

Worcestershire’s wet heathland, has it all gone?

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The thing that characterises heathland is the collection of plants and animals that choose to live in the dry slightly acid grazed terrain. Heath plants give the overall character of a site but it is the specialist species found on heathland where permanent to semi-permanent water is present that makes wet heathland unique. This article examines the occurrence of wetland areas in the Worcestershire block of heathland and takes a close look at Hartlebury Common.

The UK has an important 20% of international heathland. The largest proportion of UK lowland heath (55% -58,000 ha) is found in England. According to the Worcestershire Habitat Inventory (2008) there were about 120 ha of lowland heath and this could rise to over 200 ha with the acquisition of farmland that could be returned to heathland. In Worcestershire all the heathland is to be found in a triangle between the Wyre Forest towns of Bewdley, Kidderminster and Stourport-on-Severn. This is, of course, a remnant of a former larger area that corresponds to the outcrop of Triassic sandstone that extends from Ombersley in to Staffordshire, Shropshire and Cheshire. The sites making up this block are shown in table 01. Note that the sites at the bottom of the table are the newly acquired sites for restoration (Blackstone Farm and Dropping Well Farm).

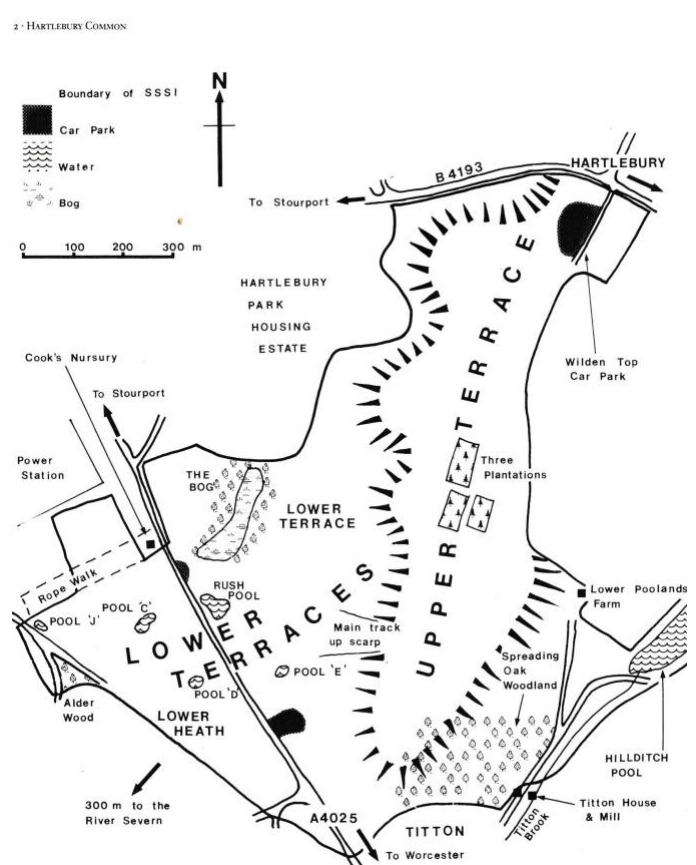
Site	Designations	Ownership	Area of heathland
Hartlebury Common	SSSI/LWS/ Local Nature Reserve /Common Land	Worcestershire County Council	84ha
Devil’s Spittleful and Rifle Range	SSSI/LWS	Worcestershire Wildlife Trust/ Wyre Forest District Council	50 ha
Pound Green Heath	SSSI/Nature Reserve	Worcestershire Wildlife Trust	18.7 ha
Lickey Hills Country Park	LWS/Country Park	Birmingham City Council	6.3 ha
Vicarage Farm Heath	LWS	Wyre Forest District Council	4.5 ha
Kingsford Forest Park	SSSI/LWS/ Local Nature Reserve	National Trust	4.5 ha
Haberley Valley	LWS/ LNR	Wyre Forest District Council	2.7 ha
Spinneyfields	Nature Reserve	Worcestershire Wildlife Trust	0.5 ha
Total			171.2ha
Blackstone Farm (under restoration)	Nature Reserve/LWS	Worcestershire Wildlife Trust	19 ha (when fully restored)
Droppingwell Farm	Possible New NR	Worcestershire Wildlife Trust	38 ha
			228

Table 1. The sites in the Worcestershire Heathland block.

Wet heath occurs where groundwater reaches the surface and this is usually in valley bottoms or where springs emerge. Obstruction to drainage is another cause of wet areas and these tend to be very few in number in areas that have had any kind of agricultural production. For a wetland to be attractive to plants and animals, the ideal balance is to have some areas which stay wet all year developing as a marsh or bog with marginal areas that are seasonally wet. The problem is that the West Midlands block of sandstones that give rise to heathland is a very important source of public water supply and this has been fully exploited since Victorian times. Consequently the water table, under normal conditions of recharge is suppressed so that it rarely reaches the surface nowadays. A glance around the heathland block near Kidderminster shows few places where water collects naturally and any water bodies tend to be artificial. One site that has had a historically wet area is Hartlebury Common (Map 1). This is an interesting site because it has the unique combination of river terraces lying on a sandstone ridge, on top of which lie windblown sands. The site has a long history of interaction with man who has used the area for grazing, rabbit warrens, rope making and even as a rifle range which was laid out in the unusual inland sand dunes.

Historically there have been 6-7 old pond locations at Hartlebury, but only two of those have anything like permanent water, the Rush Pool and the Bog, the latter is often called Worcestershire’s only Bog (01). The problem is that for much of the time both water features can go dry, sometimes for extended periods. Most aquatic creatures and plants cannot withstand long periods of dry conditions.

There is another wet area to the east of the common called Hillditch Pool but this is an onstream pool fed by Hartlebury Brook so it is subtly different in nature.



Map 1. Hartlebury Common taken from *Hartlebury Common – A Social and Natural History*. Tucker; et al. 1986.

How did the Rush Pool and the Bog come in to being?

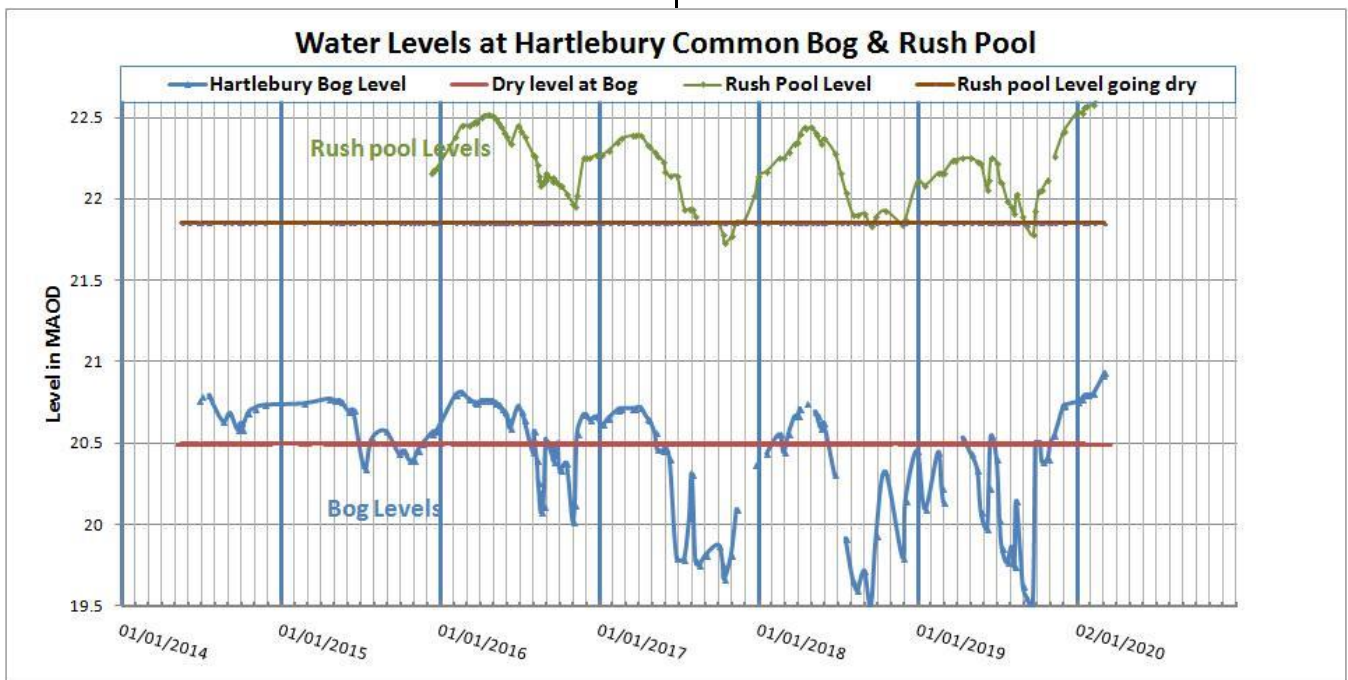


01. Hartlebury Bog. Mike Averill.

It is speculated that, as the Rush Pool has provided pollen samples and tree remains from 10,000 years ago, that it may have been an old kettle hole but this is probably unlikely as the glacial front is not thought to have reached this far south. There is certainly a one metre development of peat at Rush Pool and this is much thicker than the

peat found at the Bog. It is more likely, seeing the proximity of the nearby River Stour, that the water features are a relic of a former watercourse location or meander. Detailed studies of the underlying area have identified that the two pools sit at different levels on thin clay lenses which support a local perched water table. In dry times the lenses hold water for a while as the water table drops locally and they fill up when the general water table rises in the winter. The reason the water levels at the Rush and Bog Pools do not retain their levels all the time is due to a combination of lower general water table and reduced catchment area. In the 1960's the building of a housing development captured the natural runoff and sent it to sewers away from the pools. In excessive wet periods such as the autumn of 2019 to February 2020 there is plenty of water available to fill up the pools but when there are extended dry periods, particularly in the summer, evapotranspiration reduces the levels dramatically. One management technique has been to reduce the tree cover at the pools in the hope that this will reduce the water uptake by the larger plants.

Data for water levels in the bog from 1975 to 2008 shows that there have been four separate occasions when the bog was completely dry for more than four years in a row. More recently, the graph for 2014-2020, shows how the bog goes dry every summer but it doesn't recover in the winter of 2018/2019 (Graph 01). The Rush Pool interestingly does keep a small area of water for most of the year and only briefly went dry in the same period.



Graph 1. Water Levels at Rush Pool & The Bog 2014-2020.

Hartlebury Common has always attracted the naturalists because of its rare plants and so there is a long history of botanical interest in the site. The Bog is perhaps most significant with its plant mix typical of acid and rather peaty soils and so perhaps it does qualify as Worcestershire's only bog. Consequently it has had plants found nowhere else in the county and several others which are quite rare. The depressions left by the clay diggers have a number of Sphagnum mosses, so there are plants that are truly aquatic, dominating the pools and which are hard to find elsewhere.

A bog can have a unique assemblage of plants and animals and it is interesting to note the interest in the site by the early naturalists:

Charles Hastings notes in his chapter on *Flora of Worcestershire* 1834 several interesting plants on the Common: Bogbean *Menyanthes trifoliata* on Rush pool, as well as Round-leaved

Sundew *Drosera rotundifolia* and Marsh Clubmoss *Lycopodiella inundata* in the Bog (Hastings 1834).

Edwin Lees' description of the Common in 1856, is full of enthusiasm and states that the Bog presents a beautiful appearance in summer with flossy tassels of the Cotton-grass *Eriophorum angustifolium*, pink bells of Cross-leaved Heath *Erica tetralix*, various ferns, Marsh Violet *Viola palustris* and of course the Round leaved Sundew. (Lees 1856).

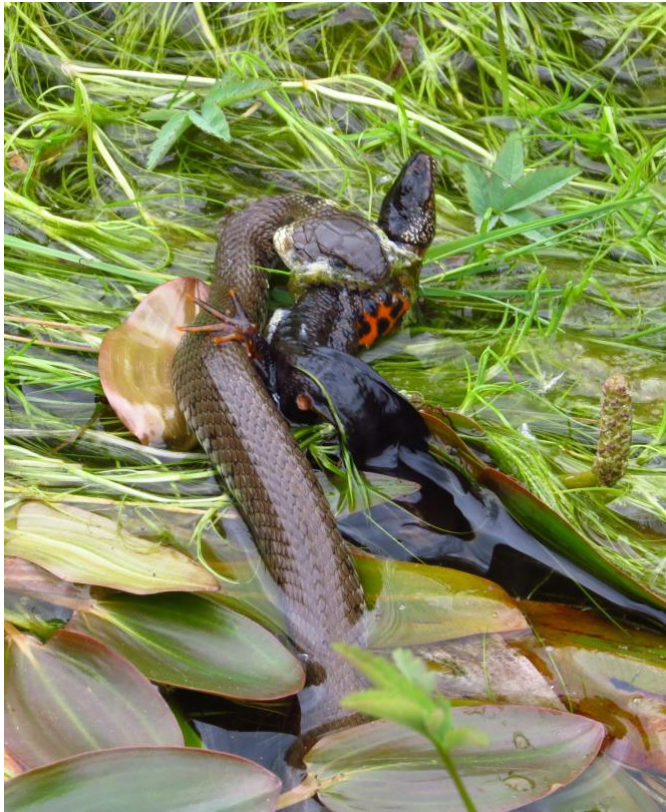
By 1900 the Victoria County History has good reports of rare plants to be found but there is a feeling that some were getting harder to find. Bogbean was mentioned at Rush pool as well as Marsh Cinquefoil *Potentilla palustris* but Lesser Bladderwort *Utricularia minor* could not be found according to the accounts. (Doubledays & Willis-Bund 1901).

Later visitors began to note the loss of various species and by the 1980s species like Marsh Clubmoss and Stag's Horn Clubmoss *Lycopodium clavatum*, Bog Pimpernel *Anagallis tenella* and Green-winged Orchid *Anacamptis morio* were no longer to be found. Some plants hung on like White Sedge *Carex canescens* which was noted as still present in 2010 (Maskew 2014).

There has clearly been a degradation of the Bog and it is not obvious what has caused this but probably a combination of loss of rabbits, a huge increase in tree growth, the decline in people making fresh scrapes clay digging and road improvements have all of significance. On top of that the water supply to the bog has been badly affected in the last 100 years. The extensive use of groundwater in the area and the diversion of surface drainage following house building plus the cyclical nature of weather has meant long periods of little or no surface water.

Nowadays what can you find?

When the site is wet there is a burst of activity from aquatic insects flying in to investigate the site, the Cotton Grass may still be seen and plenty of Marsh Cinquefoil, but the Sundews are no longer to be found. The last ones probably disappeared in the long dry years of the early 1990's and that was after a short period of increasing numbers following the creation of scrapes in the mid 1980s. *Molinia* grasses are dominant and Grass Snakes *Natrix natrix* and Great Crested Newts *Triturus cristatus* are still to be seen (02). Snipe can still be put up from their hiding places in the rushes.



02. Grass Snake preying on Great Crested Newt at Hartlebury Bog. Mike Averill.

A group of animals that simply cannot tolerate long periods of drying out are the aquatic creatures including insects. Dragonflies are very much a feature of the site when it is wet, but they do need some water all the year round as their larvae may take up to three years to complete their development. Some species can manage short periods of drying out in the summer like the Emerald Damselflies that lay their eggs into rush stems and only emerge when wet conditions return several months later. Hartlebury Common has had 23 dragonfly species recorded over the years and the ones of particular interest are those associated with lowland heath, the 'Heathland Four'; Common Hawker *Aeshna juncea*; Four-spotted Chaser *Libellula quadrimaculata*, Emerald Damselfly

Lestes sponsa and Black Darter *Sympetrum danae*. All these have been recorded at the Bog and others that might be there are found on similar habitat elsewhere in the country including Small Red Damselfly *Ceriatagrion tenellum*, White-faced darter *Leucorrhinia dubia*; Keeled Skimmer *Orthetrum coerulescens* and the very scarce Southern Damselfly *Coenagrion mercuriale*.

Occasionally a rare dragonfly can be seen investigating the Bog and a Common Hawker female (03) was found egg laying into rushes in 2014 but unfortunately the bog was dry the next year so those eggs were wasted.



03. Common Hawker female, Hartlebury Common 2014. Mike Averill.

So what is the future of Hartlebury wetland and other possible wetlands in the area?

Fortunately most of the present and potentially restored heathland is under the guardianship of the County Council, District Council or Worcestershire Wildlife Trust and so there may well be locations where some permanent habitat could be encouraged if a reliable water source could be secured. Hartlebury Common Bog has had several projects proposed to try to retain water but so far none have been initiated other than some tree clearance. All the proposals have pointed at the solution being the need for a borehole to trickle water in to the site in times of need. The groundwater table is only one metre below the surface at the worst so only a small borehole would be required. It is hoped that a project running at the moment involving Severn Trent Water and the County Council will come to fruition this time and save the habitat from deteriorating too far.

References

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 Table 1 the sites in the Worcestershire Heathland Block.
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 Graph 1 Water Levels at Rush Pool & The Bog 2014-2020

All images by Mike Averill.