



Local Wildlife Sites Project: Citation for Purnell's Brook Woodland and Meadow

Site Name: Purnell's Brook Woodland and Meadow	Site Ref: SP17Y3	Grid Ref: SP182779
Local Authority Area: Solihull MBC		Part Resurvey
Ownership: SMBC/Private	Area: 7.08 ha	Management: B (wood) D (meadow)
1. Summary of importance. A relatively species diverse secondary woodland and meadow situated on the northern edge of Knowle. A part resurvey, the woodland was originally designated in 2007 and is also known as Wychwood or Wychwood Avenue Wood.		
2. Position in the landscape and access. The LWS is situated on either side of Purnell's Brook on the east side of Wychwood Avenue, Copt Heath, and about 0.7km north of the centre of Knowle. The site is bounded on the west and south-west sides by suburban roads, by grass fields to the north-west, by the Grand Union Canal (with arable fields beyond) to the north, and by large arable fields to the east. A small disused nursery (part of the pLWS) was present immediately to the south until 2017 but was in the process of being cleared at the time of survey. This part of Solihull has rather few designated LWSs, with the closest ones being Half Moon Coppice 1.5km west, Woodland adjacent to Blythewood Close 1.25km north-west, Henwood Tip and Henwood Meadow 1.5km north, Jobs Close LNR 800m south-west and Knowle Wet Meadow 700m south-south-east. In addition, the Grand Union Canal (a pending LWS) abuts the site on the north side and the River Blythe SSSI is located 500m to the north-east. There is full public access to the SMBC owned woodland on the west side of Purnell's Brook, but there are relatively few paths. The land to the east of the brook is private, but a public footpath from Wychwood Avenue crosses the former nursery to the south of the meadow, while there is also an apparently regularly used unofficial path at the north end which runs parallel with the canal in the direction of Hampton Road.		
3. Land Use History. The new extended LWS covers the site formerly occupied by the whole or portions of a total of seven pasture fields which were once situated in a very rural area between the village of Knowle and the tiny hamlet of Copt Heath, the latter within the extensive rural parish of Solihull. Purnell's Brook (named from a former land-owner) marked the boundary between the two parishes. The largest field lay at the north end of the site and forms the majority of what later became the wood. Three more of these were very narrow and would have been subject to flooding as they flanked the low-lying brook on both sides. Due to this factor these fields may well have been shut up during the summer for hay production. In 1800 The Birmingham and Warwick Canal (now the Grand Union) was opened and this forms the northern boundary to the site. Clay dug during the excavation was tipped in the adjacent north field and was later gradually removed and taken by barge 800m up the canal to feed some brick kilns built near Copt Heath Wharf. When this source was exhausted, new clay was excavated in the western section of the north field, resulting in a large pit. By 1885 (Six Inch OS map) quarrying appears to have ceased and the site put back to pasture. This pit and the cut down remnants of the spoil tip alongside the canal can still be seen in the northern section of the wood. In about 1900 a small pumping station was built by the canal		



company within an enclosure in the far north-west corner of the north field, just behind the former clay pit. This pumping station seems to have been demolished in the late 1950's, but the imprint of the enclosure can still be seen. With the increased need for housing during the 1930's a new estate at Copt Heath was planned and work began on laying it out, including a dirt track laid out across the fields from the Warwick Road parallel with the brook, and ending at the north field. The plan was however aborted by the war and was not recommenced until the late 1950's when Wychwood Avenue was laid out along the line of this track, but at the north end was diverted to the north-west, leaving a 100m stretch of the pre-war embanked roadway surviving within the present wood. Another housing estate was built at this time immediately to the south of the LWS on the site of the pre-war Knowle Sewage Farm, with a plant nursery occupying the land to the north, east of the brook. This nursery closed in about 2004 and the land became redundant. The wood had its origins probably in or just before World War II when the clay pit was allowed to gradually scrub over. By the late 1950's scrub woodland had spread around the surrounding environs of the clay pit, along the north side of the north field and then down the entire length of the west bank of the brook, occupying the wetter parts of the floodplain. As grazing gradually ceased elsewhere, the rest of the later wood scrubbed over from the 1970's to 1990's, the last area to do so being the central and southern part of the north field. On the east side of the brook the LWS meadow had lost most of its eastern hedgerow by 1960 and had become part of the neighbouring cattle pasture but remained wet and retained much of its diverse flood meadow flora. Since at least the early 1990's most of these fields have been converted to arable, although the old flood meadow was re-fenced and left unmanaged. A narrow section of the meadow to the south was also fenced at this time, before the rest was ploughed, but is even more overgrown. To the south of this, the former disused nursery (part of the original pLWS) was cleared in 2017, although a narrow belt of trees and scrub alongside the brook was left intact and has been included within the new LWS. At present the wood is popular with local residents as a quiet recreational area, with direct access off Wychwood Avenue onto several rather low-key pathways. Part of the wood along the brook corridor is managed by SMBC through the Streamside Trust, who have put up an information board at the entrance.

4. Topography and Geology.

The topography is gently rolling, with the brook occupying a narrow floodplain at around 110m ASL. To the west the land gently ascends to about 120m ASL around the area of the clay pit. Purnell's Brook itself rises about 1.5km to the south-south-west at Tilehouse Green (Knowle) and after passing through Jobs Close LNR/LWS enters the present LWS at the southern end. It leaves the site at the north end, passing under the Grand Union Canal, and then entering the River Blythe SSSI at the site of the historic Grimshaw 'Castle' 600m to the north-east. The LWS is situated within an unusually isolated patch of calcareous Lower Lias Clay. The underlying geology of the surrounding landscape mainly comprises acidic soils associated with the Mercia Mudstone formation, with glacial sands and gravels capping the higher ground.

5. Habitat Description.

For descriptive purposes the new LWS has been divided into two parts: 1) Purnell's Brook Woodland and 2) Purnell's Brook Meadow. The former covers the original LWS to the west of the brook, while the latter covers the new extension to the east of the brook, including both grassland and riparian woodland.



1) Purnell's Brook Woodland

The majority of this part of the LWS comprises secondary woodland, with a canopy dominated by Ash, but with Alder dominating the wet woodland along the brook corridor. The only other prominent tree is Aspen, which is locally frequent around the disused clay pit and in the former pump house enclosure. Some of these trees on the south side of the pit have recently fallen due to storm damage. Scattered mature Field Maples are also present on the banks of the pit and by the brook, where Crack Willow is occasional. Most of the trees are not more than 60 years old, while the Ash trees on either side of the 1930's track are younger and range from 30-45 years old. Some older hedge trees do survive along former field boundaries. While most of these are also Ash, a few mature Pedunculate Oaks occur on the LWS boundary by the clay pit, while several Small-leaved Limes are of note. In many parts of the wood the canopy is still relatively open and here the tall shrub layer fills the spaces between. It also dominates much of the old north field, which only gradually scrubbed over during the 1980's and 90's, and trees are largely absent here. The last part of this field to scrub over was the south side and two small clearings are still present here, dominated by Common Nettle and some Bramble. The shrub layer is mostly dominated by Hawthorn, which is locally abundant, while regenerating Ash scrub, Grey Sallow, Elder and locally Blackthorn are all frequent. Shrubs of more occasional occurrence include Field Maple, Sycamore, Hazel (on old field boundaries), Holly, Apple and Field Rose, with rare Crab Apple, Goat Sallow and Guelder-rose. Much of the ground flora is dominated by either Ivy or Common Nettle, with locally abundant Cleavers, Bramble and the woodland moss *Eurhynchium praelongum*, but there are also localised areas of bare ground where light penetration is restricted. Some common shade-loving herbs such as Cow Parsley, Herb Robert, Herb Bennet, Ground-ivy and Wood Dock are also frequent to locally abundant. Species diversity is much higher in the damper Alder woodland along the brook and on the old hedge banks and pit banks elsewhere. Species in these areas include abundant Herb Robert, Herb Bennet, Ground-ivy and Dog's Mercury, with frequent Broad Buckler and Common Male-ferns, Bluebell, Rough Meadow-grass, Wood Dock and Red Campion, and occasional Garlic Mustard, Cuckoo Pint, False and Hairy Brome, Bearded Couch, Tutsan, Yellow Archangel, Greater Stitchwort and Thyme-leaved Speedwell on the banks. Wood Anemone is reported to be locally frequent on these banks in spring, including around the old clay pit. In the wetter Alder woodland by the brook there is frequent to locally abundant Wild Angelica, Wavy Bittercress, Pendulous Sedge, Meadowsweet, Hogweed, Enchanter's Nightshade, Creeping Buttercup and Brooklime, while Ramsons, Moschatel and Lesser Celandine are reported to be locally abundant in spring. Other plants found in this area include occasional to very locally frequent Bugle, Lady Fern, Remote Sedge, Tufted Hair-grass, Scaly Male-fern, Giant Fescue, Soft Rush, Gipsywort, Wood Millet, Three-nerved Sandwort, Hartstongue, Redcurrant, Raspberry, Bittersweet and Wood Speedwell, with rare Wood Sedge, Great Horsetail, and both Hard and Soft Shield-ferns. The bottom of the clay pit is also quite wet in places and contains frequent Pendulous and Remote Sedges, patches of locally abundant Lesser Pond-sedge, Wavy Bittercress and Creeping Buttercup, and also locally frequent Common Marsh-bedstraw, Gipsywort, Redcurrant and Brooklime.

At the southern end of the wood a narrow corridor of land projects south to the boundary of the Arden Vale Road housing estate, close to the end of Alveston Grove, although there is no access. The eastern section of this corridor alongside the brook is covered with Alder wood (as above) but the rest consists of damp roughly mown semi-improved to improved grassland dominated apparently by meadow-grasses, with also abundant Common Chickweed, Broad-leaved Dock, Creeping Buttercup, White Clover and Common Nettle. A long margin of Pendulous Sedge forms



the border to the Wychwood Avenue gardens, while Wild Angelica, Great Willowherb, Meadowsweet, and both Soft and Hard Rushes are frequent in the more tussocky areas. Other species here include locally frequent Crested Dogstail, Red Fescue, Common Birdsfoot-trefoil and Meadow Vetchling, with occasional Meadow Buttercup, Red Clover and rare Wild Carrot and Purple Loosestrife. This mown corridor extends a little way into the woodland and retains some of the vegetation that formerly occurred in the original flood meadow. Garden escapes such as Italian Arum, Flowering Nutmeg, White Comfrey, Snowberry, Coralberry and Lesser Periwinkle are also occasional in this area due to the dumping of green waste from adjoining gardens.

2) Purnell's Brook Meadow

This long narrow meadow occupies a gentle slope leading down to the brook and has long been unmanaged. It was formerly part of a corridor of relatively unimproved flood meadows along the brook which in the 1950's and 60's formerly held a rich flora (see *A Computer-mapped Flora*, 1971) and as late as 1999 still contained Betony and Devilsbit Scabious (HBA Target Notes), but is gradually becoming more degraded with time. Originally it was probably an example of the now endangered MG4 Meadow Foxtail-Great Burnet NVC community⁴. It is still very damp in the northern half of the meadow where large stands of Meadowsweet are locally dominant and here grasses are subordinate to forbs. In the drier parts of the meadow forbs become scarce and here the sward is dominated by rank False Oat-grass. Other grasses present include locally abundant Yorkshire Fog, frequent Common Bent, Creeping Bent, Cocksfoot, Tufted Hair-grass (much less dominant in the wetter areas than it was in 1999), Common Couch and Red Fescue, with rare to occasional Tall Fescue, Reed Canary-grass and Timothy. Giant Fescue and Pendulous Sedge are locally frequent in shadier areas near the brook where an expanding corridor of Alder woodland, scrub and Bramble is present. Most of the forb diversity is present in the damp section of the meadow, and there is a large and expanding area of dominant Lesser Pond-sedge in the grassland at the north end. Other forbs include abundant Meadow Vetchling, Creeping Buttercup and Common Sorrel, with frequent Wild Angelica, Hairy Sedge, Soft, Hard and Jointed Rushes, Creeping Cinquefoil, Curled Dock and Red Champion. Plants of occasional to very locally frequent occurrence include Marsh Thistle, Great Willowherb, Common Marsh-bedstraw, Hogweed, Ragged Robin, Common Tormentil, Meadow Buttercup, Great Burnet and Tufted Vetch, with rare Brown Sedge, Oval Sedge, Square-stalked St. John's-wort and Clustered Dock. The fenced outer boundaries still have frequent mature Ash and Pedunculate Oak trees in places and there are patches of mature Hawthorn scrub at the north end, particularly on the bank below the canal. Elder is also frequent in this scrub, along with occasional Field Maple.

The narrow belt of Alder woodland along the borders of the brook contains a similar flora to that on the west side (see above), although it tends to be scrubbier and more open, with areas of tall Meadowsweet and Bramble. There is locally frequent Hawthorn, Blackthorn and Grey Sallow in the shrub layer, together with occasional Crack Willow, Ash and rare Oak and Small-leaved Lime in the canopy. At the far southern end it widens out and the ground below becomes waterlogged on either side of the public footpath, which here is carried over via a new boardwalk. This marshy area is species-diverse and contains locally abundant Common Marsh-bedstraw, Common Water-pepper, Creeping Buttercup, Bog Stitchwort and Brooklime, together with frequent Wavy Bittercress and both Soft and Hard Rushes. There is also occasional to very locally frequent Water Forgetmenot, Pale Persicaria, Bittersweet and Wood Speedwell.

6. Other Faunal and Floral groups.

This is a good site for woodland birds and during the two visits sightings included Sparrowhawk,



Local Wildlife Sites Project: Citation for Purnell's Brook Woodland and Meadow

Buzzard, Green and Great Spotted Woodpeckers, Song Thrush, Redwing, Dunnock, Blackcap, Chiffchaff, Goldcrest, Long-tailed and Coal Tits, Nuthatch, Treecreeper, Jay, Jackdaw, Chaffinch, Siskin and Bullfinch. In addition, Grey Heron, Kingfisher and Grey Wagtail were feeding along the brook. Insects noted included Speckled Wood, Comma, Red Admiral and Small White butterflies, and Southern Hawker dragonflies. There is also a badger record from the nineties.

A good range of fungi and mosses are present in the woodland, although a survey wasn't attempted.

7. Phase 1 Habitats present (with Phase 1 codes in brackets)*

Broad-leaved semi-natural woodland (A111), Dense scrub (A21), Improved grassland (B4), Marsh and marshy grassland (B5), Poor semi-improved grassland (B6), Tall ruderal (C31), Running water (G2).

*Please refer to Appendix I Habitat Map

8. Evaluation against the criteria³

Habitat criteria applied: Woodland and scrub

SCIENTIFIC CRITERIA	Elements of the criteria applying to the site						COMMUNITY CRITERIA	Elements of the criteria applying to the site				
	1	2	3	4	5	6		1	2	3	4	5
Diversity		√	√	√	√		Physical & Visual Access	√	√			
Rarity	√						Educational Value			√		√
Size	√						Community & Amenity Value	√	√	√		
Naturalness	√		√	√	√	√	Aesthetic Appeal & Landscape		√	√	√	
Fragility		√					Geographical Position		√			
Typicalness		√					Recorded History					
Ecological Position		√	√				Continuity of Land Use					
Significant Populations												
Potential Value	√											



Local Wildlife Sites Project: Citation for Purnell's Brook Woodland and Meadow

Habitat criteria applied: Grassland and marsh

SCIENTIFIC CRITERIA	Elements of the criteria applying to the site						COMMUNITY CRITERIA	Elements of the criteria applying to the site				
	1	2	3	4	5	6		1	2	3	4	5
Diversity	√	√	√				Physical & Visual Access		√			
Rarity	√	√					Educational Value					
Size							Community & Amenity Value					
Naturalness	√						Aesthetic Appeal & Landscape	√	√			
Fragility	√	√	√				Geographical Position		√			
Typicalness							Recorded History					
Ecological Position		√	√				Continuity of Land Use	√				
Significant Populations												
Potential Value	√	√										

9. Why this site qualifies as a Local Wildlife Site: summary of assessment

The newly extended Purnell's Brook Woodland and Meadow LWS qualifies as a Local Wildlife Site with 16 scientific and 11 community criteria applying for the woodland and 13 and five for the meadow. The most important criteria are considered to be the following.

Diversity

Both major habitats support an above average number of vascular plant species, with 149 species found during the survey despite the late date. Another 15 species were found during the previous survey of the woodland in May 2006. Although the woodland is secondary and of relatively recent origin, it contains nine species usually thought characteristic of ancient woodland in Warwickshire (Moschatel, Wood Anemone, Remote Sedge, old Hazel coppice, Yellow Archangel, Crab Apple, Wood Millet, Small-leaved Lime and Wood Speedwell). The probable explanation is that they survived on enclosure hedge banks and on the banks of the brook from former ancient coppice woodland cleared from the site in the late 18th century. The meadow, although much degraded through neglect, still includes several old flood meadow plants such as Great Burnet, Ragged Robin, Brown Sedge and Oval Sedge, and had Betony and Devilsbit Scabious until at least 1999. The whole site provides a good variety of habitats and sub-habitats, ranging from mature Ash woodland, through wet Alder carr and scrub woodland, to tall ruderal and marshy grassland. The only permanent water body is the brook.

Rarity

Although secondary in nature, the wet riparian Alder woodland is a scarce and declining habitat in



Local Wildlife Sites Project: Citation for Purnell's Brook Woodland and Meadow

the Warwickshire sub-region, as is old flood meadow, although the latter is in a degraded state. These habitats contain at least ten county notable species¹ (Moschatel, Brown Sedge, Great Horsetail, Tutsan, Yellow Archangel, Ragged Robin, Wood Millet, Bog Stitchwort, Small-leaved Lime and Wood Speedwell) as well as several others such as Oval Sedge and Great Burnet which are seriously declining due to the continued loss of old unimproved grassland. In addition, Ragged Robin is considered Vulnerable in England⁶.

Fragility

The meadow is seriously threatened through lack of management, which has led to the spread of tussock grassland, tall ruderal such as Meadowsweet, and scrub. The wood is potentially vulnerable to increased recreation.

Ecological Position

Both sides of the brook form a compact block of varied semi-natural habitats, which although now rather isolated from other major areas of semi-natural habitat, nevertheless still have good connectivity via Purnell's Brook and the Grand Union Canal; which are both good wildlife corridors.

Potential Value

There is good potential to increase the wildlife value of the wood by thinning out some of the young Ash woodland and adding young Pedunculate Oak to provide more variety. Parts of the denser scrub woodland could also be coppiced. The clay pit could be enhanced by excavating a permanent pool in part of the bottom and allowing it to vegetate naturally. The value and species diversity of the meadow would be considerably increased if it was restored to an MG4 flood meadow⁴, mown once in late summer.

Physical and Visual Access

There is open access to the woodland area via a public footpath in Wychwood Avenue. The whole site is otherwise largely hidden by built development and topography, although it can be seen from the canal towpath.

Community and Amenity Value

The woodland is highly valued by the local community as a quiet site for recreation and wildlife viewing. In the past it has been somewhat abused by tipping and other antisocial activities, although this appears to have decreased with more direct involvement by local people.

Continuity of Land Use

The meadow is a very long-established flood meadow, although it has not been managed since at least the 1990's.



Local Wildlife Sites Project: Citation for Purnell's Brook Woodland and Meadow

Sources of information:		Ecosite No: 179/17	
Survey Details:			
Date:	Survey Type:	Surveyors:	Location of records
09/10/2017	Phase 2 (woodland)	J J Bowley	HBA
14/09/2017	Phase 2 (meadow)	J J Bowley	HBA
16/05/2006	Phase 2 (woodland)	D Cole	HBA
16/06/2011	Phase 1	O Powell	HBA
03/02/1999	Phase 1	I Tanner	HBA
Any Other Information:			
The part of the wood not under SMBC ownership has no known registered owner. The council are presently attempting to acquire this land and will then begin to manage it.			
Management			
<u>Category</u>	<u>Current management</u>	<u>Management recommendation</u>	
A	Good	Maintain current regime	
B	Medium (wood)	Enhance current regime	
C	Minimal	Enhance as necessary	
D	Inappropriate (meadow)	Change management regime	
Recommendations:			
<ol style="list-style-type: none"> 1) Introduce limited rotational coppicing to parts of the denser scrub woodland, where there is little light penetration. 2) Thin out the denser young Ash woodland and plant Pedunculate Oak in the openings. 3) Clear scrub from the route of the circular path to create a grassy ride. 4) Create a permanent pool in the bottom of the clay pit, reached by steps. 5) Put up bird and bat boxes. 6) Restore the meadow to an MG4 hay meadow and replant the east-facing boundary hedge. 7) Remove alien invasive species e.g. Snowberry. 			
Completed by: J J Bowley		Date: 12/01/2018	
Passed by Sites Selection Panel: Yes / No / Deferred (Further survey required)			
Signed by the Chair:		Date:	
On behalf of the LWS panel.			



References

1. Falk S. J. (2009). *Warwickshire's Wildflowers*. Studley.
2. JNCC. (1993 repr.). *Handbook for Phase 1 habitat survey: a technique for environmental audit*. Peterborough: JNCC.
3. Local Wildlife Sites Project. (2015). *The Green Book: Guidance for the selection of Local Wildlife Sites in Warwickshire, Coventry and Solihull*. Warwick: Habitat Biodiversity Audit office.
4. Rodwell J. S. et al (2003 repr.) *British Plant Communities*. Cambridge: Cambridge University Press.
5. RSPB/BTO. (2015). *BoCCA: Birds of Conservation Concern 4*. RSPB/BTO.
6. Stroh et al. (2014) *Red Data List of Vascular Plants in England*. Peterborough: JNCC.



Local Wildlife Sites Project: Citation for Purnell's Brook Woodland and Meadow

Appendix 1

