent to the upper reach of the Sawbridgeworth Brook where there is Willow and Elm. BD=L/M

GS8. Station Road at the junction with Bullfields. 0.32 acres 0.13 ha. A small triangle of grassland planted up with trees. There is an interesting margin of higher biodiversity on the west side by the pedestrian entry point to Leat Close. BD=M

GS9. Cricket Field. 1.9 ha 4.9 acres. As a sports field incorporating both cricket, tennis and bowls this area is heavily maintained. The biodiversity interest lies in the row of large Horse Chestnuts along the eastern side, mature trees along the boundary with the gardens to The Manse and the line of trees and old hedge by the tennis courts which include Ash, Sycamore, Oak and large Beech. BD=L/M

GS10. Football Field. Crofters. 5.03 acres Intensively managed the sport but an interesting hedge line particularly along the western side as described elsewhere. BD=L

GS11. The Old Fair Green. 0.12 ha 0.29 acres. A small green triangle with the River on one side and Station Road on the other side. It is the historical site of the Wharf. Trees include Weeping Willow, Cherry, Sycamore and Cherry Plum. BD=L.

GS12. The Forebury. 0.62ac 0.25ha. A small grassy area within development. Bounded by line of Ash trees. BD=L.

Suggestions for action:-

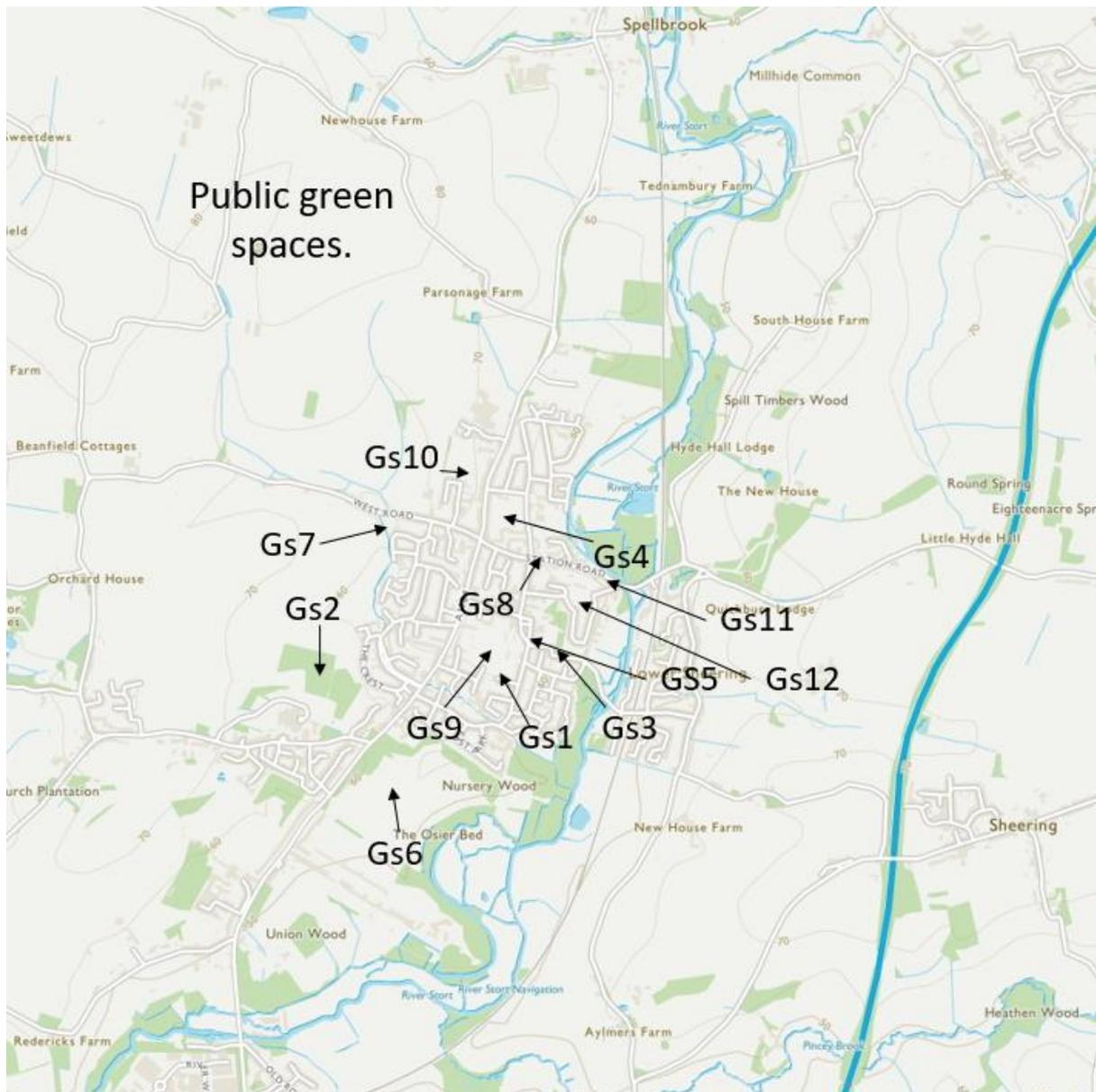
- Carry out more detailed survey especially of the margins of the green spaces.
- Make recommendations to reduce the regularity of grass mowing along some of the margins to increase biodiversity.

Public green spaces Action Plan
<p>Current status.</p> <p>There are currently 10 green spaces in Sawbridgeworth of which the cricket field and football fields are sports fields. Four have children’s play areas and apparatus. Pishiobury Park he’s a local country park. The small area(0.32acres) at the entrance to Bullfields is a public green space planted up with young trees.</p>
<p>Current factors affecting the Habitat.</p> <ul style="list-style-type: none"> •Regular mowing. •Some the use of herbicides. •Trampling and foot fall impact in play areas.
<p>Current Action</p>

All areas are regularly managed throughout the summer months by grass mowing which has the effect of keeping the area with a well-kept appearance but results in biodiversity limited to those plant species which can survive a mowing and trampling regime.

Proposed Actions

Make a suggestion that some parts of the green spaces which are not actively used as play area be left uncut and allowed to grow up. This need not look untidy because it may not be just a matter of leaving a block of uncut grass but giving it a sculptured outline with access paths. Biodiversity monitoring should be planned to take place during the summer months. A conservation cut should be carried out in September and the arisings piled up into a compost area.



Sawbridgeworth Parish Biodiversity

Freshwater springs and flushes.

General situation. In this context, springs have been recognised as an active flow of water emanating from the ground. A flush is more of an area of freshwater seepage. In our parish there are a selection of both of these types of freshwater occurrence. It is never very easy to understand exactly the reason why freshwater should come to the surface at any one given point. Underlying our whole area is the Chalk which acts as a water store known as an aquifer. In some places this aquifer comes near to the surface or the water table within the aquifer reaches a point where it overflows. At some point there has to be an impervious geological formation such as a clay which will prevent the water from escaping. In our area this could be the top of the London Clay or it could be the clay deposits of the Woolwich and Reading Beds (Lambeth Series) as have been shown in borings on the site of the old Scout Hut on what is now Wallen Park. In the floor of the Stort Valley there is known to be a deep sunken channel which was proved by borings taken in the 1970s. This channel is filled with chalk silts and has a direct connection with the underlying chalk. It is almost certain that in many cases the source of the freshwater springs lies with this sunken channel. In other cases it is highly probable that water is flowing out of the gravel aquifer. After the Ice Age considerable areas of sand and gravel were deposited in our home area and this can act as a store of water in its own right. Gravel aquifers tend to be less dependent than the Chalk aquifers. A particular characteristic of the springs and flushes in our area is their constant water temperature and this is a good indication that they are originating at some depth within the underlying geology. From the point of view of biodiversity, springs can have a very specialised fauna and flora which have very likely been in existence for many many centuries.

Sp1 Sawbridgeworth Marsh. This is a powerful spring which runs continually throughout the year at a steady temperature of 9°C. On the Marsh Nature Reserve there is a long spring line and the water comes to the surface either as seepage is or as a powerful flow in one or two places. There is a small deposition of calcareous tufa and this suggests the origin of the water either from the Chalk or from the Chalky Boulder Clay.

Sp2. Spring arising at the foot of the Fairway on Vantorts Estate. This spring appears at the foot of the steep slope where it meets the floodplain. There is a natural flow which is augmented by the fact that the surface water drains from the estate have been directed to discharge at this same point. The effect of the spring is to make a wet and boggy meadow and it is the reason why there is a bed of Common Reed at this point There are also several Willow trees and some standing water. An attempt in the past has been made to direct the flow of this spring and there is a ditch leading from the spring across the wet meadow towards the Lock Keepers Cottage where it discharges into the backwater.

Sp3. This spring rises in the grounds of Springhall House. It would appear that development within the garden has taken place over the top of the actual spring which is a puzzle. The spring flow originally collected in a small lake in the garden and the overflow enters the Sawbridgeworth Brook on the downstream side of East Drive where it meets South Brook and Vantorts Road.

Sp4 Hyde Hall. This spring is conjectural because it is not possible to see its actual origin but the fact that there is an ornamental lake whose level does not alter and a wet boggy flush area indicates that there is a spring rising at this point at quite a high level.

Sp5. This is a very small spring or flush along the river downstream from Feakes Lock. Some years ago the farmer created a concrete basin on the bank of the river to enable the cattle to drink from this spring which arose in the bank. The basin was filled with Watercress. With the demise of the dairy herd at New House Farm the basin was filled in but water can be heard running into the canal at this point.

Sp6. Pishiobury Park. This small spring is one of a complex of springs and wells found in this area and in the gardens of the houses in Pishiobury Drive. The flow is not strong but it is constant and very likely has its origins in the gravel aquifer. Historically, there was a brick basin constructed here, almost certainly for the cattle to drink before the days of mains water.

Sp7. Sawbridgeworth Station. This powerful spring arises on the railways side of the junction of Hallingbury Road and the Hatfield Heath Road. There is a pipe which comes out of the bank, now covered in brambles but the flow was considered to be sufficiently strong and pure enough for it to be a locally known place where one could take a drink or fill up a water bottle.

Sp8. 3 acre Mead. Pishiobury Park. This is little more than a flush at the bottom of the slope where it meets the floodplain. It is however sufficient to maintain a wet area on Plovers Mead and a ditch has been dug at some point to channel the water into the backwater by the Osier Bed. It is not beyond the bounds of possibility that a freshwater flush or spring in this position could have some kind of historic or religious significance as it is in close proximity to the known side of the Neolithic causewayed Enclosure. I believe that it is this same spring or flush line which is also found at the end of the boardwalk leading from Springhall Meadow at the point where it passes out onto the floodplain.

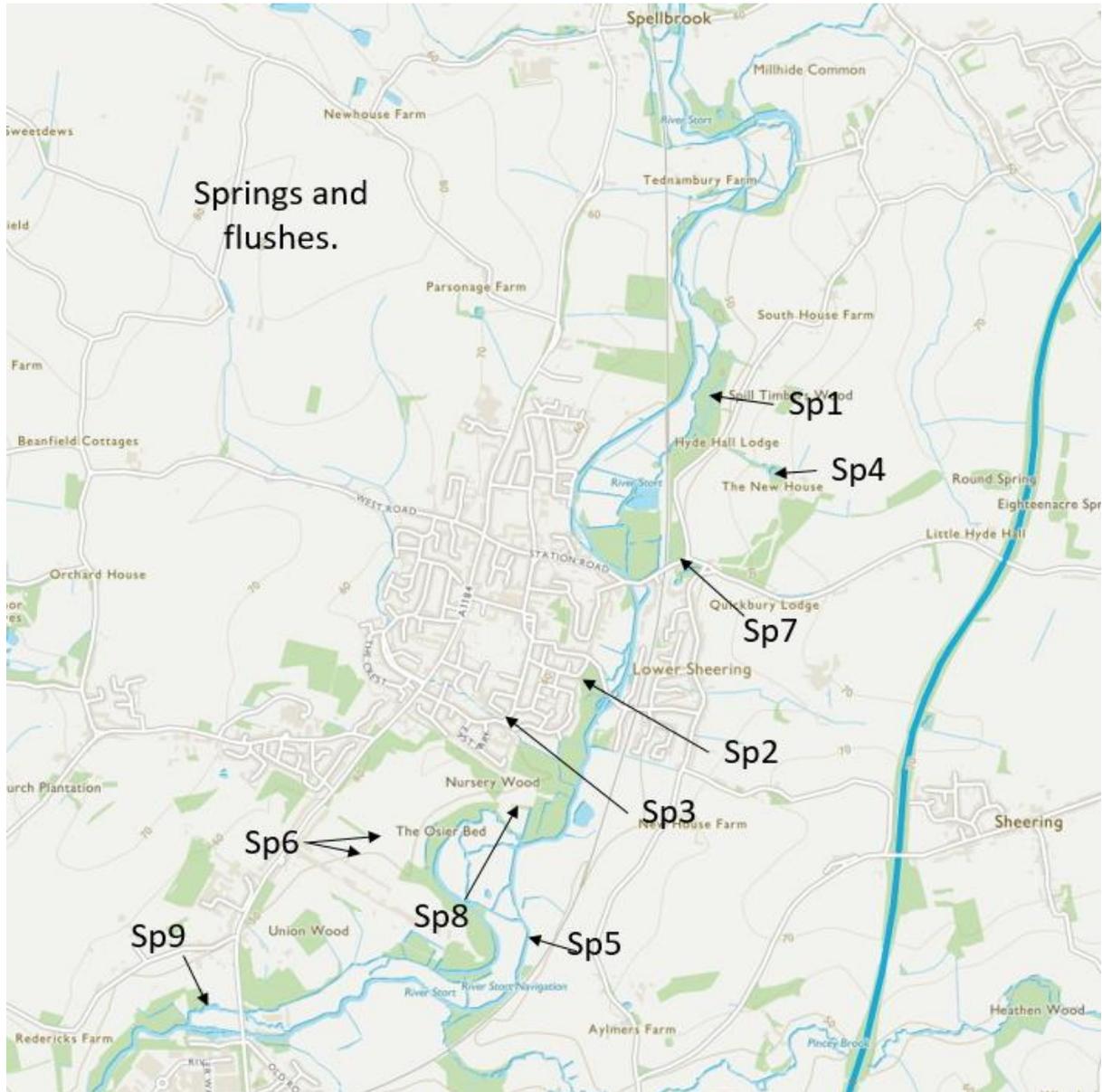
Sp 9. Petty Pools ditch and spring area. The name almost certainly comes from the French 'petit' and describes a rather indeterminate area where there is obviously water coming to the surface at some point more in terms of a flush rather than a spring. There is movement of water eastwards in the ditch towards the Harlow Mill back water loop near to the point where it joins the canal. There is also a ditch input from the direction of Redricks Lane and then the proper Petty Pool area to the west towards the canal. In both

the areas there is Common Reed and Reed Mace suggesting a permanent and substantial depth of water. A wet/water filled ditch with Watercress runs along the bottom of the arable land towards Redericks Farm. There is Hawthorn, Sallow and Willow scrub. There is some evidence of dumping of soil and man-made materials at some time in the distant past. The ditch which flows towards the canal looks to be potentially good for biodiversity. BD=M/H.

Suggested actions.

Publicise and monitor the continuity, health and flow of these springs as they are a good indicator of the water situation in the chalk and gravel aquifers from which we not only derive our drinking water supply locally but also as an important contributor to the flow and health of the river.

Survey and record the fauna and flora of each spring and flush.



Sawbridgeworth Parish Biodiversity

School Wildlife Areas.

At one time all schools were being encouraged to have a Wildlife Area. The success of such an area is likely to be down not only to the member of staff responsible but also to the involvement of students. The problem with this type of wildlife area is that staff tend to move posts and children move on to the system. These areas can also be subject to 'tidying up' particularly by local authority contractors.

Sc1. Leventhorpe. Historically this school had a wildlife area at the bottom of the games field. It was an L-shaped area which was planted up with a variety of native trees including those such as Common Buckthorn to provide food plants for the caterpillars of butterflies. The adjacent hedge was also managed and monitored as one of the original hedges that would have been here before the school. Access of course is now not possible but historically BD=H

Sc2. Reedings. This junior school had a small wildlife area adjacent to the entrance to the school but it has been observed that this area has recently been cleared and therefore presumably is no longer in existence.

Sc3. Mandeville. Access to this site was not possible but it was noted that there is a boundary hedge with a significant mix of shrub species.

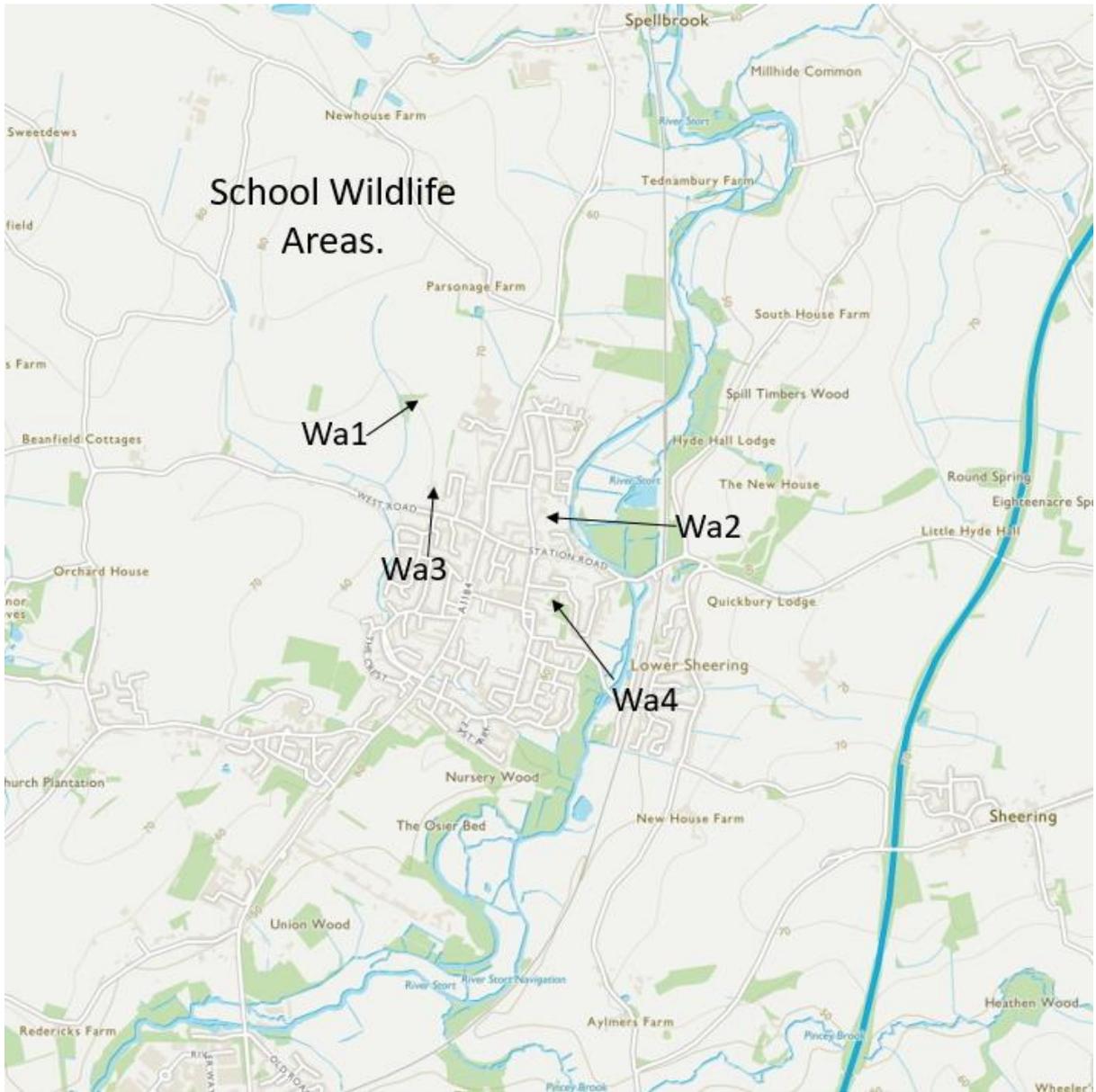
Sc4. Fawbert and Barnard. 0.42 acres 0.17 ha. This school is fortunate in as much as it has possession of a triangle of land adjacent to the school grounds and the churchyard of Great St Mary's. The site was allotments during WW2 but has since reverted to woodland. In recent years it has been used for 'Forest School'. It is steadily reverting to secondary woodland of which Sycamore is largely dominant. BD=M/H

Current status:

With the exception of Fawbert and Barnard the Wildlife Area provision for schools in the parish looks to be disappointing. Such areas do provide a valuable resource for students to learn about wildlife and biodiversity.

Suggestions for action:

- Initiate contact with local schools to ascertain the Wildlife Area provision.
- Liaise particularly with Fawbert and Barnard to explore the best use for their Wildlife Area including some survey work.



Appendix 1.

Species Lists.

Sawbridgeworth Parish Biodiversity	
List of trees with notes and assessment of abundance.	
<p>During the course of the biodiversity survey notes were made of the occurrence of different species of trees and also an assessment of their relative abundance using the ACFOR scale.</p> <p>A= Abundant C= Common F= Frequent O= Occasional R= Rare</p> <p>Lime. C. This tree is found throughout the parish but is particularly common around the town. In some places it has been 'shredded' meaning that the side branches are taken off regularly, in other places the side branches have been trained horizontally. Some specimen examples occur in Pishiobury Park in Lime Walk.</p> <p>Ash. C. As with Lime this is one of the commonest trees in the parish and is found throughout the town and surrounding countryside. The unfortunate position at present is that many specimens are suffering from Ash Dieback disease and it is expected that there will be a significant impact on the population of this tree in years to come.</p> <p>Walnut. O. Most Walnuts were recorded growing in gardens particularly those well-established. There was a veteran Walnut in Vantorts Road which has recently had to be drastically reduced in size for safety reasons but still appears to be alive. It gives its name to Walnutree Corner where there is still an example.</p>	

Hybrid Poplar. F. These trees are to be found typically in damper situations and some very large examples exist growing on the floodplain. They form a significant part of the tree population in the Osier Bed in Pishiobury Park.

Black Poplar. O. This is a difficult tree species to determine. There are some known young plantings alongside the old River Stort at Plovers Mead. Nearby is what is reckoned to be a very large and old Black Poplar but it needs verification.

Lombardy Poplar. O. These tall trees are found scattered through the parish notably being by the Rivers Hospital and in Pishiobury Park also forming what was almost certainly an entrance to the park land, now turned into arable at Great Hyde Hall.

Balsam Poplar. R. At one time a significant population of this fragrant tree existed along the river on the site of the mobile home estate. Many of these have since disappeared and just a few very small and fragmentary examples remain on the riverbank.

Spindle. R. Just a few isolated examples of this shrub are found in the parish. One at the small gravel pit in Springhall Field and the occasional one in ages in the surrounding arable land.

Crab Apple. O. Scattered examples of this tree are found in a variety of situations and most probably have arisen from seeds from apple cores or dispersal by animals.

Common Beech. F. This tree is found generally scattered in the more urban and garden areas of the parish. In almost all situations, it has almost certainly been planted as a feature tree.

Copper Beech. O. This is a tree which was bred by Thomas Rivers and examples are found where they have been planted as specimen trees by the Surgery, in the garden of the Corner House on the Fair Green and in a property up the High Wych Road.

Ornamental Plum. C. The red leaved variety seems to have been planted throughout the urban section of the parish, typically in gardens.

Cherry Plum. C. Found mostly featuring as the main tree or shrub found in a hedge. It is commonly distributed throughout the urban area of the parish and where the hedge has grown up it sometimes forms a quite large tree with spectacular white blossom.

Sycamore. C. Found throughout the whole parish largely due to its prolific seeding habit. It is found growing in almost any situation but seldom reaches the size of a specimen tree.

Holly. F. Both the native and ornamental varieties of this tree are found scattered throughout particularly the urban and housing area of the parish. It quite commonly occurs in gardens but equally crops up as a wild tree in areas of Pishiobury Park and the old Pishiobury Estate.

Silver Birch. F. Most commonly found as a planted tree in gardens or as a feature tree in a particular setting where it is valued for its silver bark and curtain-like leaves and branches.

Cedar of Lebanon. O. This tree is found concentrated mainly in Pishiobury Park where there are a significant number of young examples planted to replace 19th century plantings which had been damaged, typically by gales.

Western Red Cedar. R. Often difficult to distinguish from other trees of this type, examples are found in the Churchyard of Great St Mary's.

Horse Chestnut. C. Found throughout the parish and often forming the main constituent of woodlands such as at Hyde Hall. It is subject to annual attack by the moth which results in early defoliation and many examples have been felled due to 'bleeding canker' disease.

Oak. F. Surprisingly, this tree is not found as commonly as might be expected. It is most often found in parkland or as trees in hedges but there seems to have been a reluctance to plant what can become a large tree in an urban setting.

Holm Oak. R. Several specimens of this tree exist near to the Hand and Crown on the old Rivers Nursery site and also in the grounds of Hyde Hall.

Elder. C. Found growing as a 'weed' species throughout the parish, typically in any situation but most commonly as part of a hedge line.

Sallow. C. Restricted to the damper areas of the parish this tree is found most commonly growing on the floodplain or in areas where there is damp soil or standing water.

Guelder Rose. R. Only one known example of this exists in a hedge near to the Water Works in Redricks Lane. It is typically a hedge species.

Common Buckthorn. R. Found very occasionally in hedges where it occurs naturally on arable land or more occasionally as a tree planted as a food supply for the caterpillar of the Brimstone butterfly.

Hawthorn. A. Found growing throughout the parish in all situations. Most commonly as a hedge species but it can also attain the stature of a small tree.

Field Maple. A. Growing throughout the parish in all settings. Usually as a hedge component but occasionally attaining the stature of a medium-sized tree. An unusual example is found at Spellbrook where the side branches have been trained horizontally in the same manner as Lime.

Small Leaved Elm. C. In spite of the depredations of Dutch Elm Disease this tree still persists although nowadays only frequently as a small tree or shrub in hedges. It seldom

reaches any size before it succumbs to the disease but continues to sucker regularly, maintaining the population.

Cupressus sp. C. Found almost exclusively planted in gardens and as screens where it frequently has outgrown its situation. It is common to see it being removed but nevertheless many examples still persist.

Yew. F. Somewhat surprisingly this tree is found scattered, typically throughout the urban area of the parish. It is found where it is to be expected in churchyards but also as components in hedges where presumably it has spread by seeding and also as planted examples in people's gardens.

Pinus sp. C. Difficult to determine the exact species, this tree is found throughout the urban area of the parish where it has usually been planted as a feature tree or it may have continued through from the garden of large houses where it was planted as a specimen tree.

Larch. O. This tree typically crops up as a component in roadside woodland belts where it seems to have been part of the planting mixture.

Crack Willow. C. This is the commonest Willow found growing all the way along the Stort valley where the soil is wetter and usually on the floodplain.

White Willow. O. Found in just a few places where it may be the remnant from Cricket Bat Willow plantings. It usually forms a substantial tree on the floodplain.

Weeping Willow. O. Nearly always planted as an ornamental addition. Found not only in damper situations but also occasionally planted in gardens.

Osier Willow. R. This is found at a few scattered locations in the Stort Valley. It was typically associated with woodland that had been rented or leased by Thomas Rivers where the long poles it produces were used in the packaging of fruit trees in a cradle packed with straw.

Goat Willow. F. Typically found growing in damper situations it most commonly forms a rather straggling tree which never reaches any great size before falling over when it nevertheless continues to grow.

Box. R. As a shrub nearly always associated with ornamental planting on local estates.

Cherry Laurel. O. As ornamental plantings in a variety of situations typically as a hedging plant in gardens or as a screen and sometimes to provide cover for gamebirds in Victorian times.

Aspen. R. Found typically in conservation plantings in the Tednambury area. It is always found in damper situations often in association with Alder.

Alder. F. Found growing in damp and wet situations all along the River Stort. It quite often reaches the size of a substantial tree especially along the river banks.

Hazel. C. Nearly always as a component of hedges but occasionally in woodland plantings where it was originally part of the coppice system. It is quite prolific in the Pishiobury Park area where areas were planted almost certainly by Thomas Rivers, to provide a supply of sticks and poles for use on the Nursery in the days before bamboo canes.

Plane. R. Found at just a few locations in the parish and nearly always as specimen trees. There are two such at Sawbridgeworth Station and another specimen in the garden of the big white house in Knight Street.

Hornbeam. F. Typically found as a component in plantings but also as a woodland plant in its own right in the occasional coppice setting. It seldom achieves the status of a specimen tree but is more likely to have been coppiced and be multi-stemmed.

Medlar. R. Only one example is known in the parish of a planting in the small triangular wood opposite the Bull public house. This planting is a puzzle and may just have resulted as the result of odds and ends of trees to make up the planting or it could be a seedling.

Mulberry. R. A large and old specimen at the top of Bonks Hill on the east side at the entrance to Pishiobury Road. Only one other garden example known.

Bird Cherry. C. Typically found as a component of a planting mixture typically in the Pishiobury Park area.

Hybrid Elm 'Sapporo Gold'. R. Three of these were planted in the grounds of Leventhorpe School through a project backed by Pitney Bowes at a time when we had lost nearly all of our native Elm trees through Dutch Elm disease. This tree is disease resistant but never reaches any great size. Of the three, one got a rot in the base probably through mower or strimmer damage, one was removed to make extra car parking space and the third has suffered a 'crown reduction' for no obvious purpose.

Robinia or False Acacia. R. Only the odd specimen of this tree can be found in the parish. It was at one time proposed as a durable timber tree but was found to be difficult to convert into timber and boards.

The following trees are all recorded as being O. Apple, Pear, Plum, Quince. Other than those found in Orchard collections it is unusual these days to find fruit trees growing in people's gardens. The gardens themselves are usually too small for trees that have a habit

of growing larger and people do not tend to live in a house for long enough to gain the benefit of a tree coming into fruit. The only examples are likely to be found in the gardens of houses in the older part of the town.

Suggestions for action:

- Carry out a full and proper and detailed audit of trees in the parish.
- Make a photographic archive record of the findings with special reference to veteran and specimen trees.
- Recognise specimen and veteran trees. If possible place them on the Ancient Tree Register.
- Recognise the need to replace trees which have been lost through age or disease where this is possible in public areas.
- Encourage young people and school children to carry out project work on trees including practical activities, artwork and field studies.
- Emphasise the role that trees play in removing pollution from the atmosphere, providing a screen for background sound and the way in which they provide aesthetic value in our parish and lives.

Sawbridgeworth Parish Biodiversity

Birds.

Little Grebe. O. A small number often overwinter along the canal and backwater. In the past they have attempted to breed but there is too much disturbance along the river.

Black Headed Gull. O. As small flocks on surrounding farmland especially when cultivation is taking place.

Herring Gull. R. Occasionally in amongst flocks of Black Headed Gulls but more often flying over to roost in the Lee Valley.

Water Rail. O. Typically a bird of wet areas and marshes. It is normally resident at Sawbridgeworth Marsh and has also been recorded in the wet area by Sawbridgeworth Station.

Grey Heron. O. Not uncommon visitor to Sawbridgeworth Marsh Nature Reserve and also occasionally seen fishing along the backwater loops but more often flying over. Has been known to regularly predate fish in local garden ponds.

Little Egret. O. Most commonly seen during winter months when the fields are flooded especially in the Harlow Marshes area. It has also been recorded hunting on the wet fields on the Mores.

Mute Swan. O. A pair of these birds are occasionally seen on different parts of the canal and very occasionally in the backwater loops. There is usually an attempt at nesting at some point along our part of the River but disturbance is frequent and the nesting is not always successful. Best results are known from the serpentine lake at Pishiobury and the cut-off loop at Tednambury Farm.

Canada Geese. O. As small flocks flying over or feeding on wet meadows. They have been recorded from the Fisherman's Lake as well as the lakes at Redricks.

Cormorants. F. These birds have made a surprising increase in numbers in recent years. They are not uncommonly seen fishing in the canal and are unpopular in the Fisherman's Lake's. They are not known to nest locally.

Mallard. C. Our commonest duck and resident on the river at all times of the year. They are often a mixture of pure Mallard and hybrid forms.

Teal. R. These small ducks appear periodically during the winter months and are mostly found on the backwater loops and flooded fields. They are very wary and difficult to approach.

Tufted Duck. O. At the extreme end of the parish in the lakes at Redricks and can be observed from the tow path.

Gadwall. R. Once again, during the winter months on flooded fields but also on the flooded gravel pits at Redricks. As with the Tufted Duck they can be observed from the tow path with binoculars.

Sparrowhawk. O. Our main resident bird of prey, often visiting gardens with bird feeding tables.

Kestrel. O. Most commonly seen in the surrounding countryside or flying over. Some local nest sites have been recorded including those in Barn Owl nest boxes.

Buzzard. O. This large bird of prey has made a return to the parish in recent years. It is commonly seen flying over the parish especially in the Tednambury Farm area but can be encountered anywhere. There is good evidence for nesting in Fox Earth Wood and at Rowneybury.

Red Kite. O. Once again this is a bird of prey which was completely absent from the parish some years ago but is now not an uncommon sight, often soaring over the town. Nesting almost certainly takes place locally but does not happen until the leaves are on the trees so nest sites are difficult to ascertain.

Lapwing. R. Formerly, this bird is to come to our area in large flocks during the winter and stay until early spring when they would even start to do their courtship flight. At one time they did nest locally in rough fields especially in the Rivers Nursery area. When Causeway Mead was 'trashed' a few years ago, it lay as a wet muddy area for one season and Lapwings were actually flight displaying over it. There is a nearby population at RSPB Rye Meads and from here they migrate into the bottom end of the Stort Valley but do not seem to come into our parish at present.

Pheasant. F. There is a scattered population of Pheasants in the parish with some wild populations especially at sites such as Sawbridgeworth Marsh. They are sensitive to disturbance, especially at nesting time.

Partridge. O. The occasional pair are seen on the arable fields to the West of the parish.

Coot. F. Found in a scattered population along the canal, the serpentine lake at Pishiobury and the Fishermans Lake. As with other waterbirds they are sensitive to disturbance at nesting time.

Moorhen. C. There is a stable population of Moorhens all the way along the river and in the backwater loops. They are a secretive bird and able to hide their nests away as well as tolerating disturbance to a certain extent.

Common Sandpiper. R. Occasional sighting as they pass through as a passage migrant.

Common Snipe. O. This bird is largely a winter visitor and is usually present in small numbers on Sawbridgeworth Marsh Nature Reserve. At times of flood they move out to feed on wet meadows. It is believed that there was a nesting attempt at the Marsh some years ago but the general decline in success of inland nesting locally is mirrored by the regional picture.

Jack Snipe. R. Very occasional sighting of this bird on the Sawbridgeworth Marsh Nature Reserve.

Woodcock. O. This bird is a winter visitor and very small numbers, usually singly, are recorded at Sawbridgeworth Marsh and the Osier Bed at Pishiobury.

Common Tern. O. This bird is a summer visitor and is most frequently seen when it is fishing on the canal or the Fishermans Lake when it dives spectacularly into the water to catch small fish. There is some breeding success in our area at RSPB Rye Meads and Hatfield Forest where nest rafts have been provided.

Barn Owl. F. The success of this species has been boosted by the provision of wooden nest boxes throughout the Stort Valley from Royden to Berden. It is not uncommon to have broods of three or four young and this success is evidence of a strong small mammal population although breeding years 10 to go hand-in-hand with fluctuating populations of this food resource. The box at Sawbridgeworth Marsh had five owlets in 2019.

Tawny Owl. F. This bird is widespread in the parish and he is usually known by its call rather than sightings due to its nocturnal habits. It's breeding success is determined by the provision of sufficient hollow trees to provide nest sites.

Wood Pigeon. C. This bird is widespread and numerous throughout the parish, being considered an agricultural pest on fields of oilseed rape. It is a very common visitor to bird tables and has a long and successful nesting season.

Collared Dove. F. This bird is largely restricted to the more urban areas of the parish where it is common in gardens and on bird tables. It's habit of feeding on spilt grain in farmyards is no longer an available resource with new regulations forbidding access of birds to farm buildings on health grounds. Like the Wood Pigeon it has a long nesting season which is part of the secret of its success.

Stock Dove. O. This bird is thinly spread throughout the parish and in fact has the same protection designation as the Barn Owl. It is a tree nesting bird and often competes with the latter's species for nest sites especially in wooden nest boxes.

Turtle Dove. It now looks as if this species has been lost from our parish along with most of the South East with the exception of the coastal fringe. It was a bird which was totally

symptomatic of the English summer with its soft purring and is a great loss. The decline in population is attributed to changes in agricultural practices leading to loss of weed seeds as well as the continuing practice of shooting these birds when they are on migration on the continent. The last recorded was at Harlow Mill in our parish.

Feral Pigeon. F. There are several colonies of these birds in our parish and they always seem to associate themselves with buildings. They were largely evicted from the Maltings buildings as well as those at Burtons Mill. There are two remaining colonies under bridges, one at Kecksy's and the other at County Bridge.

Great Spotted Woodpecker. F. This bird is found throughout the parish both in woodland, countryside and people's gardens. It is a common bird at birdfeeders. Its habit of breaking into nest boxes to predate the young of other birds makes it less popular.

Green Woodpecker. O. Less common than the Great Spotted, this woodpecker is a bird of open grassland where it feeds on ants nests. Its call which gives it the country name 'Yaffle' is very distinctive.

Lesser Spotted Woodpecker. R. This small woodpecker is a rarity in the parish these days. It used to be found at Sawbridgeworth Marsh but has not been recorded for some years. It is typically a bird of old orchards.

Skylark. F. This is a bird of open arable land and is well-known as it rises in the sky, singing as it goes. It is less common than previously but still seems to hang on in the areas of intensive agriculture.

Swallows. O. Less common and declining. The reasons for the decline are not clear but as a summer visitor, its food supply and habitat in its winter home are probably under threat. The decline in cattle husbandry in the local area may also be a factor as this would normally provide an insect food supply.

House Martin. R. This bird which once built its mud nests on buildings in Bell Street and Knight Street is in serious decline. The reasons for this are very similar to that of the Swallow but the habit that people had of knocking the mud nests off the wall of their houses has not helped the situation locally.

Swifts. O. Much less common now than previously. It is the last migrant of this species of bird to arrive to nest. In Sawbridgeworth it is known that several of the houses which used to be populated by Swifts nests have been modified and the birds now no longer have access. In 2020 there were approximately 6 Swifts and their screaming flight parties are missed in the town.

Song Thrush. O. Formerly much more common, this bird is nowadays seldom seen. The reasons for the decline are uncertain but there is known to be heavy predation during the nesting season.

Mistle Thrush. O. This large and aggressive member of the Thrush family is seen just occasionally in the parish. It nests in a prominent position in a tree and will vigorously defend its nest and territory. It can be seen feeding on the open green spaces along with Song Thrush and Blackbird.

Blackbird. F. This is typically a bird of gardens where it will build its nest in hedges. It is a frequent visitor to bird tables and will feed on windfall apples in the winter months. Its song is one of the major participants in the Dawn Chorus.

Redwings. F. This member of the Thrush family is a winter visitor staying with us until early March. It feeds on berryed shrubs and windfall apples in orchards.

Fieldfare. F. As with the Redwing, this is a winter visitor and can be found in a compliment with this same's species for most of the winter season.

Grey Wagtail. F. This bird is found along the river where it often builds its nests near to weirs and old mill buildings. It can be observed collecting insects as it feeds on the brickwork of locks and its tail is constantly wagging giving it its name.

Pied Wagtail. O. This is a similar bird to the Grey Wagtail but is much less common. Once again it is typically found along the river and in association with riverside buildings.

Wren. F. This is the smallest bird with one of the loudest songs. It is typically a bird of woodland and gardens where it feeds on insects and invertebrates, seldom visiting the bird table. The male builds several usually well hidden 'dummy' nests in the spring for the female to inspect and make her choice.

Dunnock or Hedge Sparrow. F. As with the Wren, this is a bird of woodland and particularly gardens. It seldom visits the bird table and makes its nest with beautiful pale blue eggs early in the year. It is one of the first birds to start singing at the end of the winter.

Robin. F. This national bird seems to be a constant companion in many gardens. It is one of the first to start singing in the Dawn Chorus and nests early in very secretive situations.

House Sparrow. F. This once common species has undergone serious decline nationally. There are no obvious reasons for the decline except that modern housing provides fewer opportunities for the bird to gain access to build their untidy nests. Modern farming methods also mean that there is much less spilt grain and weed seeds available for the winter flocks to feed. There has recently been something of a resurgence in numbers

which could be linked with the practice of putting up multiple nest boxes on houses called 'sparrow terraces'.

Starling. F. Once very common, this bird has undergone decline but now seems to be making something of a comeback. In spring and summer they are typically a bird of gardens and bird tables and will make the most of any opportunity to gain access to the roof of a house for nesting. At the end of the summer they form up into large flocks for roosting. These so-called 'murmurations' and roosts were once relatively common locally but have since fallen out of use.

Sedge Warbler. O. This is essentially a marshland species where it nests in Reed beds. There are usually several resident at Sawbridgeworth Marsh during the summer months.

Reed Warbler. O. Occupies the same habitat as the Sedge Warbler, arriving late April to nest.

Cetti's Warbler. O. Resident throughout the year at Sawbridgeworth Marsh. This species was largely unknown until it successfully bred in Kent in 1972. Since that time it has spread to most of the southern half of the UK including our parish. Its rapid outburst of song is familiar to volunteers working on the reserve.

Grasshopper Warbler. R. A summer visitor which is seen and heard at Sawbridgeworth Marsh as well as other sites along the river in April and May. It seems that it calls for one or two days and if there is no response it moves on to try and find a mate elsewhere. It is thought to have bred on the Marsh in the last 10 years.

Whitethroat. F. A summer visitor the harsh song of this bird is familiar in areas of scrub and Marsh along the valley.

Chiff Chaff. F. This is one of the first calls in Spring and can be heard at many locations throughout the valley where it prefers the woodland and wetter areas. It is thought that it is one of the birds which used to be a migrant but which is now overwintering in response to climate change and global warming.

Blackcap. F. This bird is another which is thought to now overwinter instead of just being a summer migrant. It is a bird of scrub and woodland edge where its rich stream of song is a delight to hear.

Blue Tit. C. Found throughout the parish, this bird is a very familiar visitor to bird tables and feeding stations. It takes very readily to nest boxes provided.

Great Tit. F. The call of this bird is one of the first to be heard in spring. It is found throughout the parish especially in woodland and gardens with trees adjacent. Like the Blue Tit it takes very readily to nest boxes.

Long Tailed Tit. F. This is a less frequent visitor to bird tables than the previous two and very often appears in a small flock which feeds rapidly and then moves on. The flock members issue a continuous call which helps to keep them together. It is a very early nester, building its domed nest in Bramble. The nest is very cleverly camouflaged with lichens and lined with feathers. It is not uncommon to see what appears to be a feather flying through the air as it is carried by the Tit which is often small in comparison.

Coal Tit. O. An unusual visitor to the garden and bird table. Numbers are always small and are probably restricted to the nest sites it prefers which are small holes and cavities in trees.

Carrion Crow. C. This bird is found in some numbers throughout the parish. It is largely omnivorous and can be a very effective predator on the nests and young of other birds. In winter, it joins with Rooks and Jackdaws to form communal roosts.

Rook. F. There is currently only one rookery in the parish at Sawbridgeworth Cemetery. This is a success story as it went out of use but has gradually increased the number of nests to 16 in 2021. The adults can frequently be seen foraging for food on farmers fields or along the sides of roads.

Jackdaw. F. These birds are less common than before as they usually require hollow trees are nesting. Dutch Elm Disease in Pishiobury Park decimated the available nest sites and Jackdaws frequently now have the dubious habit of nesting in disused chimneys on people's houses. As with the other two species they join together to make communal flocks in winter time for roosting.

Jay. O. This bird is found in small numbers throughout the parish and the sight of its colourful plumage is always welcome which is less so than its harsh call. It is a truly omnivorous bird and will take any food items ranging from seeds, slugs and the eggs and young of other birds.

Magpie. F to C. The domed nests of this bird are quite commonly seen when the leaves fall in the autumn and it is at this time of year that the numbers are particularly noticeable as it seems that family groups come together into small foraging flocks. The Magpie is a largely omnivorous bird but is known to heavily predate the nests of other species.

Reed Bunting. O. There is a small population which is more or less resident at Sawbridgeworth Marsh. The male bird is particularly noticeable in his smart plumage as he perches on a Reed stem or shrub in a prominent position uttering his monotonous call.

Corn Bunting. R. This bird was once relatively common at the extreme western part of the parish particularly in the old airfield area. Like so many others it has become a victim of

modern agriculture and both nesting sites and diets of weed seeds and fallen grain are now much less available.

Yellowhammer. R. As with the above, this bird was previously much more common. It was a bird of farmland and nested in local hedges in this area. It's 'little bit of bread and no cheese' call was once familiar in our local countryside.

Nuthatch. O. There are several records of this bird particularly in the Pishiobury Park area as it is a bird of older woodland. The habit of removing dead branches and limbs of trees which often contain nesting holes has made the habitat much less favourable. It is probably present in the woods such as Fox Earth Wood.

Tree Creeper. O. As with the Nuthatch this bird favours older woodland and there have been sightings of it recently in the Osier Bed at Pishiobury.

Goldfinch. F. This pretty little bird is a real success story and is now a familiar sight at bird feeding tables in people's gardens. It has definitely benefited from the habit of providing food for birds and almost certainly uses evergreen trees such as Leylandii the nesting.

Greenfinch. O. Much less common than before, this bird still occurs in people's gardens where it visits bird tables and may nest. It has suffered from the Trichomonosis disease which infects the birds bill and mouth area making it difficult to feed and causing death. Regular sanitisation of bird feeders is recommended to prevent transmission.

Bullfinch. O. A small number of Bullfinches are found in the parish. They used to be recorded from Sawbridgeworth Marsh where they seem to favour the blackthorn thicket along the road. They used to be unpopular through their habit of pinching off the buds on fruit trees where they can cause considerable damage. Most of us would be quite happy to see a Bullfinch begin the buds of the fruit trees in our garden these days!

Chaffinch. F. This is typically a bird of gardens and is not uncommon throughout the parish. It is a frequent visitor to bird tables.

Linnet. R. Once again this was a bird of open farmland and has suffered from the practices of modern intensive agriculture. In fairly recent times, small flocks used to feed on Leventhorpe school field in the winter time. Development has reduced the habitat available and the practice of regular mowing and strimming reduces populations of weeds and other plants which would provide food in terms of seeds.

Cuckoo. R. This bird has undergone a radical decline with a single bird being heard in 2020 and one bird so far in 2021. At one time, not long ago it was not uncommon for three male birds to be chasing each other around at Sawbridgeworth Marsh. Reasons for decline almost certainly lie in habitat deterioration in its overwintering areas as well as

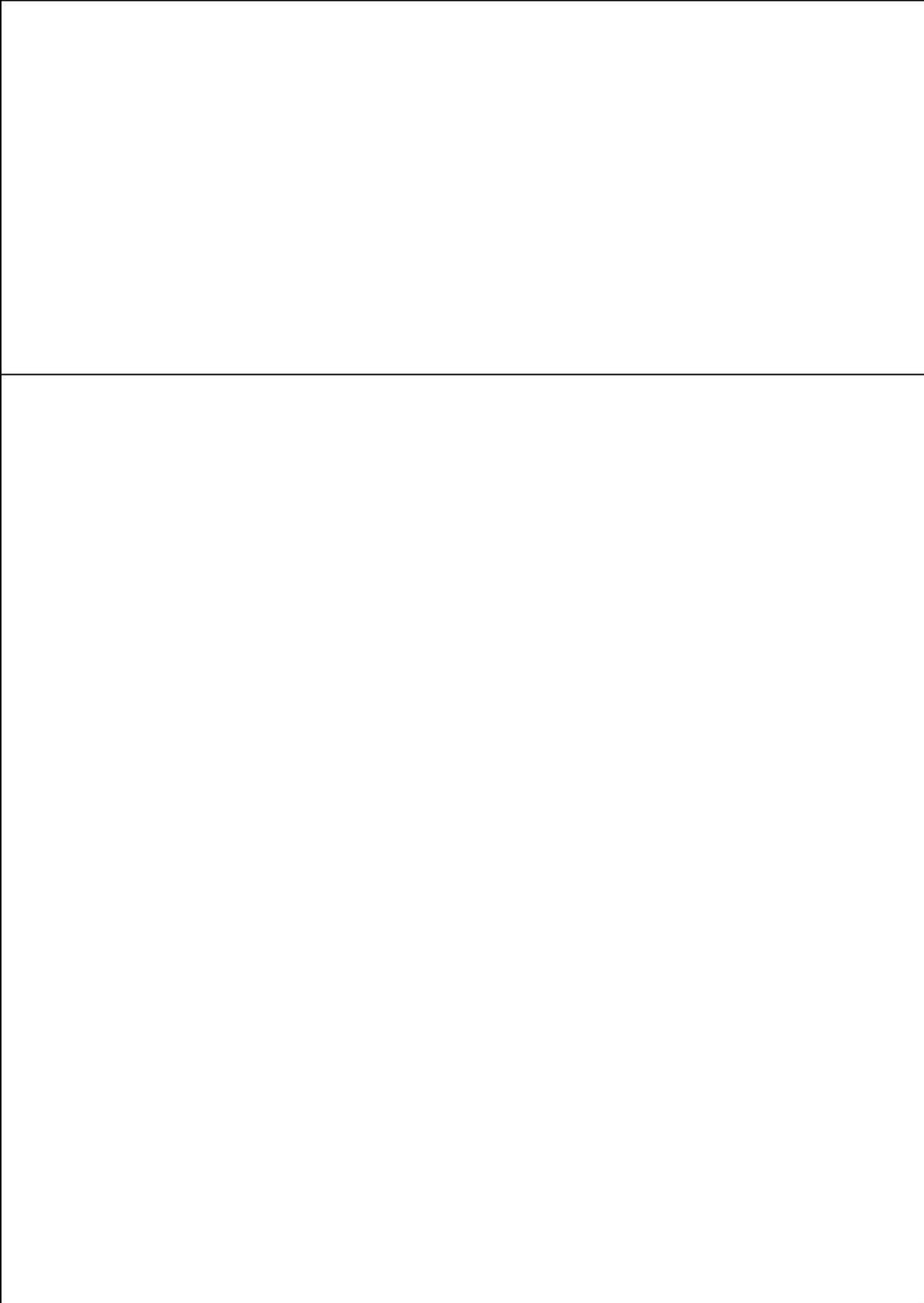
late and cold springs in this country which reduce the population of hairy caterpillars which are one of the main items of its diet.

Ring-necked Parakeets. O. This bird is much more common to the south of us nearer to London. It seems as if it is quite heavily reliant on the warmth generated by towns and cities and is nearly always seen in this area feeding on bird tables. It has been recorded doing such at properties on the current Pishiobury estate.

Kingfisher. O to R. Once a relatively common species along the river, this bird has undergone a considerable decline. The general pattern seems to be that the birds breed successfully at the artificial nest bank at RSPB Rye Meads. The young then move into the Stort Valley as the adults are strongly territorial. This explains why birds are quite commonly seen at the end of the summer and into the autumn. They are heavily impacted by hard winters and it seems that they move away and do not return. Nesting sites on the river used to be not uncommon but nest banks have become overgrown or have collapsed making nest tunnels vulnerable to predation by rats and mink. The bird is also supposed to need a maximum of 40 cm of water to dive into and catch fish efficiently. Most of the River has now been dredged out to a depth of 1.5 m and is frequently in a turbid condition which must make catching fish very difficult. There is also a constant level of disturbance along the river which means that the birds are more less driven to using the backwater loops which still seem to be something of a refuge for this iconic species which should be more common on our river. Early nest tunnel sites are frequently impacted by flash flooding from surface run-off after heavy rain.

Suggested actions:

- Encourage people to establish properly set out feeding stations in gardens which feed the right kind of food and reduce the chance of predation.
- Encourage people to put up nest boxes for those species which are known to use them. These include Swifts, House Martins, members of the Tit family and open fronted boxes for a wide range of other larger birds.
- Support the Barn Owl box nesting scheme.
- Investigate the possibility of setting up an artificial Kingfisher Nest bank as has already been done at South Mill Weir in Bishops Stortford.
- Try and interest farmers and landowners in encouraging farmland birds by establishing grass margins with the possibility of some additional grain ration feeding.
- Carry out an annual census of birds in the parish to monitor the state of the populations.
- Have an annual Dawn Chorus event for families.



Sawbridgeworth Parish Biodiversity

Coarse fish.

Roach. C. This is probably the commonest fish in the river where it is found not only in the canal but throughout the backwater loops.

Chub. C. At one time an uncommon fish in our river, it is now found throughout the system and often attains large sizes especially in the backwaters. It is an omnivorous feeder.

Bream. F. This is a shoal fish and is found both in the canal and the backwater loops. It often attains large sizes and prefers the slow flowing stretches of water.

Pike. F. The main predatory fish in the river, it is found throughout the system and is reckoned to travel into the backwaters to spawn in small groups.

Dace. F. This fish is very similar to the Roach but has yellow instead of red eyes. It is typical of the backwater loops where it is most at home in the fast flowing stretches.

Gudgeon.F. This fish never attains a very large size and is a bottom feeder. It prefers areas where the water is relatively fast flowing and typically inhabits weir pools with gravel beds.

Stone Loach. O. This is a small bottom feeding fish which is not very often encountered. It is nearly always found in the shallower and faster flowing stretches of the backwater where the bed of the stream is stony hence its name.

Bullhead. F. This small fish is nearly always found in the fast flowing sections of the backwater loops and in the tributary streams where the water is shallow. It spends a lot of the time hiding under stones and is reckoned to feed mostly at night.

Minnow. C. This small fish is found in large shoals which typically come together at spawning time. It is a major prey item for other fish and is typically found in the backwater loops where the water is faster flowing.

Carp. F. In this context we include Common and Mirror Carp. This is a species which has become much more common in recent years largely due to its popularity with fishermen. It is found as an introduced species in fishing lakes but often escapes or gets washed into the main waterways by floods. It is a spectacular fish due to the large sizes attained but is known to be highly destructive of weed beds and biodiversity due to its vigorous spawning habits and omnivorous feeding on any invertebrates found on the bottom of the river. In the past there has been a small population of Crucian Carp which typically lived in the static or 'dead' stretches of river adjacent to locks.

Tench. O. This is more of a lake fish than a river fish and has been introduced to fishing lakes for this purpose. It is occasionally caught in the canal but is typically a fish of slow flowing or static water.

Sticklebacks. F. In our river we have got 3 spined Sticklebacks and on the Sawbridgeworth Marsh Nature Reserve the 9 or 12 spined Sticklebacks. They are fish of still or non-flowing water and are capable of surviving poor water quality conditions.

Perch. F. This is the second predator to the Pike and will eat any small fish. Their feeding activities are often in evidence when small fish break the surface in an effort to escape. In the past, they have been caught by fishermen in 'specimen' sizes and seem to prefer the areas around weirs and spill ways where there is some movement of water and they are most likely to find the small fish which they feed on.

Bleak. O. At one time there was a minor population explosion of this species but they now seem to have gone into reverse. They were always found in the canal and are typically a more surface feeding fish.

Rudd. O. These are typically a lake species and much prefer still waters. They are found in small shoals in the more static areas of the canal and are there probably because they have been accidentally introduced with other fish to help restock the river.

Eels. O. At one time this was a very common species in the river but there has been a national decline which is mirrored locally. They have been found as 'elvers' in our part of the river where they have to surmount all the various obstacles in terms of weirs and spillways in order to move upstream as is their instinct. A large specimen was recently observed in the Sawbridgeworth backwater loop.

Sawbridgeworth Parish Biodiversity

Mammals.

Fox. F. Foxes are found throughout the parish but have never properly achieved the status of 'urban foxes' although it is not uncommon to see them in roads and streets in the town. Frequent disturbance by humans and dogs at what would be considered traditional fox earths, means that they frequently have cubs under garden sheds or in hidden away places near to older buildings.

Badger. O. There are at least six badger setts in the parish of which four are more or less permanently occupied 'mother' setts and the remainder which go in and out of occupation and which are frequently referred to as 'satellite' setts. The location of setts is not given because this mammal is still subject to persecution at various levels.

Muntjac. C. It is very surprising that this small deer is rated as common throughout the parish. This is on the basis that there are very few places where Muntjac are either present or their signs can be seen in terms of trackways, footprints and damage to plants in people's gardens and on allotments. It is a very secretive deer and can be present in large gardens without the owner being aware.

Fallow Deer. R. These large deer are rated as rare within the parish because although they are not uncommonly seen, they are not really resident. There is a herd(s) which moves up and down the Stort Valley between Harlow and Bishops Stortford, periodically going under the M11 through farm underpasses. The population is therefore mobile.

Moles. F. More or less restricted to the floodplain areas, moles are present in most areas of the parish where these conditions are found. They are likely to be more common in woodland than on grassland and are often overlooked in this situation.

Brown Rat. C. Frequently visiting people's gardens especially where birds are being fed and nesting in compost bins. There are very few areas of the parish where this mammal is not found.

Water Vole. O. Formerly common along the river, this mammal was driven to extinction in the Stort Valley through predation by the feral Mink. With this mammal now under control, there have been two re-introductions of Water Voles in 2015 and 2017. The first was to Thorley Wash Nature Reserve and the second to Sawbridgeworth Marsh Nature Reserve. Both have been successful and there is evidence that the voles are now moving out of these reintroduction sites to colonise their previous territory along the canal.

Otter. O. Prior to 2014 this mammal was absent from most rivers in the South East including our parish. The near extinction had been brought about by the excessive use of chemical compounds such as DDT in the 1950s and 60s and then chlorinated biphenols

released from plastics in the 1970s which were shown to have gender altering qualities and reduction in fertility. This position was mirrored in our parish with the exception of three animals which were reintroduced in the early 1990s at Hallingbury Mill courtesy of the Otter Trust. This reintroduction proved unsuccessful but there was a natural return in 2014 when it became apparent that animals were moving upstream from the Lee Valley. The reason that they are only listed as 'occasional' is that otters have a large territory and it is likely that our section of the river forms only part of one territory through which the animal will move regularly. There has been evidence of otter cubs more recently which suggests that breeding has been successful at some site along the river.

North American Mink. O. The farming of this animal for its fur and the accompanied accidental or deliberate releases into the environment resulted in decimation of much of our natural fauna including the Water Vole and waterbirds. In 2008 a control programme was instigated by the Herts and Middlesex Wildlife Trust which resulted in a rapid reduction in numbers. The trapping programme is still ongoing with a small number of animals being captured and humanely destroyed each year.

Polecat. R. This mammal seems to be making a return to its natural haunts having been driven out largely by gamekeeping activities in previous decades. Trail cam evidence of one animal was obtained from Sawbridgeworth Marsh and there have been several examples of roadkill in our surrounding area.

Stoat. O. This mammal is frequently overlooked but inadvertent trapping as part of the control Mink programme has shown that they are occasionally present Sawbridgeworth Marsh Nature Reserve. There have also been sightings in Pishiobury Park where there is a healthy rabbit population to provide food.

Weasel. Rarely seen and probably O but very secretive.

House Mouse. Status uncertain but a lot less common than in the past. Probably O, often mistaken for Wood Mouse.

Wood Mouse. C. Found in almost all settings and the commonest small mammal. It is the one that people usually catch in houses and garden sheds etc.

Bank Vole. F. Relatively common particularly in more rural situations.

Short Tailed Field Vole. Status uncertain and population varies from year to year. Probably F in areas of rough grass which are not very common in the parish.

Common Shrew. F. More often heard than seen. In some dissected Barn Owl pellets it was by far the most common prey item.

Pygmy Shrew. Status uncertain, probably O. Very rarely seen and secretive, most commonly found dead or as predated item, supposed to be distasteful and therefore usually killed but not eaten.

Water Shrew. Probably R but a survey needed. Sightings occasional on Sawbridgeworth Marsh Nature Reserve.

Pipistrelle Bat. F. Survey in 2019 found them to be present at scattered sites in the parish particularly Pishiobury Park and Rivers Orchard.

Daubenton's Bat. Status unknown but probably O. This is the bat which would be found flying along the river.

Noctule Bat. Status is uncertain but probably O. Has been recorded from Pishiobury Park in recent years.

Brandt's Bat. R. A single record from Pishiobury Park in 2019.

Long-eared bat. Probably F but status uncertain as this is a difficult but to pick up on a detector.

Grey Squirrel. C. Found throughout the parish and a common visitor to bird tables.

Hedgehog. O but could be F as status unknown. A survey started in 2019 showed that they were present on two allotment sites.

Suggested actions:

Update the mammal survey for the whole parish.

Concentrate on a survey of Hedgehogs and Bats as a priority and declining species.

Encourage people to create conditions in gardens and allotments for hedgehogs and consider installing bat boxes in Pishiobury Park to provide habitat where limbs of trees have been removed for safety reasons.

Ensure that any tree work carried out in the parish is subject to a bat survey before work is commenced.

Appendix 2.

Note on County Wildlife Sites.

The Phase 1 Habitat Survey 2013 for East Herts lists 10 wildlife sites in our parish area. In no particular order they are:-

- The Osier Bed at Pishiobury.
- Rivers Nursery.
- Rowney Wood.
- Stort Meads.
- Meadow south of Spellbrook.
- Scrub East of railway station.
- Sawbridgeworth Meadows.
- Tednambury Meadows.
- River Stort meanders (backwater loops) at Pishiobury.

They were designated as Wildlife Sites at the time in recognition of their biodiversity.

Suggested actions.

- Where possible, visit sites which are accessible and reassess their wildlife value by comparison with the original designation.
- Include these wildlife sites in the Parish biodiversity survey.

Wildlife Site Inventory					
FILE CODE	NAME	GRID REFERENCE	AREA(ha)	RATIFIED	DESCRIPTION
48/008	Mathams Wood	TL461183	See GIS layer	1997	Wood Anemone (<i>Anemone nemorosa</i>), Wood Millet (<i>Milium effusum</i>), Early Dog-violet (<i>Viola reichenbachiana</i>) and Primrose (<i>Primula vulgaris</i>). Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators. Ancient semi-natural wet Ash (<i>Fraxinus excelsior</i>)/Field Maple (<i>Acer campestre</i>)/Hazel (<i>Corylus avellana</i>) coppice woodland on Boulder Clay with waterlogged gley soils. The wood has been partly cleared and replanted in the past but semi-natural elements still remain. An area of Elm (<i>Ulmus sp.</i>) is present in the south and some planted poplar (<i>Populus sp.</i>) in the east. The ground flora is diverse with many woodland indicators such as Wood Anemone (<i>Anemone nemorosa</i>), Remote Sedge (<i>Carex remota</i>), Dog's Mercury (<i>Mercurialis perennis</i>), Primrose (<i>Primula vulgaris</i>), Goldilocks Buttercup (<i>Ranunculus auricomus</i>) and Sanicle (<i>Sanicula europaea</i>). Other interesting species recorded include Common Spotted-orchid (<i>Dactylorhiza fuchsii</i>), Early Purple Orchid (<i>Orchis mascula</i>), Zigzag Clover (<i>Trifolium medium</i>), Harsh Downy-rose (<i>Rosa tomentosa</i>) and Greater Butterfly-orchid (<i>Platanthera chlorantha</i>), a UK Near Threatened species. An extensive system of damp rides and ditches, clearings, a moat feature and ponds add habitat diversity. Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators.
48/009/02	Thorley Washes	TL491187	See GIS layer	1997	Semi-improved, predominantly neutral grasslands adjacent to the River Stort with numerous ditches and hedgerows within the site and along the boundary. Part of the grassland is rank and tussocky in character but generally of relatively low species diversity. Species recorded include Common Knapweed (<i>Centaurea nigra</i>), Oxeye Daisy (<i>Leucanthemum vulgare</i>), Meadow Buttercup (<i>Ranunculus acris</i>), Meadow Saxifrage (<i>Saxifraga granulata</i>), Meadow Vetchling (<i>Lathyrus pratensis</i>) and Common Sorrel (<i>Rumex acetosa</i>). The main species interest lies in the wet habitat occurring along the ditches and the river margin where species such as Reed Sweet-grass (<i>Glyceria maxima</i>), Meadowsweet (<i>Filipendula ulmaria</i>), sedges (<i>Carex spp.</i>), Branched Bur-reed (<i>Sparganium erectum</i>), Fool's Water-cress (<i>Apium nodiflorum</i>) and Water Forget-me-not (<i>Myosotis scorpioides</i>) occur. Other species recorded include Ragged Robin (<i>Lychnis flos-cuculi</i>), Marsh Horsetail (<i>Equisetum palustre</i>) and Common Fleabane (<i>Pulicaria dysenterica</i>). There are past records of Southern Marsh-orchid (<i>Dactylorhiza praetermissa</i>) from the northern field. Wildlife Site criteria: Grassland indicators; fen and swamp indicators.
48/010	Tednambury Meadows	TL491161	See GIS layer	1997	A complex of unimproved, wet, neutral grassland with areas of marsh, tall fen, raised, dry disturbed grassland, scrub and areas of dry and wet broadleaved woodland. The site support a diverse assemblage of plants including many

Wildlife Site Inventory					
FILE CODE	NAME	GRID REFERENCE	AREA(ha)	RATIFIED	DESCRIPTION
48/01	Sawbridgeworth Meadows	TL488154	See GIS layer	1997	indicator species such as Common Knapweed (<i>Centaurea nigra</i>), Common Sorrel (<i>Rumex acetosa</i>), Meadow Vetchling (<i>Lathyrus pratensis</i>), Bird's-foot Trefoil (<i>Lotus corniculatus</i>), Lady's Bedstraw (<i>Galium verum</i>), Marsh Marigold (<i>Caltha palustris</i>), Marsh Thistle (<i>Cirsium palustre</i>), Marsh Horsetail (<i>Equisetum palustre</i>), Ragged Robin (<i>Lychnis flos-cuculi</i>) and Fen Bedstraw (<i>Galium uliginosum</i>). Species of particular note recorded include Common Sedge (<i>Carex nigra</i>), Common Spike-rush (<i>Eleocharis palustris</i>), Blunt-flowering Rush (<i>Juncus subnodulosus</i>), Brown Sedge (<i>Carex disticha</i>), Wood Small-reed (<i>Calamagrostis epigejos</i>), Marsh Arrowgrass (<i>Triglochin palustre</i>), Marsh Valerian (<i>Valeriana dioica</i>), Marsh Marigold (<i>Caltha palustris</i>) and Southern Marsh-orchid (<i>Dactylorhiza praetermissa</i>). Wildlife Site criteria: Grassland indicators; fen and swamp indicators.
48/017	Scrub E. of Railway, Sawbridgeworth	TL481152	See GIS layer	1997	A large area of old neutral grassland, of varying wetness, along the Stort valley. The grassland is generally rank and contains uneven tussocky ground with areas of scrub, marsh and swamp, and a network of ditches partly lined with Crack Willow (<i>Salix fragilis</i>) and shrubs. Relict meadow species include Meadow Buttercup (<i>Ranunculus acris</i>), Common Sorrel (<i>Rumex acetosa</i>), Meadow Vetchling (<i>Lathyrus pratensis</i>), Lady's Smock (<i>Cardamine pratensis</i>) and Common Fleabane (<i>Pulicaria dysenterica</i>). Wetter areas support species such as Meadowsweet (<i>Filipendula ulmaria</i>), tall sedges (<i>Carex</i> spp.), Marsh Horsetail (<i>Equisetum palustre</i>), Marsh Thistle (<i>Cirsium palustre</i>), Reed Sweet-grass (<i>Glyceria maxima</i>), rushes (<i>Juncus</i> spp.) and Reed Canary-grass (<i>Phalaris arundinacea</i>). The ditches and the River Stort, which flows through part of the site, support tall marginal fen/swamp species and some aquatics. Two large Black Poplars (<i>Populus nigra</i>) are present beside the river. Water Vole (<i>Arvicola amphibius</i>) and Harvest Mouse (<i>Micromys minutus</i>) have been recorded on the site. Wildlife Site criteria: Grassland indicators; fen and swamp indicators.
48/019	Meadow S. of Spellbrook	TL489172	See GIS layer	1997	Area of mixed species scrub with rank grassland in the north and remnant rank tall fen vegetation in the south with some Crack Willow (<i>Salix fragilis</i>). The northern area of grassland is now partly occupied by a car park and supports common grasses and herbs, particularly of disturbed ground. The wet habitat in the south is dominated by large sedges (<i>Carex</i> sp.). A ditch runs alongside the railway to the west and a hedgerow borders the road in the east. Wildlife Site criteria: Fen and swamp indicators.
					Marsh and tall swamp habitat with some scrub and much planted willow, including Goat Willow (<i>Salix caprea</i>), Cricket-bat Willow (<i>S. alba</i> var. <i>caerulea</i>) and White Willow (<i>S. alba</i>). The swamp is dominated by Common Reed (<i>Phragmites australis</i>)

Wildlife Site Inventory					
FILE CODE	NAME	GRID REFERENCE	AREA(ha)	RATIFIED	DESCRIPTION
62/019	The Osier Bed, Pishiobury Park	TL480137	See GIS layer	1997	<p>Horse-chestnut (<i>Aesculus hippocastanum</i>). Species recorded in the ground flora include much Dog's Mercury (<i>Mercurialis perennis</i>), Bramble (<i>Rubus fruticosus</i> agg.) and Wood False-brome (<i>Brachypodium sylvaticum</i>) with Hairy-brome (<i>Bromopsis ramosa</i>), Wood Sedge (<i>Carex sylvatica</i>) and Enchanter's Nightshade (<i>Circaea lutetiana</i>). Stinking Iris (<i>Iris foetidissima</i>) has been recorded. Wood banks are present in places to the margin. Wildlife Site criteria: Ancient Woodland Inventory site with a semi-natural canopy and field evidence suggesting an ancient origin; woodland indicators.</p> <p>Old Alder (<i>Alnus glutinosa</i>) wood/plantation which is wet below, particularly towards the River Stort and along numerous internal drains. Common Nettle (<i>Urtica dioica</i>) is dominant in the drier areas while wetter parts are dominated by Lesser Pond-sedge (<i>Carex acutiformis</i>) with other species recorded such as Wild Angelica (<i>Angelica sylvestris</i>), Meadowweet (<i>Filipendula ulmaria</i>), Remote Sedge (<i>Carex remota</i>) and Common Comfrey (<i>Symphytum officinale</i>). The west edge of the wood slopes upwards and is drier with Hawthorn (<i>Crataegus monogyna</i>), Hazel (<i>Corylus avellana</i>), Elder (<i>Sambucus nigra</i>) and Blackthorn (<i>Prunus spinosa</i>) with Dog's Mercury (<i>Mercurialis perennis</i>) below. Hybrid Black Poplar (<i>Populus x canadensis</i>) with Sycamore (<i>Acer pseudoplatanus</i>) and Ash (<i>Fraxinus excelsior</i>) are present on drier ground in the north-west of the site. The eastern edge, by the river, supports tall herb, swamp and willow (<i>Salix</i> spp.) scrub. Wildlife Site criteria: Fen and swamp indicators.</p>
62/020	Rivers Nursery	TL474145	See GIS layer	1997	<p>A former nursery site supporting a mosaic of habitats including semi-improved neutral grassland, scrub and old orchard trees. The grassland is reasonably diverse and supports a number of indicator species including Agrimony (<i>Agrimonia eupatoria</i>), Common Knapweed (<i>Centaurea nigra</i>), Common Centaury (<i>Centaureum erythraea</i>), Meadow Vetchling (<i>Lathyrus pratensis</i>), Oxeye Daisy (<i>Leucanthemum vulgare</i>) and Wild Marjoram (<i>Origanum vulgare</i>). The orchard to the west also has a good grassland flora with abundant Black Knapweed and Agrimony. Large numbers of Bee Orchid (<i>Ophrys apifera</i>) have been recorded. Scrub is predominantly of Hawthorn (<i>Crataegus monogyna</i>) and Blackthorn (<i>Prunus spinosa</i>) with some Dog-rose (<i>Rosa canina</i>). Wildlife Site criteria: Grassland indicators.</p>

Wildlife Site Inventory					
FILE CODE	NAME	GRID REFERENCE	AREA(ha)	RATIFIED	DESCRIPTION
					Sedge (<i>Carex hirta</i>), Meadowsweet (<i>Filipendula ulmaria</i>), Meadow Vetchling (<i>Lathyrus pratensis</i>), Marsh Horsetail (<i>Equisetum palustre</i>), Reed Canary-grass (<i>Phalaris arundinacea</i>), Common Meadow-rue (<i>Thalictrum flavum</i>) and Floating Sweet-grass (<i>Glyceria fluitans</i>). Tufted Hair-grass (<i>Deschampsia cespitosa</i>), Yorkshire Fog (<i>Holcus lanatus</i>), Meadow Barley (<i>Hordeum secalinum</i>) and Pepper-saxifrage (<i>Silaum silaus</i>) are present in the somewhat drier areas. Other species of note include Common Knapweed (<i>Centaurea nigra</i>), Common Sorrel (<i>Rumex acetosa</i>) and Meadow Buttercup (<i>Ranunculus acris</i>). Wildlife Site criteria: Grassland indicators; fen and swamp indicators.
62/009	Stort Meads	TL484139	See GIS layer	1997	A series of alluvial damp to marshy semi-improved grasslands alongside the River Stort and Stort Navigation. The grasslands are bordered in part by lines of old Crack Willow (<i>Salix fragilis</i>) with rarer Pedunculate Oak (<i>Quercus robur</i>), Ash (<i>Fraxinus excelsior</i>) Hawthorn (<i>Crataegus monogyna</i>) and poplar (<i>Populus sp.</i>). Numerous ditches supporting marshy marginal vegetation and fen cross the site. The sward is typically composed of Yorkshire Fog (<i>Holcus lanatus</i>), Meadow Foxtail (<i>Alopecurus pratensis</i>), Creeping Bent (<i>Agrostis stolonifera</i>), Soft-brome (<i>Bromus hordeaceus ssp. hordeaceus</i>) and Fescues (<i>Festuca spp.</i>) with less common Sweet Vernal-grass (<i>Anthoxanthum odoratum</i>), Meadowsweet (<i>Filipendula ulmaria</i>), Marsh Horsetail (<i>Equisetum palustre</i>), Hairy Sedge (<i>Carex hirta</i>), Common Sorrel (<i>Rumex acetosa</i>) and Meadow Buttercup (<i>Ranunculus acris</i>) are common. The wettest areas support much Lesser Pond-sedge (<i>Carex acutiformis</i>). Other species recorded include Ragged Robin (<i>Lychnis flos-cuculi</i>), Floating Sweet-grass (<i>Glyceria fluitans</i>), Meadow Vetchling (<i>Lathyrus pratensis</i>) and Lady's Smock (<i>Cardamine pratensis</i>). The area is important for riparian mammals with both Water Vole (<i>Arvicola amphibius</i>) and Otter (<i>Lutra lutra</i>) recorded in the area. Wildlife Site criteria: Grassland indicators.
62/016	Rowney Wood (High Wych)	TL469139	See GIS layer	1997	Old semi-natural, possibly ancient, coppice of Hornbeam (<i>Carpinus betulus</i>) and Ash (<i>Fraxinus excelsior</i>) with Small-leaved Elm (<i>Ulmus minor</i>), Field Maple (<i>Acer campestre</i>) and Hazel (<i>Corylus avellana</i>) in the subcanopy. Other woody species include Sycamore (<i>Acer pseudoplatanus</i>), Norway Maple (<i>Acer platanoides</i>) and

Wildlife Site Inventory						
FILE CODE	NAME	GRID REFERENCE	AREA(ha)	RATIFIED	DESCRIPTION	
62/026	River Stort Pishiobury Meander	TL483133	See GIS layer	2000	A widened, meandering section of a River Stort back channel with records for Otter (<i>Lutra lutra</i>). Wildlife Site criteria: Species.	
62/027	River Stort Back Channel, Pishiobury	TL477132	See GIS layer	2000	River Stort back channel supporting a good gravel bed, banks undercut in places and exposed tree roots with records for Water Vole (<i>Arvicola amphibius</i>). Wildlife Site criteria: Species.	

Appendix 3.

References.

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