

Site name: **River Lea CWS**

Status(es): County Wildlife Site

Gridref: TL02

Area: 36.63 hectares

Council(s): Central Bedfordshire  
Luton Borough

History:

1990	CWS recognized
9/1998	Cat's Brook and Houghton Brook added to the CWS
11/2007	Scrapes near Cat's Brook and downstream riverside trees and hedges confirmed within the CWS
17/01/2013	Lewsey brook added. Boundary of CWS defined over entire length of River Lea and its headwaters, within Luton.

CWS recognized for: River  
Adjacent habitats and features considered part of the river system  
Population of Water Voles

Main habitats present:

UK BAP Priority River  
Fen, Marsh and Swamp (Broad habitat)

Other habitat(s) Neutral grassland  
Scrub  
Hedgerows  
Trees

Site Description:

Phase 1 Survey 1990

A County Wildlife Site comprising the Bedfordshire extent of the River Lea and certain of its head streams.

CWS Boundary extended September 1998

Cat's Brook and Houghton Brook were added to the County Wildlife Site in September 1998. A narrow strip of neutral grassland at the edge of a playing field beside Cat's Brook was also included in the CWS.

CWS Boundary clarified November 2007

On 15/11/2007 the three riverside scrapes from just upstream of where Cat's Brook enters the River Lea, downstream to Runfold Avenue (from TL073244 to TL074244) and the riverside hedgerows and trees from TL074244 to TL076242 (Runfold Avenue to Bancroft Road) were confirmed to be within the County Wildlife Site boundary.

***The site description follows, pieced together from several surveys:***

Houghton Brook, TL046243 – TL060244 (August 1998):

Where it emerges from under the motorway the brook contains water-starwort sp., fool's watercress and curled pondweed. The brook is generally slow flowing with numerous small fish visible in it. The MG1 grassland on its south bank contains frequent field scabious with a hawthorn hedge along its north bank. For much of its length west of Montague Avenue the brook is overgrown with S28-Phalaris swamp with occasional reed sweet-grass. The open banks support ruderal vegetation with occasional Canadian golden-rod and scattered bramble scrub (W24 Rubus-Holcus underscrub), ash and sycamores. The last 150m west of Montague Avenue is heavily shaded by an overgrown hedgeline along the south bank. East of Montague Avenue the brook is more open with scattered ash and elder. The brook is faster flowing with occasional reed canary-grass and comfrey sp. on the south bank. A row of five pollarded white and crack willows is found at TL054244 with guelder rose and grey willow to the east. Further east the brook is heavily shaded by mature horse-chestnuts and sycamores. Where it runs

alongside Toddington Road the brook is open and straight with ruderal vegetation on its banks. There is an area of MG1 grassland adjacent to the southwest. The canalised section on Leagrave Common is deep and very slow flowing with abundant curled pondweed and occasional water-starwort sp. present. Scattered elder and willows are present along this length.

Cat's Brook, TL075246 – TL073244 (August 1998):

Shallow and fast flowing in places with a stony bottom and situated in a deep gully. MG1 and ruderal vegetation on its banks contain occasional perforate St John's-wort and black knapweed. The southeast bank contains a defunct hedgeline with mature trees, mostly hawthorn and English elm, with occasional hazel, hornbeam, buckthorn, beech, pedunculate oak and blackthorn. A large bank along its northwest side supports MG1 grassland, W24 bramble scrub and scattered hawthorn, elm and other scrub. At its junction with the River Lea the brook levels out, scraped areas on either side of the brook at this point support weedy MG1 and MG7 grassland, and a small side pool has been created along its north bank.

River Lea at Leagrave Common CWS, TL056246 – TL061243. (June 1998):

The River Lea contains little aquatic vegetation apart from frequent water starwort (*Callitriche sp.*) (A16-*Callitriche stagnalis* community). Along the margins are found watercress (*Rorippa nasturtium*), water forget-me-not (*Myosotis scorpioides*), brooklime (*Veronica beccabunga*), reed sweet-grass (*Glyceria maxima*), marsh marigold (*Caltha palustris*), reedmace (*Typha latifolia*) and water mint (*Mentha aquatica*). The banks support a coarse vegetation similar to that present over most of the marsh. A couple of large white willow (*Salix alba*) are also present along the river.

River Lea from Bramingham Road to Icknield Way, TL062243 - TL072244 (July 1999):

The River Lea along much of this section is relatively fast-flowing and shallow, with a gravelly or stony bottom. The western half contains frequent curled pondweed (*Potamogeton crispus*) with occasional water starwort (*Callitriche* agg.). Frequent marginal vegetation is also present, typical of S23-Water margin vegetation, dominated by watercress (*Rorippa nasturtium*) with occasional brooklime (*Veronica beccabunga*).

Further east, the river is slower flowing and has a more silty bottom and less aquatic vegetation. Marginal vegetation is also more scattered, consisting of isolated stands of watercress, reed canary grass (*Phalaris arundinacea*), reed sweet grass (*Glyceria maxima*) and yellow iris (*Iris pseudacorus*).

The banks of the river are covered in an MG1-Arrhenatherum grassland dominated by coarse grasses such as false oat grass (*Arrhenatherum elatius*), cocksfoot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), creeping bent (*Agrostis stolonifera*), wall barley (*Hordeum murinum*), rough meadow grass (*Poa trivialis*) and ruderals including hogweed (*Heracleum sphondylium*), cow parsley (*Anthriscus sylvestris*), Russian comfrey (*Symphytum uplandicum*), hedge bindweed (*Calystegia sepium*), thistles (*Cirsium* sp.), horse radish (*Armoracia rusticana*), nettle (*Urtica dioica*), great willowherb (*Epilobium hirsutum*), black horehound (*Ballota nigra*), tansy (*Tanacetum vulgare*), water figwort (*Scrophularia auriculata*), hemlock (*Conium maculatum*), cleavers (*Galium aparine*) and mugwort (*Artemisia vulgaris*). Of particular interest are a couple of stands of butterbur (*Petasites hybridus*) and a patch of meadow cranesbill (*Geranium pratense*) along the western half of the river.

Scattered scrub and mature trees are present along the river including white, crack and goat willow (*Salix alba*, *S. fragilis* and *S. caprea*), osier (*S. viminalis*), elder (*Sambucus nigra*), blackthorn (*Prunus spinosa*) and hawthorn (*Crataegus monogyna*).

River Lea from Bramingham Road to Icknield Way, TL062243 - TL077242 (July 2006):

The River Lea along much of the section is relatively fast-flowing and shallow, generally with a gravel or stony bed. At TL074243 is an area of shingle with large stones, which is used as a bathing area by birds. Curled pondweed (*Potamogeton crispus*) is frequent at the western end with occasional water starwort (*Callitriche* agg.). Frequent marginal vegetation is also present, dominated by watercress with occasional brooklime (*Veronica beccabunga*), water forget-me-not (*Myosotis scorpioides*), reed canary grass (*Phalaris arundinacea*), reed sweet grass (*Glyceria maxima*) and yellow iris (*Iris pseudacorus*).

Scrapes where Cat's Brook meets the River Lea:

Three scrapes have been dug next to the river at the point where the Cats Brook flows into the Lea. These contain coarse grassland and ruderal vegetation similar to that elsewhere but have many species more typical of disturbed areas such as frequent common couch (*Elymus repens*). Other species present include red and tall fescue (*Festuca rubra* and *F. arundinacea*), timothy and smaller catstail, reed canary grass (*Phalaris arundinacea*), great willowherb, red clover (*Trifolium pratense*), hogweed, horse radish, watercress (*Rorippa nasturtium-aquaticum*), ribwort plantain, weld (*Reseda luteola*), tansy,

canadian goldenrod (*Solidago canadensis*), teasel (*Dipsacus fullonum*), common wintercress (*Barbarea vulgaris*), creeping buttercup, black knapweed, common toadflax (*Linaria vulgaris*), white campion (*Silene alba*) and black medick (*Medicago lupulina*).

These scrapes consist of semi-natural habitat with some wetland features that are linked to the river, and are likely to flood in periods of high river levels.

*Riverside between Runfold Avenue and Bancroft Road:*

East of Runfold Avenue the river runs through amenity grassland scattered with native and ornamental trees and shrubs similar to elsewhere, and is shaded along much of its length by a thick hedgerow on the north bank containing frequent hawthorn and dense stands of blackthorn (W22-Prunus-Rubus scrub). A good range of other woody species is present in the hedgerow including elder, dogwood, field maple and guelder rose (*Viburnum opulus*). Climbers include wild clematis (*Clematis vitalba*), white bryony (*Bryonia dioica*), hop (*Humulus lupulus*) and ivy (*Hedera helix*). The mature trees and hedgerows along the river act to buffer the river and are closely associated with it.

Where the river opens out to the southeast and along the south bank can be found a 1-2m fringe of MG1 vegetation similar to that present elsewhere, species of interest including meadowsweet, meadow cranesbill and water figwort. Of particular interest is a colony of common meadow-rue (*Thalictrum flavum*) on the south bank about halfway along this section.

River Lea at Fallowfield CWS, TL079241 – TL085239 (May & July 1999):

The River Lea is shallow with a gravelly bottom. Aquatic vegetation consists of water starwort (*Callitriche* agg.) with foals watercress (*Apium nodiflorum*), watercress (*Rorippa nasturtium*), branched bur-reed (*Sparganium erectum*), brooklime (*Veronica beccabunga*), water mint (*Mentha aquatica*), reed sweet grass (*Glyceria maxima*), and reed canary grass (*Phalaris arundinacea*) along its margins.

River Lea at Riverside Walk CWS, TL086239 – TL088232 (June 1998):

The River Lea itself contains little aquatic vegetation, though marginal vegetation includes foals watercress (*Apium nodiflorum*), lesser water parsnip (*Berula erecta*), watercress (*Nasturtium officinale*), yellow iris (*Iris pseudacorus*), butterbur (*Petasites hybridus*), water figwort (*Scrophularia auriculata*), floating sweet-grass (*Glyceria fluitans*) and reed canary grass (*Phalaris arundinacea*). The south end in particular contains large stretches choked with bur-reed (*Sparganium* sp.) (S14-Sparganium swamp). A row of six pollarded white willows are present along one section of the river.

River Lea at Wardown Park, TL087230 – TL087223 (July 1999)

The length of the River Lea west of the A6 is shallow and slow-flowing with a gravelly bottom. Little aquatic vegetation is present apart from algae. The northern section has an MG1-Arrhenatherum grassland on its north bank, which has been recently cut but could be seen to contain abundant nettle (*Urtica dioica*) and ground elder (*Aegopodium podagraria*). The south bank was shaded by sycamore, weeping and crack willow, ash (*Fraxinus excelsior*), laburnum (*Laburnum anagyroides*) and elder. The middle section runs between gardens and is frequently shaded by garden trees and shrubs. The southern section has MG1 vegetation with bramble (*Rubus* agg.), rosebay willowherb (*Chamerion angustifolium*) and scattered elders along its banks. A row of sycamore and a single white willow is also present. The river is heavily shaded by sycamores at the junction of the A6 and Bath Road.

Within Wardown Park lakes have been created by damming the River Lea. The lakes contain little aquatic vegetation apart from algae, and their banks are concrete lined. They are mostly shaded by trees at the south end, mainly sycamores (*Acer pseudoplatanus*) with occasional weeping willows (*Salix* sp.) and a pollard of crack willow (*S. fragilis*). The island at the south end is also covered with sycamore woodland containing elder (*Sambucus nigra*) in the understorey. Little grows under the dense shade apart from occasional wood avens (*Geum urbanum*).

The north end of the lake is more open with weeping and white willows (*S. alba*) and occasional ornamental conifers.

The drain along the southeast edge of the park was dry at the time of the survey. No aquatic or marginal vegetation was present, and the bare earth was being colonised by species such as broad-leaved dock (*Rumex obtusifolius*), redshank (*Persicaria maculata*), creeping cinquefoil (*Potentilla reptans*), greater plantain (*Plantago major*), common chickweed (*Stellaria media*) and occasional liverworts. A small amount of a sedge (*Carex* sp.) was also present but was not identifiable.

River Lea from New Bedford Road to Windmill Road, TL087223 - TL099209 (July 1999):

The culverted length of river running down the eastern side of New Bedford Road is sluggish with a silty bottom and contains no aquatic vegetation. It is generally well-shaded by a row of mature trees on its east bank, mostly sycamore (*Acer pseudoplatanus*), horse chestnut (*Aesculus hippocastanum*) and common lime (*Tilia vulgaris*). Abundant elder (*Sambucus nigra*) grows beneath the trees with ivy (*Hedera helix*) and ground elder (*Aegopodium podagraria*) covering the ground. Other tree species present include yew (*Taxus baccata*), holly (*Ilex aquifolium*), hawthorn (*Crataegus monogyna*), and cedar sp. (*Cedrus* sp.). The roadside wall of the culvert has yellow corydalis (*Corydalis lutea*), feverfew (*Tanacetum parthenium*) and buddleia (*Buddleia davidii*) growing on it. A small amount of great willowherb (*Epilobium hirsutum*) and water figwort (*Scrophularia auriculata*) is present opposite The Moor. Near the junction with Mill Street, the river flows alongside the railway embankment covered in woodland dominated by horse chestnut with occasional ash (*Fraxinus excelsior*) and large crack willows (*Salix fragilis*).

The section west of New Bedford Road is also mostly culverted, and generally slow-flowing and unvegetated, though parts of the east bank are open with an MG1-Arrhenatherum vegetation and scattered elders.

The west bank is a wall with occasional feverfew, yellow corydalis and canadian fleabane (*Conyza canadensis*) growing on it. Some sections of the bank have been planted up with ornamental shrubs or are shaded by mature horse chestnuts and limes. Wood avens (*Geum urbanum*) and ivy often carpet the ground on these shadier sections.

The length of river flowing through The Moor is unculverted and faster flowing with a gravelly or stony bottom. Algae and water starwort (*Callitriche* agg.) grow in the river, and thick beds of fools watercress (*Apium nodiflorum*) and watercress (*Rorippa* sp.) are present along much of its length. Also present is occasional reed canary grass (*Phalaris arundinacea*), water mint (*Mentha aquatica*) and redshank (*Persicaria maculata*).

The banks had been recently cut, but consist of an MG1 dominated by nettle (*Urtica dioica*) and docks (*Rumex* sp.). Occasional lesser burdocks (*Arctium minus*) had been left uncut.

The river is culverted through the town centre and flows underground for much of its length. The short culverted section north and south of the railway line at TL088217 has a single male fern (*Dryopteris filix-mas*) and greater celandine (*Chelidonium majus*) growing on its walls, and is shaded by young sycamores and elders.

The other culverted sections have stony bottoms and scattered trees and bushes such as sycamore and buddleia growing on their walls. The section in the car park of The Galaxy Centre (TL090215) has had low shelves constructed along it which contain weed vegetation and occasional reed canary grass.

The stretch of river going underneath the large roundabout south of the town centre (TL097211) is slow flowing with fools watercress and redshank growing along its margins. A row of planted alders (*Alnus* sp.) and willows (*Salix* sp.) grow alongside it. The MG7 grassland around it has been planted with various amenity trees and shrubs, including maple sp. (*Acer* sp.), rowan (*Sorbus aucuparia*) and birch (*Betula* sp.).

The short culverted section southeast of the roundabout is shaded by sycamore, weeping willow (*Salix* sp.) and elder, with wild clematis (*Clematis vitalba*) and ivy-leaved toadflax (*Cymbalaria muralis*) growing on its wall.

The stretch of river in the playing field to the southeast is faster-flowing with watercress, fools watercress, redshank and nettle growing on an artificial shelf. Occasional water mint and great willowherb is also present along its margins.

A row of weeping willows, sycamores, common limes and large Norway maples (*Acer platanoides*) shade its eastern bank and a small amount of pellitory-of-the-wall (*Parietaria judaica*) grows on the wall along its western bank. A double row of mature lime and sycamore are present along the northwest edge of the playing field.

Sticklebacks were seen along most sections of the river, including the culverted sections through the town centre. A grey wagtail was seen along the stream on the east side of New Bedford Road near the railway embankment.

River Lea at Vauxhall Land, TL099209 – TL104202 (September 1999):

The section of river running between the buildings northwest of Osborne Road is mostly culverted and slow flowing with a gravelly bottom. No aquatic vegetation is present and it is heavily shaded by trees, mostly sycamores (*Acer pseudoplatanus*) and mature horse chestnuts (*Aesculus hippocastanum*), with occasional weeping willow (*Salix* sp.) and ash (*Fraxinus excelsior*). Elder (*Sambucus nigra*) and various ornamental shrubs are present beneath the trees, and ivy (*Hedera helix*) carpets the ground in the dense shade. Where a drain enters the river at TL099207 can be found a small amount of marginal vegetation consisting of fools watercress (*Apium nodiflorum*), watercress sp. (*Rorippa* sp.) and redshank (*Persicaria maculata*).

The river through the recreation ground is situated in a deep gully and is more variable in nature with faster flowing stony lengths in places. A species of pondweed (*Potamogeton* sp.) is present in the river near the rifle range, but could not be positively identified. Himalayan balsam (*Impatiens glandulifera*) is common along the margins with nettle (*Urtica dioica*) and butterbur (*Petasites hybridus*) dominating the steep banks. Abundant bracken (*Pteridium aquilinum*) is also present on the banks west of the footbridge near the sports centre.

Various trees and shrubs are also present along the whole of this section, and frequently shade the river. Species include Lombardy poplar (*Populus nigra* var. *italica*), sycamore, elder, wild cherry (*Prunus avium*), goat willow (*Salix caprea*) and rowan (*Sorbus aucuparia*). A group of mature white willow (*Salix alba*) are present at the southeast end near Airport Way. A nearby area of irregularly mown grassland contains a small amount of black knapweed (*Centaurea nigra*).

A hedge of garden privet (*Ligustrum ovalifolium*) runs along the top of both banks of the river for much of its length.

Unsurveyed:

The River Lea CWS continues further downstream, through Luton Hoo Park CWS and East Hyde Riverside CWS before reaching the county border.

Survey July 2012 (River Lea plus its headstreams)

**Note: the following summary also describes land adjacent to the CWS which has been retained in the description to provide valuable context.**

The River Lea through the northern suburbs of the town is generally fast-flowing and shallow, with a gravelly or stony bottom, though in places is slower flowing with a siltier bottom and less aquatic vegetation. Water starwort (*Callitriche* agg.) is frequent with locally frequent curled pondweed (*Potamogeton crispus*). Frequent marginal vegetation is also present, typical of S23-Water margin vegetation, dominated by watercress (*Rorippa nasturtium-aquaticum*) with occasional brooklime (*Veronica beccabunga*), fools watercress (*Apium nodiflorum*) and water forget-me-not (*Myosotis scorpioides*), with stands of reed sweet grass (*Glyceria maxima*), reed canary grass (*Phalaris arundinacea*), branched bur-reed (*Sparganium erectum*), water mint (*Mentha aquatica*) and yellow iris (*Iris pseudacorus*) also locally frequent.

The c. 6ha of land between Bramingham Road and Runfold Avenue known generally as Limbury Meads (TL062243 - TL077242) includes extensive areas of former amenity grassland alongside the River Lea that has been managed under a hay cutting regime for a number of years. The hay cut grassland and unshaded banks of the river now consists of a species poor MG1-Arrhenatherum community dominated by a range of coarse grasses and herbs including false oat grass (*Arrhenatherum elatius*), cocksfoot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), creeping bent (*Agrostis stolonifera*), wall barley (*Hordeum murinum*), rough meadow grass (*Poa trivialis*), smaller catstail and timothy (*Phleum bertolonii* and *P. pratense*), perennial rye grass (*Lolium perenne*), field bindweed (*Convolvulus arvensis*), broad-leaved dock (*Rumex obtusifolius*), hedge mustard (*Sisymbrium officinale*), yarrow (*Achillea millefolium*), common mallow (*Malva sylvestris*), ribwort plantain (*Plantago lanceolata*), creeping cinquefoil (*Potentilla reptans*), white clover (*Trifolium repens*), lesser burdock (*Arctium minus*), ragwort (*Senecio jacobaea*), cow parsley (*Anthriscus sylvestris*), thistles (*Cirsium* sp.), nettle (*Urtica dioica*), black horehound (*Ballota nigra*), creeping buttercup (*Ranunculus repens*), hemlock (*Conium maculatum*), cleavers (*Galium aparine*) and mugwort (*Artemisia vulgaris*) Of more interest are a couple of stands of butterbur (*Petasites hybridus*), locally frequent black knapweed (*Centaurea nigra*), and a patch of meadow cranesbill (*Geranium pratense*) along the western section of the river. Occasional meadow vetchling (*Lathyrus pratensis*) and meadowsweet (*Filipendula ulmaria*) are present to the east of Icknield Way.

Further areas of MG1 grassland to the west of Icknield Way are similar to the other hay cut areas, containing a similar range of grasses with frequent ribwort plantain and white clover, and occasional

creeping cinquefoil, hogweed, creeping buttercup, ragwort, yarrow, black knapweed and field bindweed. Most of the herbs are on the lower ground nearer the river with very few on the more sloping ground. A community orchard has been recently planted on the higher ground.

The grassland along the banks of the river is generally coarser and contains additional species such as Russian comfrey (*Symphytum uplandicum*), hedge bindweed (*Calystegia sepium*), horse radish (*Armoracia rusticana*), great willowherb (*Epilobium hirsutum*), tansy (*Tanacetum vulgare*) and water figwort (*Scrophularia auriculata*).

Three scrapes have been dug next to the river at the point where the Cats Brook flows into the Lea. These contain coarse grassland and ruderal vegetation similar to that elsewhere but have many species more typical of disturbed areas such as frequent common couch (*Elymus repens*). Other species present include red and tall fescue (*Festuca rubra* and *F. arundinacea*), timothy and smaller catstail, reed canary grass, great willowherb, red clover (*Trifolium pratense*), hogweed, horse radish, watercress, ribwort plantain, weld (*Reseda luteola*), tansy, canadian goldenrod (*Solidago canadensis*), teasel (*Dipsacus fullonum*), common wintercress (*Barbarea vulgaris*), creeping buttercup, black knapweed, common toadflax (*Linaria vulgaris*), white campion (*Silene alba*) and black medick (*Medicago lupulina*).

Native and ornamental trees and shrubs and recently-planted saplings are scattered over the grassland and along the river banks, and include white, crack, bay and goat willow (*Salix alba*, *S. fragilis*, *S. pentandra* and *S. caprea*), osier (*Salix viminalis*), elder (*Sambucus nigra*), blackthorn (*Prunus spinosa*), hawthorn (*Crataegus monogyna*), Norway maple and sycamore (*Acer platanoides* and *A. pseudoplatanus*), ash (*Fraxinus excelsior*), cherry sp. (*Prunus* sp.), aspen (*Populus tremula*), common lime (*Tilia vulgaris*), pedunculate oak (*Quercus robur*), beech (*Fagus sylvatica*) and silver birch (*Betula pendula*).

The area west of Cats Brook contains numerous scattered mature hawthorns with occasional field maple (*Acer campestre*), dogwood (*Cornus sanguinea*) and hazel (*Corylus avellana*).

An area of formerly abandoned allotments south of the river at TL064244 are generally now well maintained though still contain patches of bramble (*Rubus fruticosus*) (W24-Rubus Holcus underscrub), scattered *Prunus* sp. and hawthorn scrub and young trees, interspersed in places with rough, weedy grassland containing frequent broad-leaved dock, black medick and smooth hawksbeard.

Between the allotments and Bramingham Road is an area of infrequently-mown grassland intermediate between an MG1 and MG7 community with a block of W24 and W22-*Prunus*-*Rubus* scrub south of this grassland.

Much of the non hay cut land consists of regularly-mown amenity grassland typical of an MG7-*Lolium* community. Perennial rye grass (*Lolium perenne*) is the dominant species with abundant ribwort and greater plantain (*Plantago major*), white clover, daisy (*Bellis perennis*), dandelion (*Taraxacum vulgare*) and yarrow.

East of Runfold Avenue, the river runs through amenity grassland scattered with native and ornamental trees and shrubs similar to elsewhere, and is shaded along much of its length by a thick hedgerow on the north bank containing frequent hawthorn and dense stands of blackthorn. A good range of other woody species is present in the hedgerow including elder, dogwood, field maple and guelder rose (*Viburnum opulus*). Climbers include wild clematis (*Clematis vitalba*), white bryony (*Bryonia dioica*), hop (*Humulus lupulus*) and ivy (*Hedera helix*).

Where the river opens out to the southeast and along the south bank can be found a 1-2m fringe of MG1 vegetation similar to that present elsewhere, species of interest including meadowsweet, meadow cranesbill and water figwort. Of particular interest is a colony of common meadow-rue (*Thalictrum flavum*) on the south bank about halfway along this section.

Two large areas of allotments are present at Limbury and Riddy Lane. A defunct, gappy hedge and trees is present along the south and west edges of Limbury Allotments, containing hawthorn and elder with occasional hazel, blackthorn, and planted maple and birch trees. The lane running along the north side of these allotments has a thick, overgrown hedge along its south side and a defunct hedge along its north side. Woody species present within the hedge include occasional hazel and buckthorn (*Rhamnus catharticus*). Many of the bushes are covered in ivy, other species present including dog rose (*Rosa canina*), white bryony and black bryony (*Tamus communis*).

The hedge along the northern side continues to the east towards Icknield Way and to the west towards Bramingham Road. The eastern hedge is tall and overgrown, with various garden escapes such as feverfew (*Tanacetum parthenium*) and ruderal vegetation. The hedge to the west along the back of the Bramingham Centre consists of a row of scattered hawthorns, elder, elm (*Ulmus* sp.) and occasional hazel. Dwarf elder (*Sambucus ebulus*) has been formerly recorded at TL066244.

Another large area of amenity grassland is present to the south of Riddy Lane with a variety of mostly ornamental trees and shrubs are scattered over the grassland, including poplar sp. (*Populus* sp.), sycamore, cherry, lime, ash, horse chestnut (*Aesculus hippocastanum*), white and weeping willow, hawthorn, buddleia (*Buddleia davidii*), rowan and whitebeam (*Sorbus aucuparia* and *S. aria*). A gappy, overgrown hedge along the western side is dominated by hawthorn and elder.

The southern end of this area is now managed by hay cutting like the areas on Limbury Meads, consisting of coarse MG1 grassland, and is included within the Fallowfield CWS. The river east of Fallowfield to New Bedford Road contains frequent branched bur-reed and has MG1 and ruderal vegetation along its banks similar to that found elsewhere, with a large block of W22-Prunus-Rubus scrub. A small area of MG7 grassland at Midhurst Gardens has been planted with birch and various conifers.

Most of the land along the river between Kingsdown Avenue and Wardown Park is included within the Riverside Walk CWS. The only areas not included consist of the Bide-A-While garden and the former garage site.

Wardown Park at TL088226 consists of c. 20 ha of regularly mown amenity parkland with lakes, created by damming the River Lea. The lakes contain little aquatic vegetation apart from algae, and their banks are concrete lined. They are mostly shaded by trees at the south end, mainly sycamores with occasional weeping willows and a pollard crack willow. The island at the south end is also covered with sycamore woodland containing elder in the understorey. Little grows under the dense shade apart from occasional wood avens (*Geum urbanum*). The north end of the lake is more open with weeping and white willows and occasional ornamental conifers.

The regularly mown amenity grassland consists of an MG7-Lolium community typical of that found elsewhere. Various mature and recently-planted native and ornamental trees and shrubs are scattered over the grassland, including beech, sycamore, common lime, pine sp. (*Pinus* sp.), horse chestnut, Wellingtonia (*Sequoiadendron giganteum*), larch sp. (*Larix* sp.), yew (*Taxus baccata*), false acacia (*Robinia pseudacacia*), birch and cherry laurel (*Prunus laurocerasus*). A number of the trees, especially the beech and horse chestnut, are large specimens. Along the eastern edge of the site is a stand of dense beech with occasional sycamore, horse chestnut and pine, underplanted with yew and holly (*Ilex aquifolium*).

The area around the museum is outside of the floodplain and consists of lawns with flower beds and planted shrubs. To the south are surfaced and grass tennis courts and bowling greens, and a golfing area is present to the west. North of the museum is a large sports field and cricket pitch, bordered on some sides by tall beech hedges, with occasional large beech trees. The roadside bank along the western edge of the cricket pitch and golf area has a row of mature lime and sycamores with a gappy, hawthorn-dominated hedge beneath them.

The River Lea west of New Bedford Road and Wardown Park is shallow and slow-flowing with a gravelly bottom with little aquatic vegetation. The northern section has MG1b grassland (*Urtica* sub-community) on its north bank, which contains contain abundant nettle and ground elder (*Aegopodium podagraria*). The south bank is shaded by sycamore, weeping and crack willow, ash, laburnum (*Laburnum anagyroides*) and elder. The middle section runs between gardens and is frequently shaded by garden trees and shrubs.

The southern section has MG1 vegetation with bramble, rosebay willowherb (*Chamerion angustifolium*) and scattered elder along its banks. A row of sycamore and a single white willow is also present. The river is heavily shaded by sycamores at the junction of the A6 and Bath Road.

South of Wardown Park, the culverted length of river running down the eastern side of New Bedford Road is sluggish with a silty bottom and contains no aquatic vegetation. It is generally well-shaded by a row of mature trees on its east bank, mostly sycamore, horse chestnut and common lime. Abundant elder grows beneath the trees with ivy and ground elder covering the ground. Other tree species

present include yew, holly, hawthorn, and cedar sp. (*Cedrus* sp.). The roadside wall of the culvert supports yellow corydalis (*Corydalis lutea*), feverfew and buddleia.

The section of river along the north side of the railway embankment on the edge of the town centre has been recently culverted due to the construction of Hucklesby Way.

The section west of New Bedford Road is also mostly culverted, and generally slow-flowing and unvegetated, though parts of the east bank are open with MG1 and MG7 grassland alongside it. The west bank consists of a wall with occasional feverfew, yellow corydalis and canadian fleabane (*Conyza canadensis*) growing on it. Some sections of the bank have been planted up with ornamental shrubs or are shaded by mature horse chestnuts and limes. Wood avens and ivy often carpet the ground on these shadier sections.

The length of the river flowing through The Moor is unculverted and faster flowing with a gravelly or stony bottom, and contains water starwort with thick beds of fools watercress and watercress along much of its length and occasional reed canary grass and water mint.

A new scrape has been recently dug at the southern end of this section and contains frequent reed canary grass with occasional great willowherb, water figwort, fool's watercress and purple loosestrife (*Lythrum salicaria*). The banks are dominated by nettle and other ruderal species.

The Moor itself consists of a large area of MG7-Lolium amenity grassland with rows of mature horse chestnut along the south and east sides and a row of common lime and sycamore along the north side. A row of young horse chestnuts runs parallel to the river on its western side.

The river is culverted through the town centre and flows underground for much of its length. The short culverted section north and south of the railway line at TL088217 is shaded by young sycamores and elders. The other culverted sections have stony bottoms and scattered trees and bushes such as sycamore and buddleia growing on their walls.

The stretch of river going underneath the large roundabout south of the town centre (TL097211) is slow flowing with fools watercress and redshank growing along its margins. A row of planted alders (*Alnus* sp.) and willows grow alongside it. The MG7 grassland around it has been planted with various amenity trees and shrubs, including maple sp. (*Acer* sp.), rowan and birch.

The short culverted section southeast of the roundabout is shaded by sycamore, weeping willow and elder, with wild clematis and ivy-leaved toadflax (*Cymbalaria muralis*) growing on its wall.

The stretch of river alongside the playing field to the south of Manor Road is faster-flowing with watercress, fools watercress and nettle growing on an artificial shelf with occasional water mint and great willowherb along its margins. A row of trees at the northwest end of this section have been felled making this section quite open, though large Norway maples (*Acer platanoides*) shade its eastern bank further south. A double row of mature lime and sycamore are present along the northwest edge of the playing field.

The section of river running between the buildings northwest of Osborne Road is mostly culverted and slow flowing with a gravelly bottom. No aquatic vegetation is present and it is heavily shaded by trees, mostly sycamores and mature horse chestnuts with occasional weeping willow and ash. Elder and various ornamental shrubs are present beneath the trees, and ivy carpets the ground in the dense shade. Where a drain enters the river at TL099207 is a small amount of marginal vegetation consisting of fools watercress, watercress and redshank.

The river through the Vauxhall Recreation Ground is situated in a deep gully and is more variable in nature with faster flowing stony lengths in places. Himalayan balsam (*Impatiens glandulifera*) is common along the margins with nettle, bracken (*Pteridium aquilinum*) and butterbur dominating the steep banks.

Various trees and shrubs are also present along the whole of this section, and frequently shade the river. Species include Lombardy poplar (*Populus nigra* var. *italica*), sycamore, elder, wild cherry, goat willow and rowan. A group of mature white willow are present at the southeast end near Airport Way. A hedge of garden privet (*Ligustrum ovalifolium*) runs along the top of both banks of the river for much of its length.



Areas of species poor MG7-Lolium grassland with scattered ornamental trees and shrubs are present either side of the river through the recreation ground with a large playing field to the southwest of the river. A disused cricket pitch to the northeast of the river at TL101205 contains irregularly mown and rabbit grazed grassland, and has some similarities to an MG6 community, dominated by grasses such as cocksfoot, Yorkshire fog, perennial rye grass and red fescue, with frequent yarrow, ribwort plantain, common ragwort and selfheal, and occasional blue fleabane (*Erigeron acer*), thyme-leaved speedwell, creeping and welved thistle, ground ivy, smooth hawksbeard and common mouse-ear. A group of mature trees and scrub in the north corner of the area consists of mature Scots pine (*Pinus sylvestris*) with poplar sp., elder, bramble, buddleia, field maple and birch, with dense nettle and planted trees in the southeast corner.

An area west of the river at TL100205 contains disused tennis courts, two of which are surfaced and surrounded by tall hedges of conifers and garden privet. Areas of concrete contain scattered buddleia and rosebay willowherb.

The land next to the courts consists of species poor MG1 grassland dominated by cocksfoot, red fescue, and Yorkshire fog with frequent common ragwort, germander speedwell, selfheal and ribwort plantain, with occasional timothy, perennial rye grass, false oat grass, the few herbs present including creeping, spear and welved thistle, ragwort, yarrow, autumn hawkbit (*Leontodon autumnalis*), perforate St. Johns wort, dandelion, dovesfoot cranesbill, thyme-leaved speedwell, common mouse-ear creeping cinquefoil and creeping buttercup, with dense patches of W24 bramble scrub, and occasional dog rose and locally frequent sycamore saplings scattered across the grassland.

An area of dense hazel and trees is present on the northwest bank of the A505 to the east of the river.

#### Headstreams:

Four small streams rise from the lower chalk, all shallow with variable flow rates and generally with a gravelly or stony bed. Aquatic plants are rare, with the main marginal species consisting of fool's watercress, sweet grass sp. and locally dominant reed canary grass. Where unshaded, the steep banks generally support MG1 grassland and ruderal vegetation similar to that along the River Lea. Some sections are shaded by overgrown hedgerows, scrub and mature trees, often covered in ivy.

**Lewsey Brook** (TL043233-TL053240) – The source of the brook consists of a wide deep pool with no aquatic vegetation that flows from a concrete culvert near the western edge of Lewsey Park.

The first section of the brook is very shallow and narrow with a gravelly bottom, and meanders along its bed between drier, raised areas with small pools of still water in places. Aquatic vegetation is absent, with the main marginal species consisting of occasional fool's watercress and reed canary grass. The banks support rough grassland and ruderal vegetation consisting mostly of an OV24-Urtica-Galium community dominated by nettle and cleavers with hogweed, broad-leaved dock, false oat grass, cocksfoot, creeping bent, hairy sedge (*Carex hirta*) and wall barley.

AT TL046234 is a triangular shaped scrape now mostly dominated by nettle dominated ruderal vegetation at its western end, with frequent hedge bindweed and occasional great willowherb and broad-leaved dock. Great willowherb (OV26-Epilobium vegetation) dominates the eastern end with frequent nettle and occasional yellow iris, creeping buttercup, sweet grass sp., redshank and reedmace (*Typha latifolia*). A number of semi-mature white and crack willows are present, with a mature willow and an ivy-coated ash growing on the bank at the south east corner of the area.

East of the footbridge, the brook is shaded by mature horse chestnuts and sycamores, and an old hedgeline containing a range of woody species including abundant hazel, large, ivy-covered field maples and hawthorns, and occasional elder, elm and sycamore. The steep shaded chalk banks support occasional male fern (*Dryopteris filix-mas*), hedge woundwort, wood avens and herb robert. The brook is still very shallow but wider, with shallow, clear, slow flowing water and a stony bed.

East of where the hedge ends at TL048235 the grassland on the banks is more diverse, containing frequent meadow cranesbill and occasional black knapweed, perforate St John's wort, yarrow, pencilled cranesbill (*Geranium versicolor*) and meadow vetchling with scattered dog rose, hawthorn, elder, goat and grey willow, ash saplings and staghorn sumach (*Rhus typhina*). Small riffles are present in the brook with occasional deeper pools, and the more open sections support occasional fool's watercress, creeping buttercup, sweet grass sp., reed canary grass, water figwort and great willowherb.

The 100m section west of the motorway is shaded by an old hedgerow on the northern bank consisting of a row of large ivy-covered hawthorns with occasional elder, hazel, grey willow and sycamore, with

nettle dominant in the field layer. Sycamores also shade the brook just before it leaves the park and goes under the motorway.

Much of the grassland in Lewsey Park alongside the brook consists of a regularly mown species poor MG7-Lolium community dominated by perennial rye grass with white clover, dandelion, greater plantain and creeping buttercup, though an area of hay cut grassland at the eastern end of the park supports a range of grassland plants more typical of MG6-Lolium-Cynosurus or MG5-Cynourus-Centaurea communities, including locally frequent birdsfoot trefoil (*Lotus corniculatus*), lady's bedstraw (*Galium verum*), autumn hawkbit (*Leontodon autumnalis*), selfheal and black knapweed with occasional common sorrel (*Rumex acetosa*) red clover (*Trifolium pratense*) and field madder (*Sherardia arvensis*).

Areas of more diverse calcareous grassland are present on the steep banks to the north and east of the tennis courts. The bank to the east of the tennis court is generally left uncut and resembles an MG1d *Pastinaca sativa* sub community, with frequent false oat grass, cocksfoot, red fescue, creeping bent, soft brome and smaller catstail. It supports a number of neutral and calcareous grassland plants including locally abundant hairy violet (*Viola hirta*), and occasional black and greater knapweed (*Centaurea scabiosa*), field scabious (*Knautia arvensis*), wild basil (*Clinopodium vulgare*), perforate St. John's wort, agrimony, burnet saxifrage (*Pimpinella saxifraga*), bladder campion (*Silene vulgaris*), wild mignonette (*Reseda lutea*), selfheal, lady's bedstraw, creeping cinquefoil, ground ivy, field bindweed and yarrow. The north bank of the tennis courts is kept well mown but still supports a number of neutral and calcareous grassland plants including locally frequent birdsfoot trefoil and lady's bedstraw and small amounts of black knapweed, wild basil, salad burnet (*Sanguisorba minor*), hoary plantain (*Plantago media*), burnet saxifrage, white campion, selfheal, field madder, blue fleabane, red clover, downy oat grass (*Helictotrichon pubescens*) and common sorrel.

The parkland south of the brook contains numerous mature parkland trees, mostly horse chestnut with common lime (*Tilia vulgaris*), beech, ash, sycamore, yew and turkey oak (*Quercus cerris*). Many of the mature horse chestnuts in the southwest of the park have been felled in recent years though young trees have been replanted nearby.

The brook is shaded in the school grounds east of the motorway by stands of mature beech and other trees, with another section of old hedgerow containing occasional hazel shading it to the east of Strangers Way.

The northeast section running through the amenity grassland of The Mayne Space is unshaded with only scattered trees and bushes, and MG1 and ruderal vegetation dominating the banks, with scattered stands of reed canary grass in the margins.

The amenity grassland on The Mayne Space is mostly typical species poor MG7 grassland with abundant white clover, daisy, dandelion and greater and ribwort plantain, though black knapweed is frequent in an area of hay cut grassland in the west of the area.

After it leaves The Mayne Space the brook is culverted under the housing estates until it emerges in Leagrave Park.

#### **Houghton Brook** (TL046243-TL060244)

Where it emerges from under the motorway the brook contains water starwort, fool's watercress and curled pondweed. The brook is slow-flowing with typical MG1 grassland on the banks, with a hawthorn hedge along the top of the north bank.

For much of its length west of Montague Avenue the brook is overgrown with reed canary grass and reed sweet grass, with ruderal vegetation and scattered scrub on the banks.

The last 150m west of Montague Avenue is heavily shaded by overgrown hawthorn dominated hedgerows, ash and sycamore along the top of the steep banks, with the bed of the brook wide and stony.

East of Montague Avenue the brook is faster flowing and more open with scattered ash and elder on the banks. At TL054244 are a row of five pollarded white and crack willows with guelder rose (*Viburnum opulus*) and grey willow to the east.

Further east the brook is heavily shaded by the mature horse chestnuts and sycamores of Brocket Court Spinney (see separate report).

The canalised section on Leagrave Common is deep and slow-flowing and contains curled pondweed and water starwort sp., with coarse ruderal vegetation on the banks dominated by mugwort, hemlock and great willowherb.

**Cats Brook** (TL075247-TL073243)

Shallow and fast flowing in places with a stony bottom, the brook is situated in a deep gully with MG1 grassland, ruderal vegetation and bramble scrub on its banks containing occasional perforate St. Johns wort and black knapweed. The southeast bank contains a defunct hedgerow with mature trees, mostly hawthorn and elm with occasional hazel, hornbeam, blackthorn, buckthorn, beech and pedunculate oak (*Quercus robur*).

A high bank along its northwest side supports further MG1 grassland and scattered bramble and other scrub.

At its junction with the River Lea the brook levels out with marginal vegetation including brooklime, celery-leaved buttercup, watercress and red canary grass.

**Stream south of Cowslip Meadow** - the small stream is mostly heavily shaded, slow-flowing or stagnant with no aquatic vegetation in the shaded section but marginal species such as foals watercress, bur-reed, reedmace, great willowherb, watercress and water mint where more open such as at the north end.

A number of weeping willows are present along the stream. The grounds of the sub-station support coarse, weedy grassland. Scattered scrub and young horse chestnuts are present, and a tall hawthorn hedge with mature ash and white willows runs along the western side.

A beech hedge runs along the eastern side with a verge of MG7 grassland along the A6.

At the north end adjacent to Cowslip Meadow is a small area of species-poor MG1 grassland containing species such as cow parsley, hogweed, hemlock, creeping buttercup and cut-leaved cranesbill (*Geranium dissectum*), and mature trees of beech and hornbeam.

CWS boundary extension and clarifications January 2013

At its meeting on 17<sup>th</sup> January 2013 the CWS Panel assessed Lewsey Brook, its banks and scrapes, against the botanical criteria. They contain sufficient indicators (six) but not all as good populations (three). However the case for CWS was strengthened by its structural diversity, including shallows with gravelly bottom meandering between small pools of still water, scrapes, variations in width and depth, riffles and deeper pools, shady and open areas, and variations in types and quantity aquatic vegetation present. It was therefore decided to recognize Lewsey Brook as a CWS and include it in River Lea CWS.

Sections of the River Lea floodplain through Limbury where semi-natural habitats are adjacent to the river were accepted as part of the CWS as proposed in the report.

The slope alongside Catbrook was added to the River Lea CWS, but not to the extent proposed in the report.

The main channel downstream (south) of Wardown park and west of the A6, until it reaches the railway, were added to the CWS.

The CWS boundary therefore now includes three headstreams (Lewsey Brook, Houghton Brook and Cat's Brook, but not the stream south of Cowslip Meadow CWS) and adjacent semi-natural habitats within the floodplain such as semi-natural grassland (including former amenity grassland now managed by hay cutting), scrub, hedgerows, mature trees, woodland and wetland vegetation. The boundary of the floodplain has been taken as land within the first contours either side of the river, though in places the CWS boundary extends beyond this where the habitat feature also extends, to create sensible boundaries and management units.

Where the river has been grossly modified through canalisation and culverting, such as through much of the town centre, the river has not been recognized as a CWS. The CWS boundary is as drawn in GIS.

