

Herts and Middlesex Wildlife Trust

Colney Heath Common

A five-year conservation management plan



2022



Limitations

Ecological assessments can only assess a site at a particular time. This evidence can be used to draw conclusions as to the likely presence or absence of species (animals and plants), population size, use of the site by animals; it is neither definitive nor complete. Any survey is a snapshot in time and should not be regarded as a complete study. Seasonality and weather conditions may also affect survey results.

The preparation of mitigation strategies, consultation exercise and submission of any licence applications cannot be relied upon until approved [licensed] in writing by third parties. Allowance must be made for both programme and financial change to projects as a result of application failure, amendment or refusal.

Every effort will be taken to provide an accurate assessment of the situation pertaining to this site and subject at the time of the study, but no liability can be assumed for omissions or changes after the survey has taken place.

The survey is based on anticipated work resulting from instruction and information supplied at the time of request.

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Herts and Middlesex Wildlife Trust
Grebe House
St Michael's Street
St Albans
Herts. AL3 4SN

01727 858901



Heather (*Calluna vulgaris*)

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Dwarf Gorse (*Ulex minor*)

Vision for the habitats and wildlife at Colney Heath (developed through discussion with Colney Heath Parish Council)

When people choose to move to Colney Heath, they choose it for several reasons, but high on their list of priorities is access to green space. People are not necessarily aware that their green space possesses such amazingly unique habitats; it has heathland, a rare priority habitat in Hertfordshire and a river which is one of only 200 chalk streams in the world. Surely these deserve to take pride of place, a jewel in the crown of the Parish. This will take people on a journey of discovery by finding out about the plants and wildlife of the heath and river, their life cycles and what makes them thrive.

Colney Heath Common benefits by having easy access from the village and road, making it a popular recreation area, particularly for dog walkers. The aim is to protect its exceptional wildlife and for it to become an even more valued and valuable resource for the community.

What is Heathland?

Heathland is a wonderful, colourful patchwork of low growing shrubs like Heather (*Calluna vulgaris*) and gorse species (*Ulex* sp.). It is home to Bracken (*Pteridium aquilinum*), various special heathland grasses, plants, lichens, and mosses. Together with areas of bare ground and scattered trees, these support a wealth of wildlife from butterflies, beetles, and birds through to reptiles. These are further enhanced by damper areas of heath and ponds. Sadly, over the last two centuries, 80% of lowland heath has been lost in the UK.

Lowland heathland is covered in the UK Biodiversity Action Plan as it is a Priority Habitat, with approximately 20% of the lowland heath in Europe being found in the UK. It is defined as a broadly open landscape on impoverished, acidic mineral and shallow peat soil, which is characterised by the presence of plants such as heathers and dwarf gorses. Areas of heathland in good condition should consist of an ericaceous layer of varying heights and structures, plus some or all the following additional features, depending on environmental and/or management conditions; scattered and clumped trees and scrub; bracken; areas of bare ground; areas of acid grassland; lichens; gorse; wet heaths, bogs and open waters.

A heathland like Colney Heath would have developed over centuries. Commoners of the heath would have grazed their livestock here, collected wood, Gorse, and Heather for fuel. Over time these led to the soil becoming depleted in nutrients and becoming home to special flora and fauna adapted to the nutrient poor conditions. Unfortunately, in the UK much of this type of heath has been lost, particularly so in Hertfordshire, and as a result these specialist flora and fauna are at risk.

Heathland is a dynamic habitat which undergoes significant change in different successional stages, from bare ground (*e.g.* after burning or tree clearing) and grassy stages, to mature, dense heath. These different stages often co-occur on a site and maximises the habitat structure, creating many homes for wildlife. The indicator of habitat quality is seen in the presence and the number of characteristic birds, reptiles, invertebrates, vascular plants, bryophytes, and lichens.

Overview of current wildlife interest for Colney Heath

Colney Heath Common (central grid ref. TL202056) is a local nature reserve and a Hertfordshire Local Wildlife Site. It occupies an area of 22.54 hectares, and it is well connected in the landscape with sixteen Ancient Woodland or Local Wildlife sites located within a kilometre.

Ancient Woodland Inventory Sites within a kilometre of Colney Heath Common

Site Name (where known)	Grid Reference	Category	Distance (m)
Cobs Ash/Cangsley Grove	TL214041	ASNW	890
Cobs Ash/Cangsley Grove	TL212040	PAWS	820

Local Wildlife Sites within a kilometre of Colney Heath Common

File Code	Site Name	Distance (m)
68/003	Smallford Pit	440
68/022/01	Tyttenhanger Gravel Pits North	320
68/050	St. Mark's Churchyard & Graveyard	140
68/097	The Old Vicarage, St. Marks Close, Colney Heath	160
69/002	Colney Heath Farm Meadows	0
69/003	Sleapshyde Gravel Pit	230
69/019	Tollgate Wood	870
69/043	Frederick's Wood	0
69/050	Sleapshyde Farm	890
77/043	The New Plantation	500
77/053	River Colne by Bowmansgreen Farm	650
78/008	Walsingham Wood	270
78/031	Scrubby Grassland by Frederick's Wood	90
78/079	North Mymms Park	640
78/104	Coursers Farm Area	150

The Common and Furzefield contain remnants of Hertfordshire's once extensive heathland. Its mosaic of neutral, acid and marshy grasslands, heathland, scrub and riverine habitats collectively support a diverse flora and several species of Hertfordshire Conservation Concern. These include Heather (*Calluna vulgaris*), Dwarf Gorse (*Ulex minor*), Petty Whin (*Genista anglica*), Crosswort (*Cruciata laevipes*), Heath Dog-violet (*Viola canina*), Harebell (*Campanula rotundifolia*), Bramble species (*Rubus rhombifolia*), Fragrant Agrimony (*Agrimonia procera*), and the River Colne has a record for Opposite-leaved Pondweed (*Groenlandia densa*). Other records of note include Heath-grass (*Danthonia decumbens*), Bird's-foot (*Cornithopus perpusillus*), Blinks (*Montia fontana*), Heath Spotted-orchid (*Dactylorhiza maculata*), and Southern Marsh Orchid (*Dactylorhiza praetermissa*).

The site is important for invertebrates with heath specialists and a good diversity of butterflies and dragonflies have been recorded. The open heath is also important for vertebrates, providing an important feeding ground for a variety of birds, and recorded on this site are Common Lizard (*Lacerta vivipara*), Grass Snake (*Natrix natrix*) and Water Vole (*Arvicola amphibius*). In the River Colne there are records for Bullhead (*Cottus gobio*) and on the site visit for this report, Otter spraint was found under one of the adjoining road bridges.

Colney Heath Common Wildlife Site criteria met: Grassland indicators; Heathland; species

History of Colney Heath Common with reference to influences on habitat

In early medieval times the Colney Heath referred to an island of heathy land contained by the marshy area of the river Colne. This heath had originated from a stagnogley soil of relatively impervious qualities which makes for a nutrient-poor, acidified soil. Despite this the calcareous bedrock is not far below. The soil on this typically supports relatively few tree species.

A peat cap develops over this layer and in 1958 Godwin radiocarbon dated the peat to about 13560 years (grid ref TL197059). The organic content of the peat was analysed and showed that at that time there were grass species and scatterings of marsh and waterside plants, indeed exactly the types of plants we see in the areas surrounding the river Colne and a process that continues to lock carbon down into the floodplain. In the peat record there were also chalk grassland plants from the time before the chalk bedrock was buried, including Great Pignut (*Bunium bulbocastanum*) and a moss of short calcareous turf, *Abietinella abietina*. Both are only rarely found today in Hertfordshire.

Furzeffield once represented a large area of dry heath on the freely draining, acidic to circumneutral soils with a generally low nutrient content. Dry Heath is a semi-natural habitat, a dwarf shrub habitat prevented from progressing through the stage of scrub to secondary woodland through a long history of grazing and burning. There would have been extensive grazing by livestock shown by the presence of so many grasses in the peat record.

This area has been particularly valued by naturalists with Sir Edward Salisbury in 1911 describing two ponds at Furzeffield as having interest “not only for the zonation they exhibit but also for the richness of their algal flora.” Unfortunately, this area has also suffered decline. In a letter to Dr Dony a woman called Christine (1987) recounts a conversation with an old local farmer who recalls that these ponds were present until WW2 when they were filled for the war effort and the Common ploughed.

Fleming (1986) extensively studied the geology of the Common, taking soil cores and he usefully documented the history of anthropogenic disturbances. These modified the area further and points to ways in which the site can be restored if these actions were unfavourable. Listed are:

- Two interconnected ponds at Furzeffield which were infilled with topsoil, vegetation, and refuse.
- Ploughing up and cultivation of Furzeffield and the presence of a football pitch.
- Placement of a field drainage system in Furzeffield
- Artificially raising the bank heights of the river Colne to mitigate against flood risk.
- Infilling of a shallow depression to the southeast of the Common (TL202057)
- Draining of a small pond in the centre south of the Common (TL202056) (possibly already restored and located on adjoining farmland).

The character of the River Colne at Colney Heath also explains the lack of habitation on the Common. To set perspective on this, an account from 1893 describes that for nine months of the year it could “hardly lay claim to the dignity of a brook” and yet at other times the “petulant stream rises five or six feet.”

Descriptions of Habitats found on the Common

These were visited on 3/8/22 and using data from the Local Wildlife Site survey, the following habitats, their condition, and size were noted.

Grassland north of the river Colne

Short-mown semi-improved grassland (MG6) ran along the north of the site and most of the wide path areas, giving access across the Common. This moved into mixtures of uncut, species-poor, neutral grassland (MG1, MG7d) with various historic levels of improvement. The wide mown path ran along the backs of houses, with some minor garden introductions in the area. This heavily used dog-walking area had significant enrichment which promoted ranker forms of grassland. Descending towards the river the grassland took on acidic grassland characteristics (U1) but were species-poor. On these patches the ground lies slightly higher, and the drier ground is favoured by rabbits. The sward was grazed short here and gave rise to patches of Sheep's Sorrel (*Rumex acetosella*) and Lesser Stitchwort (*Stellaria graminea*).

In the central northern section, there were areas with increased Knapweed, representing the MG1e, Knapweed sub-community. Within this area, Meadowsweet (*Filipendula ulmaria*) and Marsh Thistle (*Cirsium palustris*) emerged indicating increased dampness which seemed to originate from the Village Hall, and there are records to suggest that a spring may have occurred here. This runs to an area that occupies the site of an old channel. Areas which lay damper later into the spring gave rise to much Creeping Bent (*Agrostis stolonifera*) and Creeping Buttercup (*Ranunculus stolonifera*) typical of an inundation community (MG13). Previous surveys (1988, 1999, 2011) suggest that the commencement of flow of the spring is recent, but otherwise the condition of the grasslands have remained constant with vegetation consistent with species-poor, nutrient enriched sites. A second spring area lies over on the far side of the river Colne on the opposite slope (described below).

Changes observed over thirty years and management:

Grass was short mown in the amenity areas and taller areas of grassland cut and cleared in September, following the management plan written in 2019. Nutrient levels were very high on this side of the river as late cutting does little to reduce these values. This in turn continues to feed the coarse grasses which dominate over the less-competitive wildflowers. The baseline of the 1992 survey (Wyatt and Clarke) show little improvement in the intervening period.

River Colne

The river Colne ran in a deeply incised channel with raised banks either side. The banks had visible gravels and was likely to be the result of dredging the original channel bed. The upper banks were dominated by ruderal vegetation, but with a diverse selection of tall fen herbs. The riverbanks had a mixture of Alder (*Alnus glutinosus*) and willow woodland (W6), but the shade was not so dense as to prevent the growth of river vegetation. The Alders appeared to have a touch of crown dieback, which could probably be attributed to water-stress of this wetland species. Droughts in recent years include 2018, 2019 and 2022.

The river channel resembled a series of loosely connected ponds. The macrophytes found in the channel were highly diverse, but more characteristic of low energy flows. These included Water Forget-me-not (*Myosotis aquatica*), Brooklime (*Veronica beccabunga*), Water-plantain (*Alisma plantago-aquatica*), Flowering-rush (*Butomus umbellatus*), Common Club-rush (*Schoenoplectus lacustris*), Plicate Sweet-grass (*Glyceria plicata*) and Broad-leaved Pondweed (*Potamogeton natans*).

Previous surveys (1988, 1999, 2011) suggest that little has changed on the river but perhaps a little less shading of the channel. During the survey of 1999 the river was reported to have run dry.

An investigation of sections of the river revealed that upstream there was a concrete footpath with a collapsed culvert below, and downstream, a shallow sluice. The sections of river outside the Colney Heath Common are wide, dark, and silty, but that which lie within the Common are habitat that would likely be favourable for Water Vole. Under the downstream bridge some Otter spraint was found (Tim Hill, 16/9/22).

The upper bank vegetation of the river Colne appeared to be ruderal and infrequently cut.

Grassland south of the River Colne

South of the river there were mixtures of uncut, species-poor, neutral grassland (MG1, MG7d) with various historic levels of improvement.

Scrub encroachment has obviously presented a persistent problem and a section of more recent removal had given rise to an area of Bracken with Foxglove (*Digitalis purpurea*), and where slightly damper Reed Canary-grass (*Phalaris arundinaceus*) and Meadowsweet (*Filipendula ulmaria*). Other areas which had originally been mapped as scrub had developed into young secondary woodland with Hybrid Oak (*Quercus x rosea*), Hawthorn (*Crataegus monogyna*), Elder (*Sambucus nigra*), Domestic Apple (*Malus pumila*) and where wetter, an old Grey Willow (*Salix cinerea*).

Centrally there was some wetter grassland with again Marsh Thistle, Meadowsweet, Hairy Sedge (*Carex hirta*) and less frequently some young Gorse (*Ulex europaeus*), Early Dog-violet (*Viola reichenbachiana*) and Red Bartsia (*Odontites verna*). Low Bramble scrub running through at ground level with several ruderal weeds, suggesting the start of scrub development. Further south, uphill from this was grassland with Hard Rush (*Juncus inflexus*). This area was suspected to be the source of a spring mentioned in the records. When this area was visited later (September), the developing scrub had been cut.

To the southeast, nearest the river there was some damp grassland which was dominated by Meadowsweet and where the ground rose more, generally species-poor neutral grassland with some Knapweed (MG1e). This is likely to represent former floodplain meadow. In the Local Wildlife Site report (2011) this area had previously been described as species-rich with Bird's-foot Trefoil (*Lotus corniculatus*), Knapweed, Common Sorrel (*Rumex acetosa*), Meadow Vetchling (*Lathyrus pratensis*), and Sneezewort (*Achillea ptarmica*).

Towards the northeast, the ground rose with a path leading towards Furzefield. The sward became shorter here and acidic grassland emerged with much Common Bent (*Agrostis capillaris*), Red Fescue, Hybrid Cinquefoil and Sheep's Sorrel (*Festuca ovina*). Near the southeast corner, Red Fescue (*Festuca rubra*) was replaced by Sheep's Fescue.

Changes observed over thirty years and management:

The most floristic area had been described as species poor MG9b in 1992 and the mowing regime prescribed from 1994-1998 of once a year in mid-June to mid-July, which would have reduced the vigour of the coarse grasses. By 1998 a September cut and clear was in operation. In 2011 the floristic diversity had been recorded as very good with flowers like Sneezewort. Since then, the floristic diversity has plummeted as the soil fertility returned with the later grass cut and

Meadowsweet dominated. The acidic grassland at the top of the slope has fared better as it is naturally lower in nutrients and has had the benefit of rabbit grazing.

The challenge of scrub removal has been an ongoing management issue, with either efforts to cut it back or allow it to further development into secondary woodland.

Woodland

To the south of the river there were areas of Hawthorn and Bramble scrub which in places were rapidly succeeding to Pedunculate Oak Woodland. More secondary Oak woodland occurred on the southern boundary and in the older stands of secondary woodland there was little mid or field layer vegetation. The floor of the woodland has the remains of earthworks or other unidentified disturbance. In the younger stands of secondary woodland there was a more varied structure, with a field layer dominated by Bracken and Bramble. In the mid-section towards the river, acidic grassland emerged with much Bracken, tall ruderals, and a little Common Gorse, some of which were young plants.

It is clear from the survey in 1992 (Wyatt and Clarke) that the extent of secondary woodland was once much smaller. Over a period of thirty years, it has roughly doubled on the southern boundary, taking in areas which were previously classed as acidic grassland and areas of Bracken. These also correspond to distinctive geological deposits seen in the British Geological Survey. Acidic grassland is an uncommon habitat in Hertfordshire and an important one to conserve.

Furzefield

Furzefield had sections which meet the definition of lowland heath as defined by JNCC, 2008. The loss of heathland in Hertfordshire has been dramatic since 1940, with an estimated 97% loss in area, so that today no more than about 20 ha of open dry and wet heath survives. Heathland is characterised by more than 25% dwarf shrub. The patches of heathland had varying heights of Heather, giving a good structural diversity. In the heath mosaic with the acidic grassland there were two specimens of Petty Whin (*Genista anglica*), a Herts rarity and a species of conservation concern.

Centrally there was a good amount of acidic grassland with sections of neutral grassland with areas of Knapweed (MG5). Towards the periphery the grassland became ranker due to the enriching effects of leaf fall from nearby trees.

The acidic grassland contained some species that were uncommon to Herts, Heath Grass (*Danthonia decumbens*), Heath Dog-violet and small patches of Dwarf Gorse, another Herts species of conservation concern. In the Local Wildlife Site survey (2011) other notable species recorded here were Bird's-foot (*Ornithopus perpusillus*), Early Hair-grass (*Aira praecox*), and Heath Spotted-orchid (*Dactylorhiza maculata* ssp. *erictorum*). No calcifuge (chalk-avoiding) bryophytes were found, but a large covering of *Pseudoscleropodium purum*. *Cladonia* species lichens often exceeded the quantity of mosses present, particularly as pioneers of bare ground. It is possible that the more specialist bryophytes will return as the area matures. In November 2022 a very small amount of young *Polytrichum formosum* was seen, a characteristic heathland moss.

In an area once occupied by a football pitch, the turf had developed large areas of acidic grassland interspersed by young Heather. The short turf had allowed Harebell (*Campanula rotundifolia*) to appear, and this is another Herts Species of Conservation Concern.

Some of the Hawthorn and Bramble scrub had grown large and contained Birch saplings within, representing progression towards the development of secondary woodland. Included in the taller scrub were mature Common Gorse and Dwarf Gorse.

The large outlines of two “Ghost Ponds” were readily visible on the satellite image and on the ground can be identified by the presence of rank grassland, dominated by False Oat-grass.

Furzefield was ploughed, drained, and cultivated during World War II and the south section then used as a football pitch. Successive surveys since the re-instatement of the heath chart a gradual progression to better quality habitat and the proliferation of Heather across the area. Even in the last ten years, the Heather has continued to spread. This had been aided by the introduction of grazing by Cattle in 2017, under Natural England’s Higher Level Stewardship scheme. As part of the scheme good fencing is in place and there is a small water trough. Since the Covid pandemic grazing has ceased and this will unfortunately halt and even reverse the progress that has been made.

The survey in 1992 (Wyatt and Clarke) note two additional areas of heathland dominated by Heather to the southeast of the current patch. This corresponds presently to large blocks of scrub. Near to this Heath Grass and Heath Dog-violet can be found, and when the scrub was examined, the remnants of dwarf shrub heath could be found within, suggesting a more recent origin of scrub. The remnant of a hedge also lies across the heath.



A specimen of Petty Whin (*Genista anglica*), a Herts species of conservation concern

Identifying key objectives for wildlife

This is an aspirational list, with some objectives easier to achieve in terms of effort, funding, and time. Some of the objectives are discrete pieces of work and others ongoing management duties. Many of the objectives are interconnected. The work and results, an investment not only in wildlife, but for the current and future communities.

The Common

- Restoration of good function to the river Colne with the understanding of the seasonal nature of the river.
- The re-introduction of Water Voles, a charismatic Hertfordshire species to this section.
- Reconnect the river with the floodplain and manage the floodplain grassland so that it achieves the floristic diversity it once had.
- Reconnect with the populations of Heather, Dwarf Gorse and Petty Whin from Furze field by creating a nucleation area for these species within the acidic grassland.
- Reinstatement of the pond.
- Controlling scrub encroachment to restore and preserve the rare acidic grassland.
- Diversifying the structure of both newer and older secondary woodland, creating a greater variety of niches for different species.

Furze field

- Reinstatement of two interconnected ponds.
- Controlling and removing scrub encroachment to restore and preserve the heathland and surrounding grassland.
- Conservation of Petty Whin and Dwarf Gorse. As Herts species of conservation concern are key umbrella species that represent the good health of the heath.
- Continuation of Heather conservation, a species that defines the priority habitat at Furze field.

Identifying priorities and action plans for each habitat

Amenity Grassland for dedicated leisure use

The grassland to the north of the river is highly enriched and as a result coarse grasses dominate. It is therefore botanically and ecologically not very diverse. It is suggested that it retains its function as amenity grassland, providing ample room for dogs to be exercised and for the local community to retain a large section solely for their leisure use.

Grass should be of varying heights. Keep grasses uncut in the spring/river loop area to allow fen plants to emerge but cut in July to prevent vigorous grasses from becoming too dominant. In other areas encourage flower-rich lawns by keeping a cutting height of 10cm which allows rosette and low-growing species to flourish.

The presence of dog waste was a problem across the Common and not only being a hazard for children and wildlife, also adds excess fertility which leads to eutrophication and degradation of the environment in heavily populated areas. If the use of dog waste bins is not desirable, research possible information campaigns to engage with dog-owners in a positive way.

River restoration

Expert advice from the Environment Agency has been sought and a proposal is being investigated that considers the immediate obstacles in the channel of the upstream footpath and the downstream sluice. Opinions are also being sought on the over-high banks, the connection with the floodplain and the rapid rise of water levels during rain through both ground water and river flow. If it is not feasible to reduce the bank height could gaps be created that allow marshy grassland and floodplain meadow to develop to the south of the river? Options are currently being investigated.

Riverbank Margins and Water Voles

We believe that this river stretch may be suitable for the re-introduction of Water Voles which the Trust would manage. To create the ideal conditions for them, it is suggested that the riverbank uncut margins are widened to provide shelter and improve habitat. To suppress the development of ruderal weeds and to curtail scrub succession, mow alternate banks on alternate years. It is recommended to fence the margins to protect the wildlife. Ahead of a reintroduction Mink control would need to be established and maintained thereafter.

This could be a great community project. For an example of how this has been achieved elsewhere, please have a look at <https://www.bbc.co.uk/news/uk-england-beds-bucks-herts-62352939>

Heathland restoration: continuing efforts

Furzefield has suffered from the effects of cultivation during WW2 and even though there has been some very good recovery, large blocks, particularly over some of the most diverse areas, have been invaded by scrub. Heathland is a manmade habitat created by the removal of vegetation and needs careful management to survive. If it is neglected, the surrounding scrub vegetation will soon spread and take over the open landscape. There is therefore the option to undertake significant clearance of scrub and young trees to re-create the open heathland.

Where scrub and tree removal are undertaken, any organic leaf litter layer should be scraped off to expose any remaining Heather seed bank and to remove nutrients. Heather brush can also be added to provide additional seed material. All such restored areas will require regular maintenance, with the removal of germinating scrub and tree seedlings at an early stage and finally including the restoration areas in the rotational Heather cutting programme once it is established.

A return to the traditional management method of low-level grazing by cattle is recommended. Alternatively, this could be sheep or ponies. Grazing not only reduces the level of vigorous grasses but helps to retain the Heather at a smaller size for longer. This helps reduce the nutrient levels on the Heath, allowing characteristic heathland plants to thrive. The action of mild soil disturbance by hooves also creates areas in which Heather seeds can germinate.

Conservation of Petty Whin and Dwarf Gorse would be particularly important on Furzefield as these have both experienced significant losses in Hertfordshire and they are also key umbrella species that represent the good health of the heath.

Petty Whin (*Gensita anglica*)

Petty Whin, a Hertfordshire species of conservation concern and present at three sites, is also classed as vulnerable in England and nationally threatened. In 1999 it was reported by Rachael Keen as not regenerating at Furzefield, but in 2012 Trevor James remarked that it was still locally frequent here. Without regeneration it has now declined to a population of two individuals. Croxley Common

Moor has the healthiest, functioning population in Hertfordshire. This is grazed by cattle from July and year-round by rabbits. As the current population at Furze field is down to a couple of plants, it may not have the genetic diversity to produce viable seeds. Additionally, there is no persisting seed bank for this species (LDA Traitbase), so scrub removal will be ineffective for restoring the population. It is suggested that seed is obtained from Croxley Common Moor, and the population reintroduced once good site conditions have been achieved. It is beneficial to obtain seed from a local source as the plant is more likely to be suited to local conditions, and a wider gene pool nationally is more protective against future disease since they preserve their local distinctiveness. As Croxley Common Moor has SSSI designation, permission will need to be obtained from Natural England as well as the landowner. Young plants may need some protection from grazing until established.

Dwarf Gorse (*Ulex minor*)

This is a more stable, but still a small population and in restoring good site conditions, should thrive once again.

The areas around the ghost ponds are likely to have incorporated material from the documented infilling, which included topsoil of unknown origin. Where the sward is dominated by a dense grass, turf-stripping can be employed to again expose the bare mineral soil, removing the fertile layer. It is suggested to apply Heather cuttings from management of other areas of the heathland. As the soil composition and the degree of disturbance is unknown, this needs to be judged as work progresses with the pond excavation.

On the Common there are areas of acidic grassland to the south, but much has disappeared under scrub succession. Heathland/acidic grassland restoration would involve the removal of portions of secondary woodland and such drastic action is likely to be perceived by local people as detrimental, even if it is a change that would re-instate the original priority habitat. It therefore might be better to deliver this gradually, progressively clearing back the edges of woodland, particularly where fragments of heathland ground flora persist. This could take the form of taking back the woodland margins by the creation of large 'scallop's. This would again also require the removal of leaf litter to expose the mineral soil (described above). The area near the emergence of the spring should be a particular target as this should prove to have a more interesting seed bank.

Reconnecting the Common with rare and characteristic heathland plants at Furze field

Records suggest that the area of dwarf shrub heath extended to at least the southeast of the Common, where the area of acidic grassland currently lies (figure 1 & 2). This illustrates how a lapse in management has resulted in species loss. Additionally, seed has not spread back from Furze field because of the lack of connectivity and the loss of livestock movement across the landscape. The current composition of this grassland and the underlying geology suggests that dwarf shrub heath could be restored here.

It is suggested to turf strip an area towards the top of the slope and re-seed with Heather brash, supplementing with cuttings of Dwarf Gorse and reintroduced Petty Whin. The higher location of this will facilitate it as a nucleation point for restoration as seed will wash downhill. The area will need to have temporary rabbit-proof fencing to prevent damage. It would also be beneficial to remove blocks of developing woodland below this, not only to halt further encroachment on the acidic grassland but develop further areas where heathland can spread.



Figure 1. Postcard view of the Common from c1920s showing Heather and Gorse on the North Common. In precisely this area there is now a block of woodland where the succession of the dwarf shrub heath has not been halted (image obtained from Hertfordshire Environmental Records Centre).



Figure 2. Postcard view of the Common from 1984 taken from approximately the same view. This shows the elimination of heathland species through the development of scrub (left) and regular mowing of Heather.

Ghost pond restoration

This must be one of the most exciting opportunities on the site. There are multiple mentions of two interconnecting ponds in the records on Furzefield and from the geological report of Fleming (1986). The outline can be clearly seen on the satellite as areas of grassland retaining a green colour during the summer because of the higher soil moisture and on the ground can be identified by the stand of False Oat-grass which is favoured on the imported pond in-fill material.

A feature of such ponds is the buried seedbanks which contain a time capsule of plants that have historically grown here and indeed a past record from Colney Heath Common includes the endangered Grass-poly (*Lythrum hyssopifolia*) which is no longer present in Hertfordshire. Dony (1967) reported that it was recorded by Webb in 1848 from Colney Heath but was apparently extinct there when Crespigny visited it c.1877. When a Norfolk pond restoration revealed Gras-poly after more than a century, it made national headlines. Regardless of this, ponds have myriad benefits for many wildlife species and will also provide much-needed habitat for amphibians. It could also provide water for livestock.

The aim would be to restore ponds to the original extents. Careful, professional excavation would be carried out by use of a tracked excavator, limiting the compaction of the heathland soil by machinery by identifying the shortest access route across the least ecologically valuable area. The infill material of the ponds was said to be topsoil, vegetation, and refuse and as such we recommend to remove this material from the site. Flemming (1986) identified brick material from a soil core of the area, together with chunks of organic material suggesting wood, and pieces of chalk. The objective of the restoration is to find the original pond base as identified by a change in the substrate to a darker, peaty layer. It would also be beneficial to restore the pond margins by turf stripping to reveal the heathland soil and layer it with freshly cut Heather brash.

It is best to allow the pond vegetation to emerge naturally from the peaty seed bank. Planting material is not necessary for a restoration. A newly restored pond may not initially meet expectations of how a pond should appear but each stage in succession is valuable. The early and middle stages are the points at which ponds have the greatest diversity and benefits to wildlife, as at a late stage a pond has become silted and eutrophic. At this point rotational clearance of the two ponds can occur.

If grazing is reintroduced onto the site, it would be beneficial to limit the amount of poaching if this becomes excessive, ideally by limiting access to one pond alternately through the use of 'Nofence' technology. Some poaching is desirable as this diversifies the habitat structure and allowing bare mud for plants to germinate. The natural draw-down that happens during summer should keep the ponds separate when enriched by the livestock and joined again in the winter.

Dog owners should be discouraged from allowing their dogs to enter the water as this not only causes erosion to the sides, but also introduces the presence of topical flea treatments which can wash off and adversely affect invertebrate life. If this an issue, then the use of a fence will be needed.

Grassland management

The grassland on the Common is dominated by coarse grasses and are the product of high nutrient levels and this leaves the less competitive wildflowers struggling. Records indicate that there was once a greater variety than seen today. Nutrient levels would traditionally be kept low by the

removal of vegetation in the form of a hay crop followed by aftermath grazing or by intensive grazing alone. In the past, economic pressure would have meant that the most would have been made from the availability of any grass on the Common.

A hay crop removes nutrients by cutting and removing the grass when it contains maximum carbohydrate which in southeast England is the end of June. With this type of management, the Park Grassland Experiments at Rothamsted, the longest running ecological experiment in the world, and without the addition of fertiliser, has achieved 200 plant species per 2x2 m². For wildlife conservation purposes it is recommended to delay this until July to prevent potential disturbance of ground-nesting birds. Removing cut grass also prevents nutrients being returned to the soil in the form of decomposing material. The aftermath grazing or the second late cut and clear not only removes the nutrients from the regrowth, but additionally leaves the sward more open for seeds to germinate. Wildflower seeds often require not only bare soil, but also light to germinate. It also prevents the build-up of thatch which is another barrier. The present regime on the Common of a September cut and clear has therefore resulted in less wildflowers being present.

On the Common there are different types and areas of soil. The soil towards the river is neutral and nutrients are released more steadily to growing plants, so management needs to be more intensive to prevent grass dominance. As the valley rises to the south, geological deposits encourage acidic grassland conditions. Soil fertility levels drop as nutrients aren't retained well on the sandier soil and even less so if on a slope as rain washes nutrients downwards. This type of grassland can be readily identified by the short sward. In these types of areas, a later cut and clear is appropriate.

Coarse, tussocky grass will also have value for wildlife, particularly for small mammals and invertebrates. Thus, for this diversity, cut annually at the end of the flowering season, for tussocky growth cut on a longer rotation. The more tussocky areas may occur naturally at the ecotone with the scrub and the riverbank margins. Bare soil is also important and is generated through the action of hooves, scrub management and presently by the action of rabbits.

Grazing

The restoration of grazing to the common would be of major benefit to help sustainably maintain the heathland and grassland habitats into the future.

However, in such areas there are always constraints, such as availability of stock, fencing etc. The issue of fencing on Commons, especially Colney Heath Common, is likely to be difficult as the installation of such structures on Common land requires permission from the Secretary of State.

Furzefield is fortunate that it is already well fenced and has a small water trough, but the Common does not. Recent technological developments have become available with '[Nofence](#)', a new virtual fencing solution and that was first sold in 2016. The Nofence collar is a GPS-based device that prevents animals from moving out of a geographic area without the use of traditional fencing. The borders of the grazing area and the monitoring of the animals can be done via an App on a smartphone or computer. Audible warnings together with vibration tell the animals to stop if they are moving towards the border. If ignored, they receive a mild electric pulse that is lower than electric fences. The Nofence collar requires an initial outlay of £239 per animals and a yearly subscription which for more than 10 cattle, is around £49.00 per animal per year – 2022 prices.

The system has been approved for use with Countryside Stewardship applications. Such a system would be highly suitable for Colney Heath Common. Cattle are likely to be the best option for the habitat and for the restoration of the wet grassland of the floodplain.

Floodplain meadow and wet grassland restoration

Records indicate that the floodplain was once more connected and created a build-up of peat where water levels have excluded the oxygen that might break down decaying organic material. It is apparent that the deepening of the river channel means that it is acting as a drainage ditch for the area. Additionally, the river gravels which are piled onto the banks prevents the floodplain from operating. The drying on the site will unfortunately cause the peat to be exposed to the air which will cause it to degrade through oxidation and cause the release of carbon dioxide. This area was found to have a greater diversity in 2011 with plants like Sneezewort (*Achillea ptarmica*), but due to the late cutting regime a monoculture of coarse Meadowsweet has been encouraged, swamping these less-competitive wildflowers.

The biodiversity benefits of floodplain meadows are being rediscovered and if the river restoration can proceed, reconnecting the floodplain with the river would make a stunning addition. For more information on Floodplain Meadows see <https://www.floodplainmeadows.org.uk/> .

Acidic marshy grassland

This once existed on the central southern area of the Common, opposite the community hall. This can be seen as an area of wet grassland where a spring emerges and has some stands of Hard Rush and a few other wetland plants. Records indicate that there has been a marked reduction in the occurrence of marsh plants here. There has been an area which was more recently cleared of scrub and some diversity seems to be returning here. The spring that emerges here flows sporadically. Particular attention should be invested here such that scrub does not develop here once again.

Secondary woodland management

The older sections of secondary woodland lack structural diversity, so a series of “skylights” and thinning could be used to allow light to develop the vegetation mid-layer and field layers. A process of veteranisation could also be used on some of the trees to speed up rot which will develop into features important for biodiversity. It will also increase the roosting potential for bats. Retaining standing and fallen dead wood as it is a valuable wildlife resource, also inhabited by saproxylic species. Where possible and not a safety issue, leave already standing dead wood and fallen dead wood where it lies.

Management Prescriptions

1.0 To maintain and enhance the heathland and acid grassland habitats and the heathy character of Furzefield and southern side of the Common through the restoration of a typical flora, notably including Heather.

Prescriptions:

1.1 **Either:** Cut annually once after flowering if required (September-December). Maintain awareness for areas of Heather regeneration and allow development by reducing cutting in these areas. Remove cuttings as far as possible to avoid fertility build-up.

4.3 **Or:** Traditional heathland management requiring low intensity, late summer (July-October) grazing management with cattle (sheep or ponies).

1.3 Maintain a 3 - 8 year cutting rotation on established areas of Heather, with cuttings removed. Retain up to 20% of Heather as mature plants, with a longer 15-25 year cutting rotation.

1.4 Restore areas of heathland around the ponds by turf-stripping and re-seeding with Heather brash.

1.5 Maintain an ecotone with the woodland edge with wide rough tussocky grass margins adjacent to boundaries wherever possible, cutting on a longer 3 - 5-year rotation.

1.6 Remove scrub and/or trees in areas that can be restored to heathland or low scrub and create 'scallops' in the secondary woodland edge.

2.0 Implementing a woodland management regime that aims to enhance structural diversity within the older secondary woodland. Ensure further scrub development does not lead to encroachment into the important grassland habitats.

Prescriptions:

2.1 Skylight and thin areas of older secondary woodland to promote structural and age diversity, maintaining older and characteristic trees. Retain timber, in as large pieces as possible, within woodland as fallen dead wood habitat.

2.2 Implement a scrub management programmes where it appears to be encroaching into established grass areas.

2.3 Where there are trees lacking veteran features, and where safe to do so, consider artificially speeding up veteranisation by ringbarking or creating holes and crevices using a chainsaw.

2.4 Retain standing dead wood where it doesn't pose a hazard.

2.5 Investigate and implement a low intensity cattle grazing regime if using the Nofence technology. This would aim to diversify structure but would need to be limited to ensure that the field layer is not stripped out of the woodland.

2.6 Ensure tree-felling operations accord with government guidance on woodland management and protected species <https://www.gov.uk/guidance/manage-and-protect-woodland-wildlife>

3.0 Restore and maintain the Ghost ponds on Furzefield

Prescriptions:

3.1 Identify the extent of the two ponds by examination of the satellite image and ground survey of disturbance vegetation-types.

3.2 Carry out a professional assessment of access to the heath to ensure no features are damaged during work.

3.3 Restore the ponds to their original extents using professional contractors.

3.4 Turf-strip the margins to reveal the heathland soil and layer with freshly cut Heather brash.

3.5 Allow the pond vegetation to emerge naturally from the peaty seed bank.

3.6 Aim to maintain the ponds by careful rotational clearance every few years. Maintain a minimum of 30% open water and only clear a maximum of 50% of pond at one time.

3.7 If grazing is reintroduced fence or use Nofence technology if there is excessive poaching. With Nofence technology, alternate access to the ponds by grazing animals.

3.8 Liaise with the dog-owning community to discouraged dogs from entering the pond. If this an issue, then as a last resort consider the use of a dog-proof fence.

3.9 If scrub and trees develop around ponds, thin to maintain open aspects.

3.10 Allow ponds to dry naturally in drier years and use this opportunity for clearance as required.

4.0 To restore and maintain floral diversity on the Common

Prescriptions:

4.1 **Either:** Maintain an annual hay cut in July, with removal of the arisings and cut and remove again in October to mimic grazing.

4.2 **Or:** Maintain an annual hay cut in July, with removal of the arisings and aftermath graze by cattle (Sheep or Ponies).

4.3 Maintain an ecotone, buffer strip bordering the secondary woodland. This could be of varying width but should not be in the areas targeted for acidic grassland restoration.

5.0 To engage the local community with the plans and the vision for Colney Heath Common and to continue the conversation between the Parish Council and HMWT as the project grows and evolves

Prescriptions:

5.1 Look to establish a partnership between the Parish Council, neighbours, and conservation volunteers to help implement this conservation work programme. Establish a steering group with HMWT to review and guide the implementation of this management plan.

5.2 Work with HMWT to re-survey the Wildlife Site, review and amend management prescriptions. This could be facilitated by a yearly meeting.

5.3 Look to install interpretation about the management of the Common and Furzefield in appropriate locations. These could be distributed through QR codes on posts and through social media. Update the material regularly to reflect seasonal changes.

5.4 Liaise with local schools to find out how the river and heath can be used in the current curriculum. Consider what their inclusivity access requirements are and if possible, how these might be met.

5.5 Dog walking is currently the most popular activity on the common. Positive engagement is important in balancing the needs of the wildlife with dog ownership. Encourage an understanding of the benefit the restoration will have in enriching their experience on a daily stroll.

6 Monitoring

6.1 Monitoring is important to enable a review of work undertaken and to add to or amend prescriptions as required. In time, a repeat of the Wildlife Site survey is perhaps the best way of achieving this. A photographic record of each area of work undertaken is also extremely valuable.

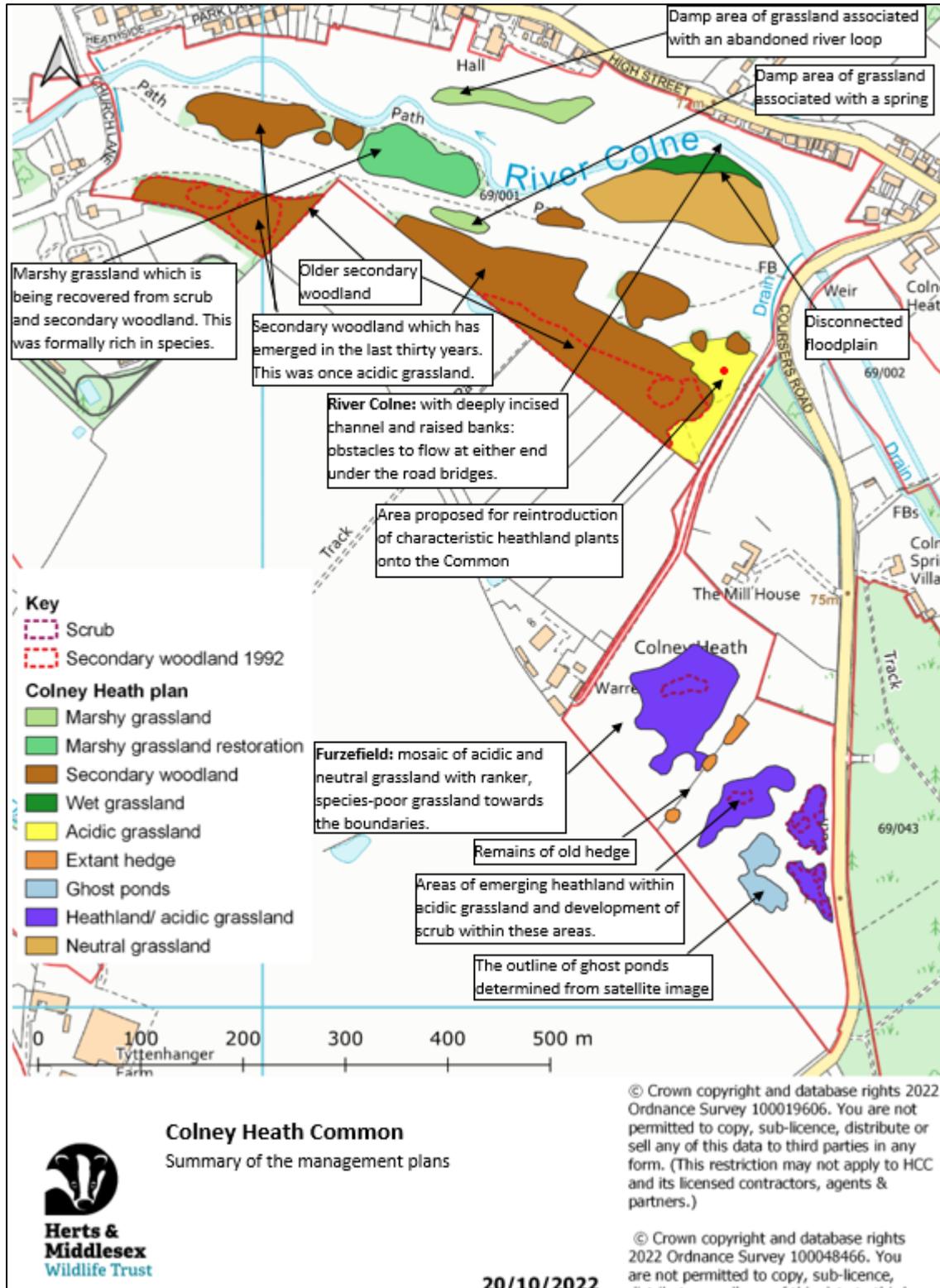
6.2 A yearly track can be kept of certain key heathland species which can be identified by volunteers and are indicators of the health of the habitat. These are:

- Number of Petty Whin plants
- Number of Dwarf Gorse (flowers in late summer before the Common Gorse)
- The spread in the areas with Heather
- Number of orchids

Additionally, a track of the percentage cover of scrub species such as Hawthorn, Bramble, and Common Gorse.

6.3 Colney Heath Common is a popular destination for local naturalists. Encourage the submission of records so that they can help to inform conservation efforts. Details of how each species group are recorded are found on the Herts Natural History Society website.

Colney Heath Common management map



Colney Heath habitat photos 3/8/22

Colney Heath Common is easily accessed from the road and is a popular recreation area, particularly for dog walkers.

Short-mown semi-improved grassland (MG6) ran along the north of the site and most of the wide path areas, giving access across the Common.



This moved into mixtures of uncut, species-poor, neutral grassland (MG1, MG7d) with various historic levels of improvement.

Descending towards the river the grassland took on acidic grassland characteristics but were species-poor. On these patches the ground lies slightly raised, and the drier ground favoured by rabbits. The sward was grazed short here and gave rise to patches of Sheep's Sorrel and Lesser Stitchwort.



In the central northern section, there were areas with increased Knapweed, representing the MG1e, Knapweed sub-community.

An area of increased dampness seems to originate from the Village Hall, and there are records to suggest that a spring may have occurred here. This area occupies the site of an old channel, and the increased dampness gives rise to some Meadowsweet and Marsh Thistle.

A few areas lie damper later in spring, giving rise to Creeping Bent and Creeping Buttercup (MG13).



The river Colne ran in a deeply incised channel with upper banks dominated by ruderal vegetation.

The riverbanks had a mixture of Alder and Willow woodland (W6). The shade was not so dense as to prevent the growth of river vegetation. The Alders appeared to have a touch of crown dieback, which could probably be attributed to water-stress of this wetland species. Droughts in recent years include 2018, 2019 and 2022.



The macrophytes found in the channel were highly diverse, but more characteristic of low energy flows.



The northwest corner, showing the wide, recently mown path. Houses, with and without gardens run along the top of the Common and there were some minor garden introductions.



To the south of the river there were areas of Hawthorn and Bramble scrub which were rapidly succeeding to Pedunculate Oak Woodland. More secondary Oak woodland occurred on the southern boundary. These were generally covered in a field layer of Bracken.

Acidic grassland emerged here with much Bracken, tall ruderals and low growing Bramble running through the base. A little Common Gorse, some of which was young plants were scattered here.

In September this area was found to be cut.



South of the river there was some damp grassland which is dominated by Meadowsweet and where the ground rose more, generally species-poor neutral grassland with some Knapweed (MG1e). This is likely to represent former floodplain meadow.

As the ground rose towards the south and the path leading to Furze Field, the sward became shorter. Acidic grassland emerged with much Common Bent and Red Fescue. Near the southeast corner, Red Fescue was replaced by Sheep's Fescue.



Furze field had sections which meet the definition of lowland heath as defined by JNCC. This is characterised by more than 25% dwarf shrub.



Here there were two specimens of Petty Whin, a Herts species of conservation concern.



The patches of heathland had varying heights of Heather, giving a good structural diversity.



Dwarf Gorse was found, another Herts species of conservation concern.

Centrally there was a good amount of acidic grassland with sections of neutral grassland with Knapweed (MG5). Towards the periphery the grassland became ranker due to the enriching effects of leaf fall from nearby trees.

There were the large outlines of two potential "Ghost Ponds" in the south, presently filled with rank vegetation.



Dwarf Gorse flowers in the summer through to the autumn, unlike Common Gorse which flowers in the winter.

Mature Common Gorse was found in the Hawthorn scrub of Furze field. Some of the Hawthorn scrub had grown quite large and contained saplings within. On another site in Hertfordshire both Petty Whin and Dwarf Gorse had been lost because of the scrub invasion of a site.



In an area once occupied by a football pitch, the turf had gained large areas of acidic grassland. The short turf had allowed Harebell to appear.



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