



# Cannock Chase Country Park: management options

Phase 2

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## Summary

This document sets out options for the management of open habitats at Cannock Chase Country Park. It follows a previous, more generic, options appraisal, and subsequent engagement with members of the public and other stakeholders.

Management is expected to include cattle grazing, heather burning, and chemical and mechanical management. These different techniques are likely to be used in combination and the balance between them will depend on the impacts of cattle grazing. The possible location and frequency of the last three options would be the subject of a more detailed management plan, taking into account the current state of vegetation and recent survey information, and amended subsequently in the light of monitoring of on-going management, particularly of the impacts of cattle grazing, if this is introduced. However, cattle grazing would be likely to reduce the frequency and extent of other management types. The possible location of fencing and gates has been indicated, with three options given for the main area of Cannock Chase Country Park: (i) perimeter fencing (ii) perimeter fencing plus invisible fencing creating three grazing units (iii) perimeter fencing plus internal invisible fencing creating 8 grazing units. Fencing to allow grazing on the majority of Brindley Heath is also suggested. Moors Gorse could be fenced separately, together with an adjacent field for invisible fencing trials.

Indicative costings have been provided, and the different options evaluated against the success criteria developed in Phase 1 of the habitat management options appraisal.

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## 1. Introduction

### Background

- 1.1 In 2016, Staffordshire County Council started the process of consulting on the future management of Cannock Chase Country Park. An initial habitat management options appraisal was developed (see Underhill Day & Lake 2016) and stakeholder engagement carried out by Dialogue Matters on likely suitable management types. This was followed by a working group consisting of representatives of key stakeholders, which looked at the management options in more detail. This report looks at the options discussed in the various events and presents more developed management recommendations for the second stage of engagement.
- 1.2 Through the initial appraisal and engagement, a vision for Cannock Chase Country Park was created, and a number of objectives have been redefined. Success criteria, against which management options could be evaluated, were also developed. These are provided here for ease of reference.

### Vision for Cannock Chase Country Park

A beautiful, tranquil landscape where wildlife thrives, heritage is celebrated and people enjoy themselves. There is a wide range of recreational activities taking place which coexist peacefully with each other and with the wildlife and heritage of the site. People are working together to ensure that the landscape, wildlife and heritage flourish in the long term, with an open character, plenty of heather, little bracken, many mature trees and healthy populations of characteristic plants and animals. The area is managed sustainably and is safe and welcoming to visitors.

### Objectives

**Objective 1:** Enhancing visitors' understanding and engagement to obtain a broad acceptance of the access and habitat management of the Country Park

**Objective 2:** Sustainably achieve and maintain favourable condition of the heathland, valley mire, and wood pasture habitats and the key species they support

**Objective 3:** Sustainably manage public access to maintain a beautiful and tranquil landscape where visitors are welcome and safe, and enjoy themselves within a wide range of recreational activities

**Objective 4:** Increase connectivity between heathland areas

**Objective 5:** Maintain and perpetuate the stock of veteran oak trees of local provenance

**Objective 6:** Celebrate and protect the special qualities of the landscape

**Objective 7:** Protect soils and geology

**Objective 8:** Protect archaeological and historic environment features

**Objective 9:** Minimise disturbance impacts so that recreational activities coexist peacefully with heritage features and sensitive species and habitats

**Objective 10:** Control alien invasive species

**Objective 11:** Resolve hydrological issues in the stream valleys

### *Critical Success Factors*

1.3 A number of critical success factors were also drawn up against which management options could be assessed. These were that options should be:

1. Legally compliant
2. Get / keep habitats in favourable condition
3. Reconnect habitat blocks
4. Support the needs of key species
5. Fit in the landscape and protect tranquillity
6. Protect historic environment features
7. Keep sites welcoming and accessible for recreational activities
8. Affordable and sustainable
9. Practical and deliverable
10. Acceptable to the majority of stakeholders

### **Results of first consultations**

1.4 Our first report *Cannock Chase Options Appraisal* (Underhill-Day & Lake 2016) explains the main habitat management options appropriate for Cannock Chase Country Park in a table on pages 59-76. These options were set out under headings with a summary of the favourable condition objectives and critical success factors. The options were laid out as various management techniques, with the impacts, pros and cons of each.

1.5 These options have since been the subject of a stakeholder engagement process, word-for-word reports of which have been produced by Dialogue Matters under the headings "Shaping the future: Cannock Chase - land management", "Shaping the future: Cannock Chase – website survey" and Shaping the future: Cannock Chase drop-in event". These summarise the results of a stakeholder workshop (31 attendees), a drop-in event (23 attendees) and an on-line survey (54 respondents).

**Table 1: Summary of responses on consultation options from workshop and on-line survey.** For workshop responses, the word consensus was used when all responses were “could live with it”, “support” or “actively/strongly support” (other categories were not defined). For the online survey, consensus = 100% of responses in categories “could live with it”, “support” or “actively/strongly support”; strong support = at least 80% in the above categories; some support = at least 50-79% in the above categories; little support = at least 30-49% in above categories; no support = none in above categories.

Consultation options	Workshop with conclusion in blue	On-line survey
Clearing, selective felling & thinning scrub and trees	10 actively/strongly support 16 support 5 could live with it <b>Consensus reached</b>	6 best option 24 good option 16 I could live with it 1 Not happy 3 need to know more <b>Strong support</b>
Bracken cutting/bruising		
Cutting/baling heather		
Tractor, boom and aerial spraying with chemicals	5 actively/strongly support 11 support 12 I could live with it <b>Strong support</b>	1 best option 9 good option 12 I could live with it 23 Not happy 5 need to know more <b>little support</b>
Cut stump & spot treatment with chemicals		
Controlled burning-mature heather	5 actively/strongly support 8 support 4 could live with it 3 opposed 1 actively object <b>Strong support</b>	4 best option 14 good option 18 I could live with it 9 Not happy 6 need to know more <b>Some support</b>
Grazing livestock	13 actively/strongly support 14 support 4 I could live with it <b>Consensus reached</b>	11 best option 21 good option 12 I could live with it 5 Not happy 2 need to know more <b>Strong support</b>
Managing stock and access (fencing/invisible fencing, shepherding, cattle grids, etc.).	11 actively/strongly support 15 support 4 I could live with it 1 am opposed 1 actively object <b>Very strong support</b>	(Not considered)
Combinations of the above	(Not considered)	10 best option 9 good option 10 I could live with it 7 Not happy 6 need to know more <b>Some support</b>

- 1.6 The engagement addressed some of the options laid out in Underhill-Day & Lake 2016 (but excluded woodland management options, control of invasive species and disease, and turf stripping). Participants' views on each option are shown in Table 1. Summaries (in blue) for the workshop are given by Dialogue Matters, and for the on-line responses by ourselves (definitions of the summaries are given in the table caption): Although 23 people attended the drop in day, their responses were varied and could not be quantified or easily summarised, and so are not included here.
- 1.7 Overall, this suggests strong support for grazing and mechanical management, and some support for burning and to a lesser extent, use of herbicides. There was consensus within the workshop for managing stock and access. There was some support shown by the online survey for using combinations of all the management types discussed.
- 1.8 Following on from the consultations and the meeting of a working group drawn from the workshop participants (see *Cannock Chase land management working group report* 28<sup>th</sup> November 2016 from Dialogue Matters), it was agreed to pursue options for grazing, burning, and mechanical and chemical management and to present these for further consultation.
- 1.9 Options to carry out these management practices are explained and outlined in section 3 of this report.

## 2. Rationale and methods for management techniques

- 2.1 Most of Cannock Chase SSSI is currently classified as "unfavourable recovering" by Natural England. Unfavourable status is due to a lack of structural diversity and bare ground in the heathland habitats, dominance of Bracken in some areas, and a reduction in the area of valley mire<sup>1</sup>; the SSSI is considered to be recovering because management to address these issues is in place. However, Natural England considers that livestock grazing is required across the whole site if favourable condition is to be attained. It is recognised that the different heathland management techniques work synergistically, and that all will need to be used across the site. All techniques received support in the engagement process. The

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<sup>1</sup>

<https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1004497&ReportTitle=Cannock%20Chase%20SSSI>

rationale for using each technique is provided here, together with information on appropriate methods.

## Rationale

### Grazing & fencing

- 2.2 Grazing as a land-use helped shape heathlands across the Western Europe, helping to prevent succession to scrub and trees and creating a varied vegetation structure with areas of bare ground (Webb 1998). Heathland grazing died out in many places in the UK, particularly following agricultural intensification from the 1950s, as changes to agricultural economics made heathland grazing a less viable option within mainstream agriculture. However, the potential benefits of grazing heathland for nature conservation have been recognised (e.g. Bullock & Pakeman 1997; Lake 2002; Groome & Shaw 2015) particularly on wetter communities, and many heathland sites where grazing ceased are now grazed again (e.g. Bacon 1998). While few studies have been published on the benefits of grazing lowland dry heath, experience from site managers suggests the benefits are significant (see Newton *et al.* 2009).
- 2.3 The potential impacts of grazing were thoroughly explored in the *Cannock Chase Options* report (Underhill-Day and Lake, 2016). In brief, a review of published literature indicates that grazing at intermediate densities may maintain or increase dwarf shrubs on heathland, restricting the expansion of invasive grasses and bracken and is likely to produce maximum species and structural diversity, including the creation of bare ground habitat (Lake, Bullock & Hartley, 2001). On heathland, livestock will not necessarily control existing scrub and tree species without additional management, but will significantly help to reduce further scrub establishment. The impacts of grazing will depend on the type of stock used (including species, breed, gender, age, breeding status and background) and the timing and duration of grazing (Lake, Bullock & Hartley, 2001).
- 2.4 A consensus was reached about the suitability of using livestock grazing to manage Cannock Chase Country Park in the engagement workshop, with very strong support for stock management, while strong support for grazing was indicated in the online survey.

### Mechanical management

- 2.5 The removal of bracken, gorse, seedlings, saplings and trees is part of the management of most heathlands and is used to help maintain open, heather dominated or acid grassland conditions and prevent eventual succession to woodland. These techniques replace traditional uses of heathland including cutting scrub (and in some cases turves) for firewood, gorse for firing bread ovens and for

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winter fodder, bracken for livestock bedding, heather for thatching etc., (e.g. (Webb 1986).

- 2.6 Mowing on dry heath can be very effective in breaking up areas of even-aged and homogeneously structured heath. It is also a valuable technique for maintaining fire breaks. As mowing removes only the standing vegetation and leaves the lower layers of vegetation and the litter layer intact, the effect on the accumulated nutrient stores is modest; one study showed that with cutting every 10-15 years, the removal of the equivalent of 5 years of accumulated nitrogen may be possible. This assumes that some 24-33% of the nitrogen is stored in the above ground biomass, including litter, so that some 10-20% % of the total nutrients are removed depending on the height and efficiency of the cuts (Power, Ashmore & Cousins, 1998. Hardtle 2006; Power, Ashmore & Cousins 1998; Hardtle et al. 2006.
- 2.7 Consideration should be given to the landscape impact of felling and planting programmes on sites within the AONB. Where it is proposed to remove larger areas of woodland, an environmental impact assessment may be needed under the Environmental Impact Assessment (Forestry) (England and Wales) Regulations 1999.
- 2.8 Pine woodland has been successfully removed on many heathland sites and the areas restored to heathland. In some cases the removal of the trees has been followed up by litter removal to encourage heather regeneration from the seed bank, as heather seed is known to survive for many years under both conifer plantations and bracken beds (Pakeman & Hay 1996; Pakeman & Marshall 1997; Mitchell, Marrs & Auld 1998; Pywell et al. 2002). Where the litter layer under bracken is very dense, then breaking this up or raking it off can help to encourage regeneration of the heather seedbank. Where the vegetation has been changed from a heather dominated to a grass dominated community, then heather seeding has also proved effective (Penny Anderson Associates 2002).
- 2.9 Heather cutting is used to encourage diversity in the age and structural diversity of the heather community by encouraging the progressive regeneration of cut areas of older heather. It will in some situations, however be less effective than burning (see below) in removing the litter layer and encouraging regeneration from seed. As with burning, a cutting programme for some years ahead is best included in a comprehensive management plan. Heather mowing is useful where old heather is too scattered and degenerate to support a continuous burn; where there are constraints such as nearby housing or overhead power lines or steep slopes; or where weather conditions have precluded a burning programme from being adequately implemented. On the Chase, managers have found that mowing is less successful on old heather with limited regeneration and a tendency to be replaced with grasses.

## Burning

- 2.10 Controlled heather burning of heathland was originally linked to grazing management, providing fresh spring growth and recycling old and unpalatable heather. This is still practised by farmers on upland heaths for the benefit of sheep grazing. However, controlled burning also has a number of other benefits. Many heathlands contain large areas of even aged, heather dominated vegetation resulting from wild fires in the past. However, heather at different stages in the growth cycle (pioneer, building, mature and degenerate (Watt 1936) supports different communities of invertebrates<sup>2</sup> (Gimingham 1985; Kirby 2001). Ground nesting birds, including Nightjar also use different heathland areas for nesting and foraging (e.g. Cresswell 1993; Murison 2002).
- 2.11 More recently, the effects of atmospheric nitrogen inputs into the low nutrient systems of lowland heathland have been studied and burning is now recognised as one of a range of managements to reduce the nutrient loads on heathland by periodically removing the above ground vegetation and litter (Mohamed *et al.* 2005; Niemeyer *et al.* 2005; Hardtle *et al.* 2007).
- 2.12 Controlled burning of heathland has been practised for over two hundred years and remains a traditional method of management in the New Forest, where heather burning takes place most winters (Tubbs 1968, 1997; Wright & Westerhoff 2001). Other examples of where controlled burning is practised include some of the rural heaths in Dorset by Natural England and the RSPB.

## Chemical management

- 2.13 Chemical herbicides are used on heathlands at Cannock for three specific purposes; preventing regrowth from the cut stumps of deciduous trees (usually birch); to control bracken and bramble and to control dense regrowth of tree seedlings.
- 2.14 Available evidence suggests that Asulam application reduces the abundance of bracken although subsequent regeneration can be rapid. Multiple applications of Asulam are more effective than single applications. Qualitative evidence suggests that cutting could be as effective as Asulam application, particularly if two cuts are applied within the same growing season (Stewart, Tyler & Pullin 2005), however this could impact on ground nesting birds. Asulam can affect other fern species.

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<sup>2</sup> See <https://www.buglife.org.uk/advice-and-publications/advice-on-managing-bap-habitats/lowland-heathland>

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There are few published results on the effects of bracken bruising but it appears to be less effective than cutting (Cox 2007)

- 2.15 Bracken spraying, using Asulam has been a widespread management on lowland heathland for many years. There is a large body of scientific study to show that this treatment reduces bracken in the short term but without follow up treatment the bracken will return in a few years (e.g. Lowday & Marrs 1992; Marrs 1998; Marrs, Johnson & Le Duc 1998; Marrs, Johnson & LeDuc 1998a; b). Before embarking on a bracken spraying programme, if the intention is to permanently reduce the bracken cover, the need for a follow up programme in years subsequent to the initial treatment must be planned for.

### In combination

- 2.16 Heathland management techniques are most effective when used in combination with each other. The variety of impacts and interactions between them more nearly mimic the effects of traditional subsistence management that originally shaped and maintained heathland than any one technique used in isolation. For example, In addition to helping to reduce the need for bracken spraying and bramble control, grazing can assist in reducing regrowth after spraying treatment. Cattle will browse on young bramble and tree seedlings and regenerating scrub and trample bracken. The need for other treatments such as cutting and spraying are not removed by grazing, but the intensity of such treatments is reduced as they may be required less frequently in grazed and trampled areas.
- 2.17 Burnt areas are re-colonised early on by grasses, either from seed or the remains of grass tussocks (particularly Purple Moor-grass *Molinia caerulea*). Cattle favour young grass growth (Lake 2002) and can help to suppress the grasses and allow the slower growing heather to re-establish. Grazing can also help to control the regeneration of trees and scrub in burnt areas.
- 2.18 Grazing and trampling will help to diversify the heather communities. However it will not replace cutting or tree and scrub removal, although it will complement these techniques and can reduce the frequency with which these types of management are required.

## Suitable methods

### Grazing

- 2.19 Grazing methods need to take into account the many diverse objectives for the site and choices should be made that will meet the needs of all stakeholders.

## Livestock

- 2.20 Although sheep have historically been grazed on Cannock Chase, and would help meet some of the wildlife conservation requirements, the high level of use of the site by dog walkers makes sheep-grazing inadvisable because of potential problems with dog worrying. Experience from similar, extensive sites (e.g. Ashdown Forest), suggests that sheep worrying may well be an issue. In addition, sheep require netting around any area to be grazed, and are unsuitable for use with invisible fencing. Extensive netted fencing around and across Cannock Chase could have a significant impact on the landscape and public access. An alternative could be shepherding. However, shepherding was found to be logistically difficult on Ashdown Forest and has been abandoned. A shepherding system has been used by the Anglesey Grazing Animals Partnership for a number of years but it is limited to a small number of days per year, which would not be adequate to achieve conservation objectives at Cannock Chase Country Park.
- 2.21 Pony grazing is often carried out on heathlands, and free-ranging native ponies graze many extensive heathland sites such as the New Forest, Dartmoor and Exmoor. Ponies are also used for more focussed conservation grazing on many smaller sites including, for example, many of the Dorset Heaths and Chailey Common in East Sussex. Pony grazing can have a different impact to cattle grazing (e.g. see Lake 2016). Graziers are also more likely to allow ponies to outwinter than cattle, extending the grazing season and allowing seasonal variation in foraging behaviour to occur. However, horse riders may be wary of pony grazing if unaccustomed to it. Although trials are underway, it is not yet known whether effective invisible fencing can be used with ponies.
- 2.22 We suggest that cattle would be the best livestock to use initially on Cannock Chase. All members of the working group felt that cattle should be the first priority. They are robust on sites with dog walkers, suitable for use with invisible fencing, and able to graze rank grasses such as the ungrazed Purple Moor-grass abundant on Cannock Chase. However, other livestock types, particularly ponies, should not be ruled out further down the line (although note that 2/3 of the working group considered sheep to be a second priority, while 1/3 thought ponies should be the second priority).
- 2.23 The cattle used should be of a hardy, docile breed, ideally with some experience of grazing extensive, semi-natural habitat, although more commercial breeds with good experience and background may be effective. The breed chosen should ideally be sure-footed on steep slopes. Further information on the pros and cons

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of different breeds can be found in the GAP Breed Profiles Handbook (Tolhurst & Oates 2001). We would recommend a hill beef breed such as Highland or Belted Galloway, however other breeds would also be suitable. Bulls and young calves should not be grazed on site.

- 2.24 In general, it is best to avoid overly prescriptive stocking rates, as appropriate stocking levels and timings will depend on a number of factors including the conservation objectives, the livestock type and their prior experience, the area of graze-able vegetation etc. One animal per 10 hectares is a useful rule of thumb for heathland and offers an initial starting point, but other factors such as herd management also need to be taken into account. If the site is divided into a number of smaller grazing units with only a subset of these grazed at any one time, it may be necessary to increase the number of grazing animals per hectare to compensate for a shorter grazing period.
- 2.25 Cattle are usually grazed on heathland during the summer months (e.g. May – October), however, suitable breeds may be out-wintered at low densities. The need for supplementary feed would need to be carefully assessed, and the pros and cons of winter feeding versus the potential impacts of supplementary feeding weighed up.

### Stock ownership

- 2.26 Options to consider include grazing in-house, letting the grazing to a farmer, using a conservation grazier or conservation grazing service or working with an agricultural college. The pros and cons of most these options were discussed in *Cannock Chase options appraisal* and are not repeated here. The financial implications are outlined below. An alternative would be to develop a grazing animal partnership with other sites and organisations in the area where there is a partnership approach to the provision and supply of the infrastructure, equipment and stock, sharing of advice and support and a collaborative approach to marketing (often including branding), ideally not only working within the conservation industry but also actively developing links with the livestock, agricultural and rural industries (see Grayson & Swanson, 2008). In the case of Cannock Chase Country Park, this could include, for example, the RSPB owned area, the currently grazed heathland ‘corridor’ on Forestry Commission land, and Chasewater Country Park.
- 2.27 Another option is [Community Supported Agriculture](https://communitysupportedagriculture.org.uk/what-is-csa/types-of-csa/)<sup>3</sup> (CSA). CSA farms may be producer or community led and/or owned and also offer scope for volunteer input. There are various models that generally revolve around members of the local

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<sup>3</sup> <https://communitysupportedagriculture.org.uk/what-is-csa/types-of-csa/>

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community joining a scheme to support producers and receiving a share of produce in return for their investment. This has much potential in terms of community involvement and sense of ownership, but would need significant organisational input in addition to interested farmers with appropriate livestock systems.

- 2.28 In practice the decision is likely to depend on which proves the most feasible option. It would be an advantage to develop a positive relationship with the local farming community. However, given that the site has not been grazed for a considerable time, there may be a perception among local farmers that it is not worth grazing, and farmers may need reassurance – a visit to a site such as Sutton Park where heathland is grazed by local graziers may help. We do not currently know of a conservation grazier within the area, and research would be needed (e.g. word of mouth locally and via the [Nibblers](#) network).

### *Mechanical*

- 2.29 Bracken cutting takes place in June/July/August with twice or thrice cutting most effective. However, this is also a period during which there may be ground nesting birds, particularly Nightjar. Bruising twice or thrice yearly was found to be ineffective and was not recommended (Milligan et al. 2016) – it is not considered further here. Bracken cutting can be carried out by hand or by tractor-mounted cutters. The most effective cutting regime involves cutting twice in the first year in mid-June and late July and then once a year thereafter (Paterson, Marrs & Pakeman, 1997, Snow & Marrs 1997, Marrs, Johnson & LeDuc, 1998a). This is at a time when there can be ground nesting birds which could be affected by disturbance, heavy machinery and trampling. In areas where Bracken had been long-established on Cannock Chase, cutting accompanied by baling to remove cut material was more successful than bruising and cutting alone.
- 2.30 Trees and scrub can be cleared by machine or by hand. Machine clearance is usually only viable for larger areas of secondary woodland or scrub and in these circumstances can be cheaper than hand clearance. Hand clearance is usually carried out using chainsaws and the material either burnt or chipped. Any material left would normally be removed off-site to avoid adding nutrients to the soil. The number of fire sites should be minimal and on corrugated iron sheets or similar. Imported materials should not be used to light fires. Seedlings can be hand pulled by work parties, including volunteers. Tree and scrub clearance can take place during winter when there are no breeding birds present but care needs to be taken to avoid disturbing hibernating bats and reptiles.

- 2.31 Heather mowing is limited to fairly even ground using a tractor and cutter, such as a double chop forage harvester or flail and baler. The arisings should be removed from the site.

### *Chemical*

- 2.32 Cut stumps of broadleaved species which are being removed to allow heathland habitat to recover are usually spot sprayed, painted or drilled and injected with herbicide during winter or early spring to prevent re-growth. Where stumps are too small or too numerous for this treatment, targeted spot spraying in successive seasons can also control re-growth. This use is targeted and small scale.
- 2.33 Bracken spraying can be carried out using a wide variety of methods ranging from hand held applicator to tractor-mounted booms and aerial spraying from helicopters. The most effective methods are treatments from motorised backpack mist sprayers and tractor boom sprayers compared to hand sprayers, knapsacks, weed wipers and rope wick applicators although the methods used at any one site tend to depend more on practicalities and costs than effectiveness (Stewart, Tyler & Pullin 2005). The use of chemical sprays seems to be generally more effective when it is mixed with a surfactant to improve penetration of the leaf surface. At one site bracken has been virtually eliminated following annual spraying for 8-9 years (Spaunton Moor-North York Moors National Park), but otherwise there are no reports of any treatment eliminating bracken. A recent study at Spaunton Moor comparing different methods and carried out over eight years found that cutting twice or thrice yearly or spraying with Asulam in year 1 followed by annual spot re-treatment of all regrowth all reduced frond density to zero (Milligan *et al.* 2016).
- 2.34 Helicopter spraying has not been scientifically evaluated but it appears it can be effective in reducing bracken cover (e.g. at Haweswater in the Lake District and at Arne in Dorset). However, the use of aerial spraying can be controversial and on public access land it can be difficult or impossible to remove people and their pets while spraying takes place and for a period afterwards. Helicopter spraying has been used at Cannock but the larger areas of bracken have now been given initial large scale treatment and most bracken control is now follow-up spot spraying (S. Sheppard pers. comm.). Aerial spraying is not considered further here.
- 2.35 A bracken spraying programme should be part of an overall management plan which sets targets for bracken control with mapped areas for treatment over 5-10 years ahead. Spraying should take place in late July/August when the fronds have reached their maximum size. Areas to be sprayed should be checked for breeding birds prior to spraying and the areas to be sprayed need to be marked out. Those undertaking spraying should wear protective clothing and follow manufacturer's

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recommendations. The public should be excluded while spraying takes place and until dry. Livestock should also be removed for 14 days after spraying (as bracken becomes more palatable after spraying) and bracken fronds or bramble should be left uncut for a similar period. Bramble is best cut and the regrowth spot sprayed following an inspection for other plant species which could be damaged by the chemical.

- 2.36 Consents for spraying will be required from Natural England on the SSSI/SAC and the Environment Agency should be consulted over any spraying proposed near water.

### Burning

- 2.37 Controlled burning is permitted by law only in the winter in the uplands between 1st October and 15<sup>th</sup> April and elsewhere (which presumably includes Cannock Chase) between 1<sup>st</sup> November – 31<sup>st</sup> March; in practice, most controlled burning is done in February-March. Guidance is available from the Heather and Grass Burning (England) Regulations (DEFRA 2007). The methodology usually includes cutting a firebreak in October or November and then carrying out a burn in spring during suitable weather. A minimum of three people should carry out the burn, (possibly more depending on size of areas to be burnt and the weather conditions of humidity and wind) and should be accompanied by a tractor and water bowser. Most burns will be with or against the wind depending on the requirements for the intensity of the fire and its speed over the ground, and will be restricted to a fire front of about 30 metres and an indeterminate length depending on habitat and topography. In most controlled burns the objective is to burn most of the above ground vegetation and litter but at a temperature that will retain alive the bases of existing plants and leave the seed bank undamaged. This will result in regeneration from existing plants and seed, creating a mosaic of new and established plants.
- 2.38 Burning is not generally appropriate on steep slopes where deep burns are more likely and erosion can result (but on Cannock Chase quick burns on slopes have in the past been successful); in bracken-dominated areas (as this can encourage bracken growth); under electricity or other service carried on poles, or close to housing or other development. Burning can be used as a means of controlling developing scrub, particularly when this consists of young conifers.

## 3. Options

- 3.1 Three options are presented here for the management of Cannock Chase Country Park (see Maps 1-3 and text below). It is recognised that grazing is needed across

## Cannock Chase management options

as much of the site as possible, and therefore the options revolve around how grazing is managed at different locations, rather than whether or not particular areas are grazed. The other key management techniques discussed above will be used to complement and facilitate grazing. A management planning process will be needed to determine where these techniques are used and the frequency with which they are needed. This will partly depend on the impacts of grazing, which will vary across the site depending on livestock behaviour and management and are difficult to predict in spatial terms. While it is not possible at this stage to identify areas where grazing will lead to a reduction in the need for other management types, it is anticipated that the presence of grazing livestock will decrease the extent and frequency with which these other management types are used.

- 3.2 A key consideration will be the concerns of some visitors about entering enclosures with livestock present, particularly if the visitor is accompanied by dogs. In many places, large numbers of visitors (with and without dogs) access areas with livestock present without problem. However, it needs to be recognised that some visitors will seek to avoid grazed areas and at a site as large as Cannock, it should be possible to manage a grazing regime such that some areas are free of grazing livestock at any one time.
- 3.3 Each option is appraised in section 4 with reference to the success criteria given in section 1.3.

## Containing livestock

- 3.4 Cattle need to be contained on the site. Herding the livestock (i.e. a stockperson remaining present with the herd to move them) is not recommended for further consideration due to the difficulty in keeping the stock under close control and the proximity of busy roads (although it could be used to focus grazing if the roadside boundaries were fenced). Other options include conventional permanent cattle fencing (which will be referred to as conventional fencing from now on), electric fencing and invisible fencing. These were described and the pros and cons discussed in the *Cannock Chase options appraisal* report.
- 3.5 The use of electric fencing has been discounted due to the ongoing cost of staff time needed to clear and maintain fence lines, erect, maintain and dismantle the fence; the vulnerability of electric fencing and associated equipment to theft and vandalism, the cost of replacement and the unsightly nature of electrically fenced enclosures.
- 3.6 Permanent fencing is recommended along or near roads, as experience from sites such as Epping Forest and Ashdown Forest has shown that cattle can on occasion escape through invisible fencing. However, invisible fencing should be considered

## Cannock Chase management options

in places away from roads where conventional fencing would be particularly unsightly (e.g. visually exposed boundaries and crossing open heathland) and where any escape, although undesirable, would not be high-risk. Invisible fencing is also less expensive and generally easier to install than conventional fencing, but the livestock need to be trained for it to be effective. Care is also needed when installing this type of fencing in areas where there are underlying features of historical interest.

- 3.7 In the options outlined below, all options require perimeter fencing. Option 2 requires additional invisible fencing within the main area to create three grazing units. Option 3 then requires further fencing, in addition to that required for Option 2, to create 8 grazing units within the main area.
- 3.8 Before further consultation, it would be useful to walk the line of proposed fences to check for further access points, any unforeseen constraints, and the condition of existing fencing. Consultation will be needed with the residents of adjoining properties in terms of replacing the existing fence and suitable provision at access points.

## Other infrastructure

- 3.9 For each option, additional considerations include access points (farm gates or pedestrian/equestrian gates), handling facilities and water supply. Access points are mapped. Other infrastructure needs would ideally be discussed with potential graziers, who would have a good idea of how they would prefer to manage livestock on the site, before decisions are made (e.g. they may have a preferred design or location for a handling system and views on water supplies). Some suggestions are made in the text below.

## Option 1

- 3.10 Option 1 involves fencing the perimeter of the main area of Cannock Chase Country Park. Brindley Heath, Moors Gorse, and a field adjacent to Moors Gorse would be fenced separately. This would result in four grazing units as shown in Map 1. Note that this is illustrative at this stage and that a final line will depend on practical considerations and discussions with adjoining owners. A small area is excluded west of the disused quarry at Brocton to avoid the creation of pinch points, together with a difficult corner on a bridleway east of Milford Common and an undesignated area west of properties at Broc Hill. The open amenity grassland of Milford Common is also excluded, to prevent conflict with recreational use and to avoid altering the unenclosed nature of the common near the village. The far eastern end of the Seven Springs area is also excluded, as this is woodland and a

## Cannock Chase management options

visitor hotspot. Although this would involve a conventional fence crossing the common, it should be possible to conceal it within the trees here.

- 3.11 Conventional fencing would be used along all public roads and adjacent to housing. Wherever possible, the fence could be set back from the road by about 10m to conceal it in woodland. If this is not done, it will be necessary to set bridleway gates back onto the common to ensure there is plenty of room for horse riders to manoeuvre. Invisible fencing is suggested for the boundary with the Forestry Commission land to the east; the exact location of the fence line is under discussion with the Commission as fencing (either conventional or invisible) could not be installed along the actual boundary where this is formed by the stream.
- 3.12 Assuming invisible fencing is to be used, we recommend a phased approach starting with Moors Gorse and Furnace Coppice field together. These areas are not on common land, and therefore consent from the Planning Inspectorate (PINS) would not be necessary. If first enclosed with conventional fencing, Furnace Coppice Field would be suitable as a training area for familiarising cattle with invisible fencing (possibly in stages, depending on the size of the herd used). However, the need for this will depend on the grazier used, whether the grassland itself is of sufficient quality and quantity to support livestock and whether this resource is available elsewhere, and so discussion with potential graziers should take place before embarking on any fencing here. The grazing unit at Moors Gorse could then be used to trial the logistics of cattle grazing (including the efficacy of the invisible fencing) in a quiet part of the site.
- 3.13 The Brindley Heath grazing unit does not use invisible fencing, providing a conventional fencing-only option that could be implemented without the need for invisible fencing trials and this could be installed once the trials (which are likely to be the priority) are underway. It would however require official consent as it is on registered common land.
- 3.14 The fencing on the main area could then be carried out. Fencing should be carried out in a timely fashion to prevent the necessity for having to reapply for consent from PINS.
- 3.15 A permanent handling system is suggested at the corner of Chase Road (Chase Road Corner). However, it is suggested that potential graziers are consulted as to the location, as every effort should be made to make the grazing system as workable as possible. A permanent system could also be installed off the common at Furnace Coppice Field and possibly on the small paddock near West Cannock Farm by Brindley Heath. It is suggested that this paddock, which is off the common, is fenced to separate it from the main grazing unit to provide a handling area. An additional gate straight onto Brindley Heath may be required.

## Cannock Chase management options

- 3.16 Drinking troughs would be required for Brindley Heath, Furnace Coppice Field and Moors Gorse and possibly elsewhere (such as on the main body of the Country Park Option 1, or in Grazing Unit 1 in Option 3). Ideally these would be mains fed. Maps of water mains will be required to establish where they could be located. Commons consent is not needed for drinking troughs, but would be needed for laying pipes across registered common land (i.e. on Brindley Heath). Natural water sources are present on the main area, but it is suggested that mains water is supplied adjacent to the handling system to ensure there is one dependable source and to prevent trampling and overgrazing of mire habitats.
- 3.17 The herd size could be around 10-15 for Brindley Heath. On Moors Gorse, far fewer animals would be needed for long-term grazing. The main area could in theory support a much bigger herd (e.g. around 50 animals) - such a large group would be likely to break into smaller herds, particularly later in the summer.

## Option 2

- 3.18 This involves using two additional fences to divide the main area of the country park into three grazing units. Perimeter fencing would be required as for Option 1 above, and Brindley Heath, Moors Gorse and Furnace Coppice Field would remain the same as in Option 1. We suggest invisible fencing is used for the additional divisions on landscape grounds and to minimise inconvenience to visitors using the site. Note that the invisible fence lines shown in Map 2 are indicative only; the actual line would depend on the exact lie of the land and the presence of historic environment features. Invisible fencing does not require commons consent, and therefore the exact locations can be changed as needed, e.g. following advice on the workability of the proposals from the invisible fencing providers.
- 3.19 An additional handling system could be installed at Coppice Hill car park, or mobile facilities used for grazing unit 1 in the north of the site.
- 3.20 This option would mean that at least one part of the main area could be kept free of livestock at any one time, giving visitors wishing to avoid livestock alternative places to go. Herd size might be in the region of 20-30 within each grazing unit when in use, although it may be desirable to increase this if the period of grazing is reduced provided this does not have a negative impact on wildlife and historic features of interest.

## Option 3

- 3.21 Option 3 would entail dividing the main area of the country park into eight grazing units of between 26 and 172 ha. This would require a further five invisible fences in addition to those shown in Map 2 and the perimeter fencing shown in Map 3.

## Cannock Chase management options

Again the southern grazing units of Brindley Heath, Moors Gorse and Furnace Coppice Field would remain the same as in Option 1.

- 3.22 Care would be needed in planning invisible fence loops to ensure separate loops were used for each unit and for fences shared between units. Consideration would need to be given to "gates" in the invisible fence, should there be locations at which it would be desirable to keep the fence switched on when livestock were moved between units to ensure they remain within the desired area. In this case, conventional gates with wings may be necessary and would require consent from PINS.
- 3.23 Further thought would also need to be given to suitable handling facilities should this option be pursued. Water would need to be provided in Unit 4 Seven Springs, Unit 3 Brocton Coppice and Unit 8 south of the Katyn area.
- 3.24 Herd size would vary between less than five to around 20 cattle depending on the size of the unit, with perhaps four units grazed at any one time. However, this would be adapted according to season and the amount of forage available in each unit, and may be increased to compensate for reduced grazing period when areas are left ungrazed. The use in this option of a greater number of units would allow more spatial control over impacts, but is likely to decrease the diversity of impact compared to that potentially found in large systems due to livestock behaviour. It would also require greater input from the grazier in moving livestock around. The separation of Brocton Coppice from the surrounding area would reduce the likelihood of the spread of Phytophthora from this area to others; however, Natural England's woodland and heathland specialists do not consider this to be a barrier to grazing, as the risks apply to any management approach on this site.

## Cannock Chase management options

**Table 2: Infrastructure needs for Option 1 Cannock Chase Country Park**

Grazing unit	Area (ha)	Perimeter (km)	Fencing type	Water	Handling	Notes
1 Main area	794.0	22.6	Invisible, existing & conventional	In brooks and meres, with possible mains fed troughs (e.g. at Chase Road corner and elsewhere)	Permanent handling system e.g. at Chase Road corner	Conventional fencing along road and around properties, invisible fencing along boundary with FC, possibly set back into forestry. Short stretch of conventional fencing hidden in trees near Seven Springs for security
3. Brindley Heath	157.6	4.6	Existing & conventional	Piped or possible (e.g. from mains servicing adjacent housing)	Mobile pen or consider permanent system in paddock nr. West Cannock Farm (off common)	Too close to roads/housing for invisible fencing. Not all fencing needs to be on common land (allowing later addition of access points if needed). Most fence lines can be hidden in woods
4. Moors Gorse	16.5	1.6	Invisible, if railway line is secure	Bowser, or piped across Furnace Coppice (or may be possible from Forest House)	Could construct handling system in adjacent field (or use mobile pen)	Quiet location off common, could be a good starting point for invisible fencing
5. Furnace Coppice field	7.5	2.7 (double fence)	Conventional containing invisible for livestock training, also possibility of use for back up (check resilience of soils/sward)	Bowser or if possible piped.	Could construct in field, ideally adjacent to Moors Gorse, or use mobile pen	Consult with likely grazier before committing, in case back up land and training is available off-site. No commons consent needed. Might need supplementary feeding whilst training, if sward is insufficient.

### Cannock Chase management options

**Table 3: Additional Infrastructure needed for Option 2 (i.e. not including perimeter fencing and infrastructure listed under Option 1).**

Grazing unit	Area (ha)	Additional fence (km)	Fencing type	Water	Handling	Notes
1 Northern area	298	1.4	Invisible	In meres and Sherbrook, at handling system	Possible additional permanent handling system near Coppice Hill car park	
2. Central area	288	1.5	Invisible	In Oldacre Burn and Sher Brook, at handling system	See Table 4	Also needs fence listed under northern area
3. Southern area	222	-	Invisible	In Sherbrook and at handling system	See Table 4	Requires fence listed under central area

Cannock Chase management options

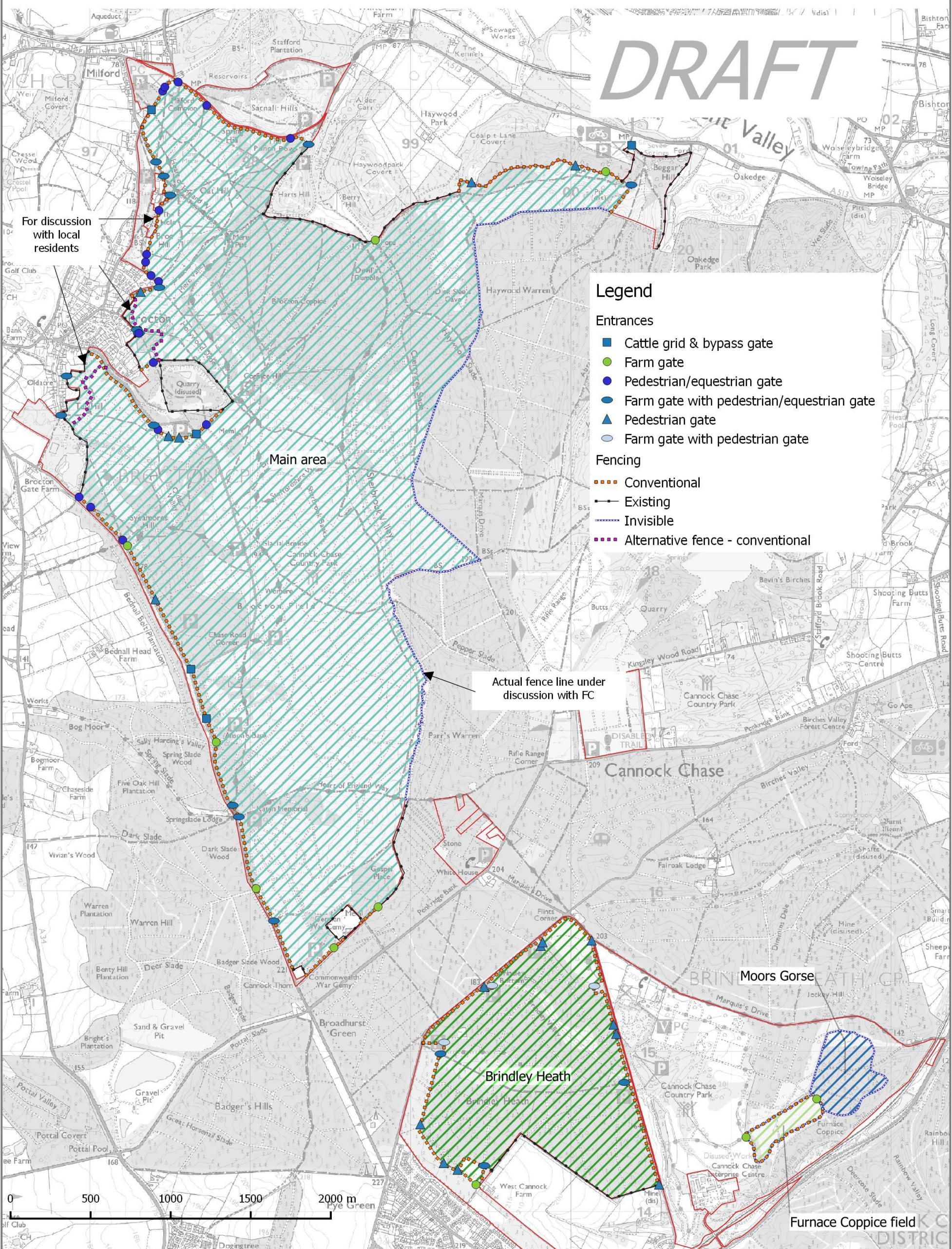
**Table 4: Additional Infrastructure needed for Option 3 (i.e. not including perimeter fencing, invisible fencing and infrastructure listed under Option 1 and Option 2)**

Grazing unit	Area (ha)	Additional fence (km)	Fencing type	Water	Handling	Notes
1	128.6	1.4	Invisible	Meres (plus possible trough fed from nearest main).	Use system near Coppice Hill car park (see Table 3)	Fences separate area west of Brocton Coppice from Unit 2 Brocton Coppice
2	75.7	0.9	Invisible	Bowser probably required or piped water from nearest main	Use system near Coppice Hill car park (see Table 3)	Also requires above fence. Divides Brocton Coppice from Units 3 and 6 east and south of Brocton Coppice
3	70.4	0.3	Invisible	Sher Brook	Mobile pen or move stock to system near Coppice Hill car park	Also requires above fence. Separates Seven Springs from area east of Brocton.
4	26.4	-	Invisible	Bowser required	Mobile pen	Requires above fence
5	114.9	1.5	Invisible	Oldacre Burn/trough at handling system	Use system at Chase Road corner (see Table 2)	Requires part of above fence for 1. Separates Oldacre valley from Sherbrook valley in north
6	172.7	-	Invisible	Sherbrook/ trough at handling system	Use system at Chase Road corner (see Table 2)	Requires above fence
7	142.2	1	Invisible	Sherbrook	Use system at Chase Road corner (see Table 2)	Also requires above fence
8	82.6	-	Invisible	Piped water from nearest main	Mobile pen	Requires above fence

# Cannock Chase management options

## Map 1: Provisional fence locations for Option 1

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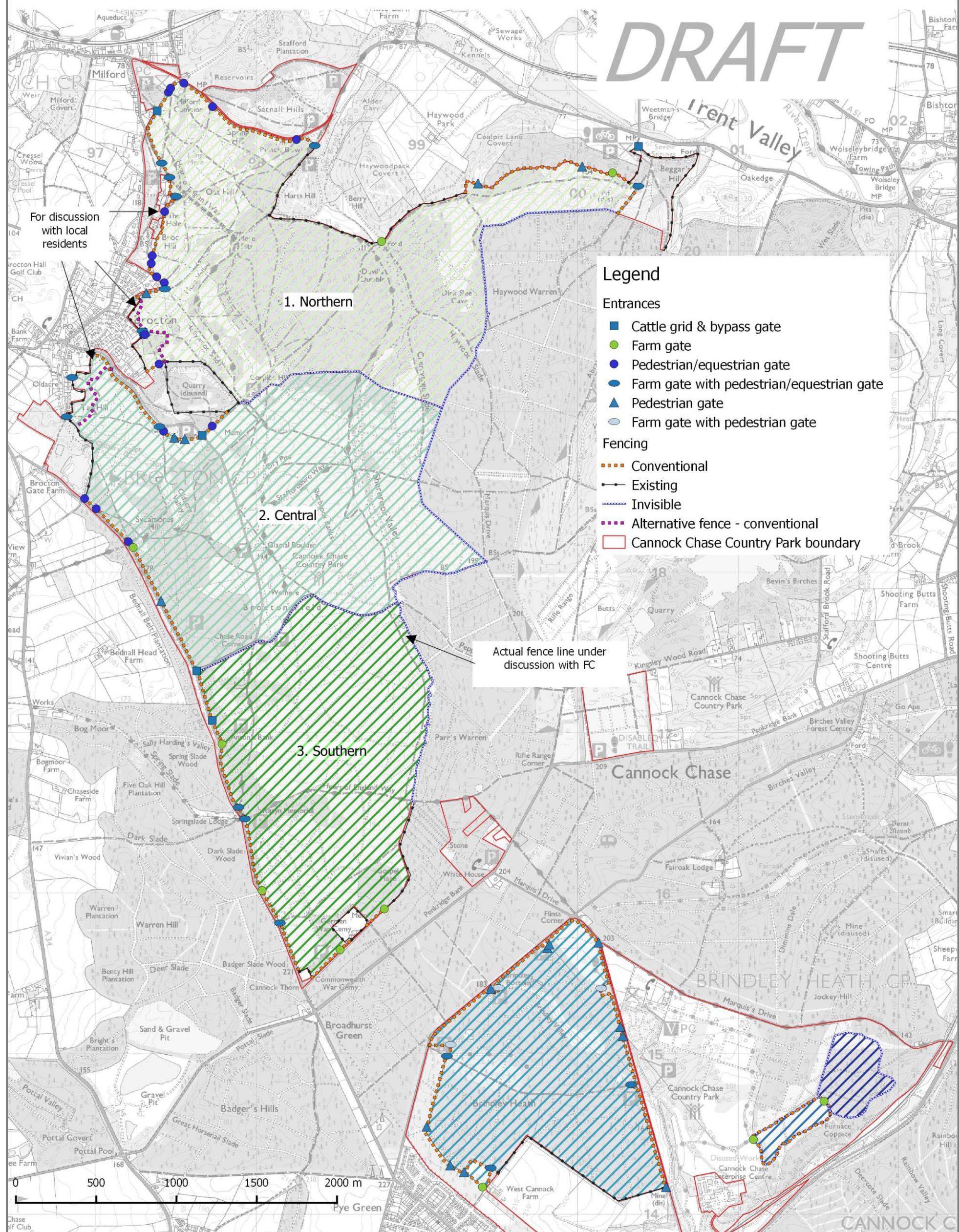


# Cannock Chase management options

## Map 2: Provisional fence locations for Option 2

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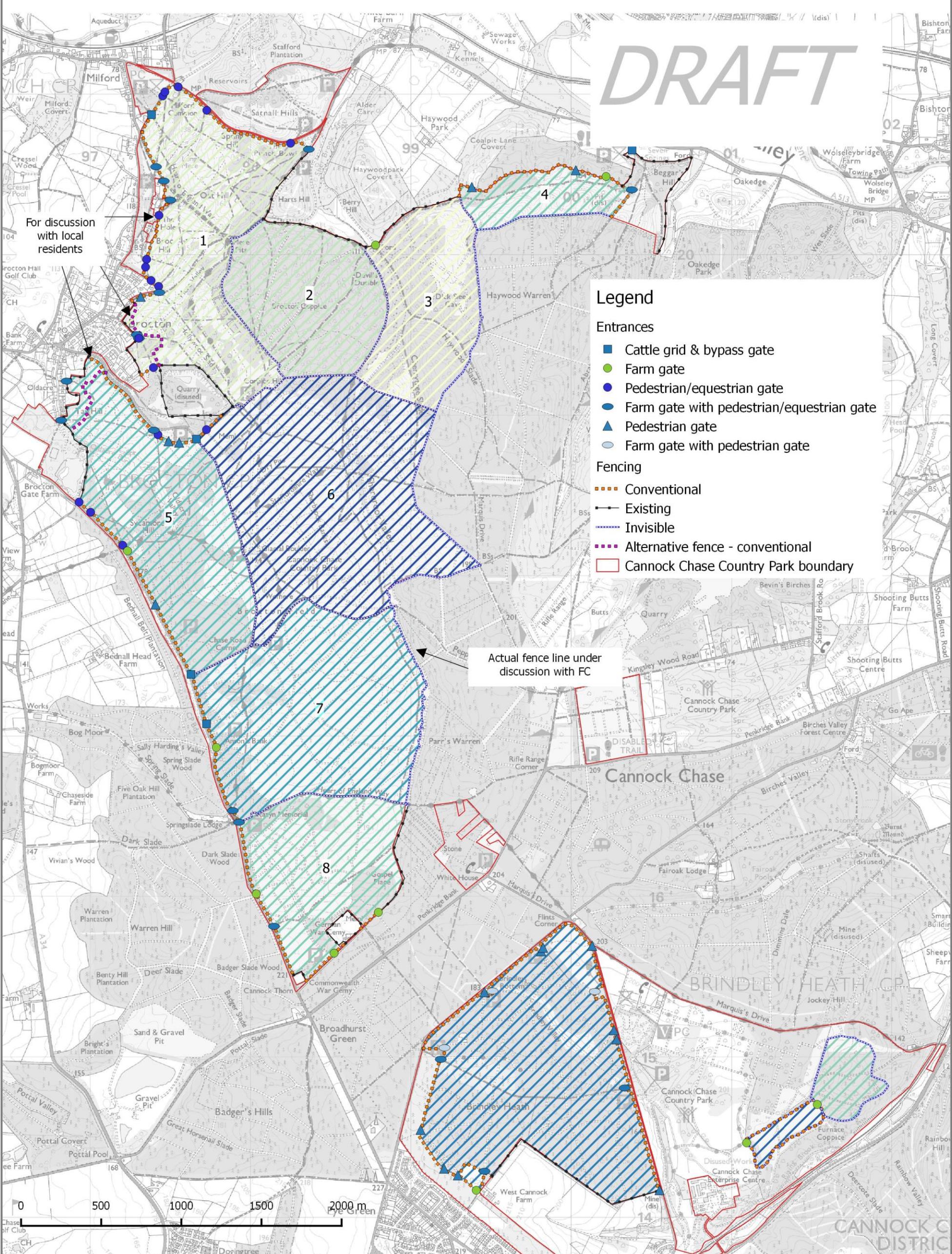
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# Cannock Chase management options

## Map 3: Provisional fence locations for Option 3

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## Costings

- 3.25 The cost of using a grazier or employing a conservation grazing service is considered separately under 'Feasibility' due to the complexity of the options. The cost of grazing in-house would be significant. It would incorporate the cost of livestock (which will depend on the breed and breeding status of the livestock chosen) and potentially buying or leasing a farm base and associated infrastructure. Ongoing costs, which could be at least partly offset by income generated, would include employing a stockperson (and relief stockperson) and the running costs for the enterprise (including veterinary costs, supplementary/winter feed and bedding if housed, farm maintenance etc.). Such an enterprise would need to be the subject of a business plan (taking into account any resources, including a farm base, that SCC might already have), and is outside of the scope of this appraisal.
- 3.26 Table 5 indicates the potential set up costs for each option based on the metres of fencing required and number of gates. Where fencing already exists, it is assumed that this will need to be replaced, but this may not necessarily be the case in all locations (the amount of existing fencing is indicated in the table). This would also require consultation with the landowners, as would the issue of any gates to properties. Where invisible fencing is required, costs are given for double the distance (to approximate the distance of the loop required). Costs for generators are given on the basis of one per 2km loop but in some cases loops might be smaller (to allow for different grazing units to be switched on independently) and therefore this cost would increase. Costs include collars for 50 cattle for the main area and three for Moors Gorse (and it is assumed that no additional cattle would be needed for Options 2 and 3, as the same number of stock would be split between different grazing units).
- 3.27 For invisible fencing, indicative costs for other items required (given below) are incorporated into the fencing cost:
- Collars (£30x per cow)
  - Units (£220x per cow)
  - Invisible fencing cable (£270 per 500m cable)
  - Cable joints (£30 each)
  - Generator (per 2000m) (£340)
  - Mole in cable £2/metre
  - Other costs, delivery etc. £500
- 3.28 These are all one-off set up costs that should last for the duration of the fencing (to be confirmed with supplier) with the exception of collars, which would need to be replaced annually. Batteries may also need replacing.

## Cannock Chase management options

3.29 Other infrastructure would be required depending on the options and the needs of a grazier. Some indicative costs for different items are given below (actual costs would depend on source and preferred model etc.)

- Drinking trough (c£90 + piped water)
- Mobile handling system (c£11,500)
- Fixed handling system (c£4,500)

**Table 5: Indicative set up costs of fencing for the grazing options shown in Maps 1-3.** It is assumed that all existing fencing will need replacing (which may not always be the case). Fence distances are approximate and will depend on the final position chosen. Costs are also approximate and will depend on the contractor used for installation and invisible fencing supplier. For invisible fencing, costs assume 50 cattle, and the length of fence required is doubled to allow for the creation of loops (and is based on Boviguard system). All figures plus VAT.

Type of fence	£ cost per item/km	no./km	Cost	Existing fencing included (m)
<b>Option 1</b>				
<b>Main area</b>				
Conventional fencing	6000	17.22	£103,320	7.67
Invisible fencing (inc. cattle collars and units)		5.55	£43,900	
Farm gate	460	7	£3,220	
Pedestrian gates	500	6	£3,000	
Pedestrian/equestrian gates	525	17	£8,925	
Farm gate + pedestrian/equestrian gate	950	14	£13,300	
Cattle grid & bypass gate	6000	5	£30,000	
<b>TOTAL</b>			<b>£205,665</b>	
<b>Brindley Heath</b>				
Conventional	6000	4.57	£27,420	1.29
Farm gate	460	1	£460	
Farm gate + pedestrian/equestrian gate	950	3	£2,850	
Pedestrian/equestrian gates	525	10	£5,250	
Farm gate + pedestrian gate	925	3	£2,775	
<b>TOTAL</b>			<b>£35,980</b>	
<b>Moors Gorse</b>				
Invisible fencing (inc. cattle collars and units)		1.64	£6,088	
<b>TOTAL</b>			<b>£6,088</b>	
<b>Furnace Coppice field</b>				
Conventional fencing	6000	1.37	£8,220	

## Cannock Chase management options

Type of fence	£ cost per item/km	no./km	Cost	Existing fencing included (m)
Invisible fencing (inc. cattle collars and units)		1.36	£5,192	
Farm gates	460	2	£920	
TOTAL			£14,332	
<b>Additional costs for option 2</b>				
Invisible fencing (inc. cattle collars and units)		2.92	£16,364	
<b>Additional costs for option 3</b>				
Invisible fencing (inc. cattle collars and units)		2.26	£12,592	
TOTAL ALL OPTIONS			£291,021	

3.30 Indicative costs for burning, chemical use and mechanical management using contractors are given in Table 6 below, together with an indication of ongoing costs for invisible fencing (i.e. collars). These are approximate and have been derived from a number of sources in different parts of lowland England. Costs for transport to and from site have not been included, as these will depend on distances contractors have to travel.

**Table 6: Approximate costs of management work on heathland excluding costs of transport to and from site**

Management operation	£/ha
Cutting firebreaks for burning	400
Heather burning	300
Heather cutting	400
Heather baling (not inc. loading/transport)	400
Bracken cutting	400
Bracken spraying tractor and boom excl. chemicals	220
Chemical for tractor boom spraying	100
Bracken spraying by hand	500
Scrub clearance by hand and burn on-site:	
Dense	6,500
Moderate	4,500
Light	1,800
Scrub clearance by tractor/cutter and burn:-	2,500
Moderate	1,000
Light	
Ongoing costs for invisible fencing - collars	1,500 pa for total area

## 4. Appraisal

### Feasibility

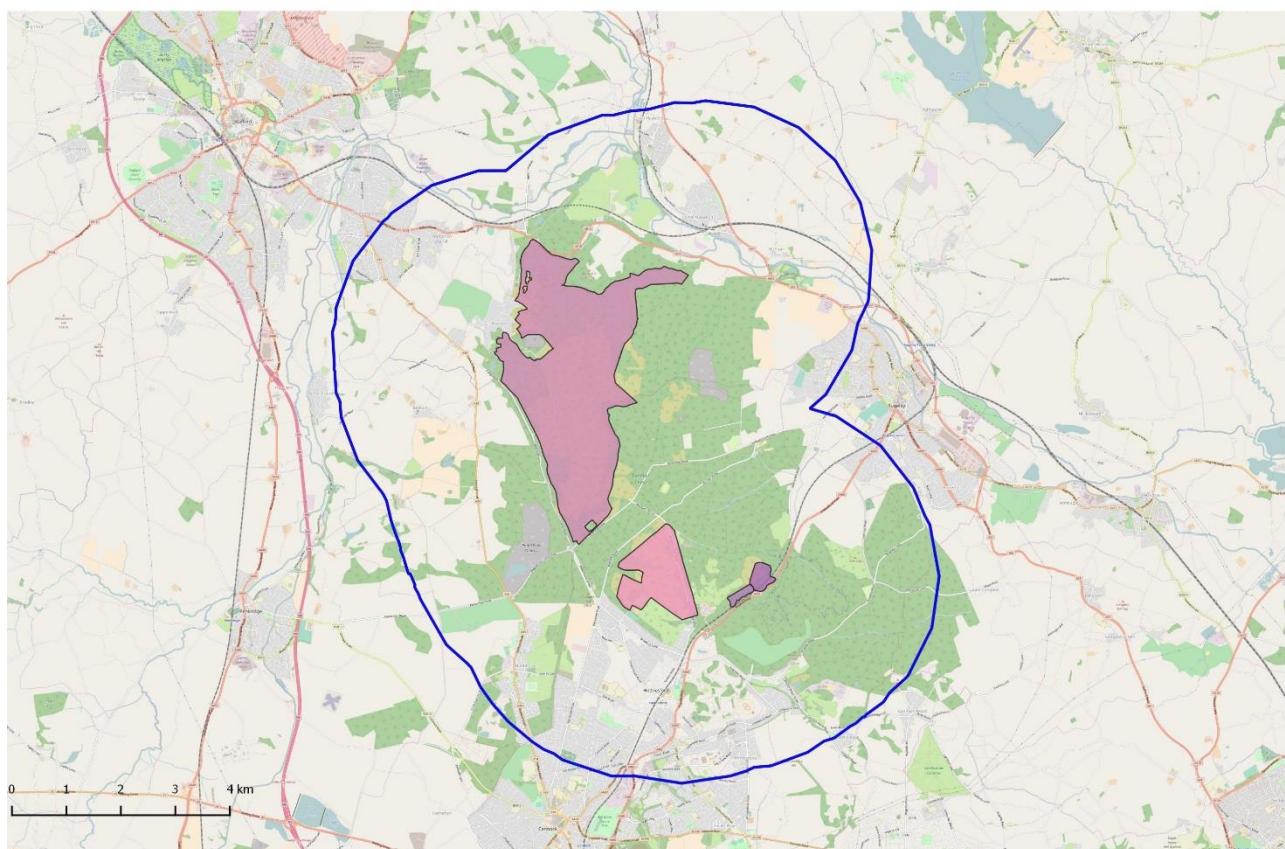
#### *Welfare & husbandry*

- 4.1 There is plenty of information available on the welfare considerations of grazing extensive semi-natural sites (see *Cannock Chase options appraisal* report) and provided an appropriate system is put in place this should not be a constraint. To ensure the system is appropriate, a grazing plan, animal health plans, livestock and site risk assessments will be needed (further information will be provided in the implementation plan to be produced following the next consultation if required).
- 4.2 Two aspects of husbandry that should be considered at this stage are those concerning livestock movements and disease (particularly Bovine Tuberculosis-bTB). Unique agricultural holdings are given a County Parish Holding (CPH) identifier. Livestock movements between holdings have to be reported, and there is a standstill period during which further animal movements are not allowed off a landholding where movements have occurred. Recent changes have been made to movement regulations and can be found [here](#). In brief, these changes mean that separate parcels of land grazed by one registered livestock keeper that are within a 10 mile radius of the “place of business” of the holding (usually a correspondence address or animal gathering point) can now be considered as part of that holding. This means that it is not necessary to report livestock movements between the parcels, and such movements will not trigger the standstill rules. This makes grazing a numbers of separate sites much more feasible for a grazier. However, if the grazier has an existing business that does not fall with the 10 miles radius, movement regulations would apply on any livestock movements between their existing separate County Parish Holding (CPH) and the new Cannock Chase CPH, which may be a constraint.
- 4.3 The Government's bTB strategy means that England is divided into three [“risk areas”](#) Cannock Chase currently falls within the High Risk Area. This has implications for herd management with requirements for annual testing and pre- and post-movement testing between holdings (see [guidance](#)). It makes movement of animals more difficult, and means that graziers from a lower risk area are less likely to be interested in grazing Cannock Chase as tests are not infallible (and bTB has been found in cattle that have had repeated negative results (but note that all of Staffordshire, Shropshire, West Midlands and part of Derbyshire fall within the High Risk Area)).

## Cannock Chase management options

- 4.4 Should bTB be found in a herd (referred to as a herd "breakdown"), movement restrictions are enforced (60 days "shutdown", extended if needed), any reactor animals slaughtered, and additional skin testing is required in neighbouring farms (within 3 km). If the infection is deemed severe, the entire herd may be slaughtered. The regulations are complex and more information can initially be found [here](#)). Concerns about bTB mean that neighbouring farmers may be worried about cattle being introduced at Cannock Chase. We recommend that any neighbouring famers with cattle are included in consultations (Map 5 shows a 3km buffer from the site boundaries).
- 4.5 Other disease could be an issue in the future. For example, an outbreak of Foot and Mouth would result in movement restrictions that may prevent animals from being removed from the holding for the duration of the outbreak (with the risk of heathland areas becoming overgrazed or contaminated by supplementary feed brought in to feed animals). Back-up land within the holding is recommended.

Map 4: 3km buffer around potential grazing area



## Burning

- 4.6 The risks and constraints of burning on Cannock Chase are summarised in Table 8. The main issues are public perception, staffing and fire management systems, and the potential for damage to archaeological features.

## Funding

- 4.7 All options will require significant financial input. The site is currently within HLS, and it may be that a component (e.g. the fencing for the possible trial scheme at Moors Gorse and Furnace Coppice field) could be funded through the capital additions pot. This would provide evidence for the feasibility of the remainder of the scheme, which could then form part of the next Countryside Stewardship application (which would need to be developed in 2018). Note that Countryside Stewardship would probably not be able to cover access infrastructure or cattle grids. An alternative would be to seek a grant from a charitable funder such as the Esmée Fairburn Foundation.
- 4.8 The funding required (e.g. capital works or ongoing) will partly depend upon the model used. For example, the land could be leased under a Farm Business Tenancy, and rent charged<sup>4</sup>. The tenant should be able to obtain Basic Payment<sup>5</sup> and HLS payments (including on any FC land incorporated into the scheme), depending on the habitat. As discussed, it may be difficult to find a tenant. In some cases where land is difficult to graze, it is necessary to provide payments to graziers. For example, [Flexi-graze](#), a non-profit making community interest company based in the north-east England, provides a conservation grazing service and charges £1 per livestock unit (plus a membership fee) but does not take Basic Payment/HLS. The Morecombe Bay Grazing Company has a slightly different approach, and does not take or make payment, but receives the HLS payments on land grazed. Stock ownership also has a bearing on funding - in some cases, the landowning/managing organisation may initially purchase the livestock which are then managed by the grazier (an approach used in the past by NT with North Devon cattle on Hartland Moor in Dorset and English Nature (now Natural England) with Blue-Greys on Ingleborough in North Yorkshire, for example).

## Legal considerations

- 4.9 There are a number of legal requirements that need to be met in grazing common land. This includes the need to apply to PINS for consent to carry out [works on common land](#), and the legal requirements of the registered owner/keep of the livestock to ensure the [welfare](#) of the stock and abide by regulations concerning [registration of the livestock and holding, livestock movements](#) and [disease](#). There is no reason that these legal requirements should impact on the feasibility of a

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<sup>4</sup> If a Farm Business Tenancy is used, care should be taken to avoid including specific grazing requirements within this, so that agri-environment payments can be made for these.

<sup>5</sup> Note that SCC does not have any BPS entitlements, however.

## Cannock Chase management options

grazing scheme, although movement requirements in particular can make for complications (see sections 4.2 and 4.3).

**Table 7: Risk and constraints of grazing options on Cannock Chase**

Options	Risks/constraints	Potential solutions
<b>Fencing</b>		
All options	Failure of conventional fencing (e.g. through vandalism)	Thorough consultation to ensure all access points etc. are provided for Public liaison work to explain grazing and get support Public involvement in monitoring and reporting issues
All options (excluding Brindley Heath)	Failure of invisible fencing	Ensure adequate trial is carried out e.g. at Moor Gorse/Furnace Coppice Field.  Ensure power supply vandal proof (e.g. in sunken locked box)
<b>Funding</b>		
All options	Changes to CAP and agri-environment schemes post Brexit	Stay informed and look into other income streams such as branded produce.
All options	Currently unclear as to whether invisible fencing will be funded under HLS/CS	Stay informed (e.g. NE, Invisiblers discussion forum); seek alternative funding
Using a conservation grazier/grazing service	Would probably need to pay, or to pass over any rural grants and payments	Budget accordingly
All options if FC land incorporated	FC not eligible for rural grants and payments	Create a 5-10 year management agreement between FC, SCC and grazier to enable rural grants and payments by grazier
Using tenant farmer or conservation grazier		Ensure specific grazing requirements are not part of any Farm Business Tenancy entered into, as this could potentially preclude HLS (awarded for work over and above that already expected)
<b>Husbandry &amp; welfare</b>		
All options (but potentially a particular issue if more than one land parcel is grazed as part of the same CPH)	Disease	Risk of not being able to move livestock off the site if there is a disease outbreak. If more than one land parcel is grazed, movement restrictions will apply to all if in same CPH

## Cannock Chase management options

Options	Risks/constraints	Potential solutions
Option 1 & 2	Locating livestock	Difficulties locating animals could be solved by (a) using GPS tags (which would be advisable in any case if invisible fencing is used) (b) bucket/vehicle training them
<b>Liability</b>		
All	Liability for damage caused by stock straying onto highway <sup>6</sup>	Use conventional fencing along and near roads and check regularly. Ensure farm gates are locked and suitable pedestrian/equestrian gates provided and maintained (see <a href="#">recent review</a> of bridlegates)
<b>Logistics</b>		
All	Difficulty finding grazier to take site on	May need to pay grazier or use conservation grazing service
<b>Other</b>		
All, particularly Options 1 & 2	Spread of Phytophthora via livestock	Reinstate <i>Phytophthora</i> monitoring and relate to livestock movements (obtained from records and GPS data) Graze Brocton Coppice as a separate unit

**Table 8: Risk and constraints of burning on Cannock Chase**

Risks/constraints	Solutions
<b>Public perceptions</b>	
Public hostility to burning as a management technique	Carry out well advertised demonstration burns and allow the benefits to show (e.g. regeneration) before instituting a regular programme of annual controlled burns
<b>Logistics</b>	
Weather conditions unsuitable for controlled burning	Controlled burns will not be possible every year
Lack of experienced staff or contractors to carry out burning	Training courses and assisting on other sites
Risk of wild fires pre-empting burning programme with large areas burnt at one time	Advertising risk of fire during dry periods, encouraging the public to report fires, fire watches and close liaison with Fire Services

<sup>6</sup> Animals Act 1971 states that where damage is caused by animals straying from unfenced land to a highway a person who placed them on the land shall not be regarded as having committed a breach of the duty to take care by reason only of placing them there if the land is common land. However this is still clearly a moral obligation.

## Cannock Chase management options

Risks/constraints	Solutions
Ineffective fire breaks and fire access provisions including water supplies	An adequate system of fire breaks and access routes including mains water hydrants in vulnerable areas or fire ponds.
<b>Damage</b>	
Risk of controlled burn becoming a wild fire	Training on precautions to take and assessing weather and vegetation condition to avoid when burning. Close liaison with Fire Services. A completed and adequate Fire Plan.
Burning into other vegetation types can encourage colonisation by species such as bracken and bramble	Careful survey and assessment of areas to be burnt
Soil erosion from burning on steep slopes	Avoid burns on or near steep slopes
Burning can damage archaeological features	Consult County Archaeologist on burning proposals
Burning can damage phone and electricity lines	Keep burn sites well away from overground services
Smoke from burns can affect housing and roads	Precautions should be taken to avoid carrying out burns under conditions where smoke can blow towards housing or across roads
Potential impacts on invertebrates and herpetofauna.	Ensure only small areas burned relative to size of site

**Table 9: Risk and constraints of chemical management on Cannock Chase**

Risks/constraints	Solutions
<b>Public perceptions</b>	
Public hostility to the use of chemicals	Education and information programme. Minimal use of chemicals where problem is intractable and no alternative solutions available
Chemicals contaminate visitors or pets	Signage both before, during and after treatment to warn public to stay out of defined areas backed by wardening during and immediately after spraying operation
<b>H&amp;S, environment</b>	
Chemical contamination of spraying operatives or assistants	Follow recommendations of manufacturers and regulations for protective clothing, safe application methods etc.
Effects on non-target species	Use of specific herbicides and targeted treatment to avoid non-target species
Run off into watercourses	Consult Environment Agency and keep all spraying away from watercourses, do not spray

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Risks/constraints	Solutions
	upwind or during strong winds or use weed wiper
Spray drift into houses/gardens	Keep all spraying away from housing, do not spray upwind or during strong winds or use weed wiper
<b>Damage &amp; disturbance</b>	
Damage to archaeological sites	Consult County Archaeologist and avoid using machinery on sensitive sites where hand held sprayers can be used
Damage from machinery to associated heathland vegetation	Use ATV rather than tractor or hand held sprayers
Disturbance to ground-nesting birds	Carry out checks of proposed management sites before treatment and amend treatment areas if required; spray in August to avoid main nesting season
Soil erosion can follow removal of bracken	Avoid treatments on steep slopes or carry out small scale spraying on plots across slope
Slow heather regeneration following bracken spraying	Break up dead litter by swiping or light cultivation
Damage to non-target plant species	Follow-up spraying of bramble should be completed as soon as regrowth is sufficient for spray to be effective and a botanical survey has confirmed that potential damage to non-target species is acceptable
<b>Future use of glyphosates</b>	
Regulators may reconsider the safety evaluation of glyphosate-based herbicides based on recent results of the health impacts of environmentally relevant levels	Alternatives need to be sought, and reliance on chemical solutions reduced.

**Table 10: Risk and constraints of mechanical management on Cannock Chase**

Risks/constraints	Solutions
<b>Public</b>	
Public hostility to tree felling	Carry out education/information programme to explain necessity for tree management on heathland
Removal of trees can affect views and landscapes	Assess effects of removal before planning work
<b>Damage/disturbance</b>	

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Risks/constraints	Solutions
Tree and scrub removal can affect breeding birds	Carry out all work during winter months
Tree and scrub removal can affect hibernating reptiles and bats	Where essential, carry out work in spring after reptiles have emerged and a breeding bird survey has been undertaken. Consult local bat group on timing of felling Carry out an assessment of potential hibernation sites and avoid these during winter clearance
Tree and scrub removal can affect surface archaeological and cultural features	Consult County Archaeologist and carry out assessment for sensitive features before work starts. Carry out work with minimal disturbance of ground surface
Disturbance to ground nesting birds during bracken cutting	Carry out surveys of proposed management sites before treatment and amend treatment areas if required
Mechanical treatment involving heavy machinery can cause ground erosion or compaction and damage to vegetation	Where management involves the use of heavy machinery, mark out access routes, avoid working or travelling on wet ground or steep slopes, use wide tracked/tyred vehicles and minimise number of passes
Damage to footpaths and bridleways by machinery	Minimise access on paths and bridleways and repair after use
Damage from machinery to associated heathland vegetation	Minimise ground pressure by using wide tracked/tyred vehicles and minimise number of passes
<b>Efficacy</b>	
Following tree felling or scrub clearance there can be a dense regrowth of tree seedlings leading to criticism of the original felling	Prior to tree felling or scrub clearance put in place plans for subsequent removal or treatment of regeneration regrowth

## Assessment of options against critical success factors

- 4.10 To consider the likely success of the three options, they have been evaluated against the critical success factors listed in section 1.3. This is shown in Table 11. Each option has been given a score between 1 and 5, where 1 indicates that success is very unlikely, 3 that success is quite likely, and 5 that success is potentially very likely. In scoring, we have assumed that the required or recommended procedures are followed in each case.

### *Legally compliant*

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- 4.11 All options should be legally compliant if carried out in the appropriate manner following the relevant protocols and legislation.

### *Getting/maintaining habitats in favourable condition*

- 4.12 All options involve grazing the same area, and therefore should all contribute to getting/maintaining favourable condition across the site. Option 1 would result in the most naturalistic grazing scheme, while Option 3 would offer the most control in terms of where grazing pressure is focussed. More extensive grazing over the larger area would potentially lead to the greatest diversity of impacts, providing a wider range of niches for other species. However, until the behaviour of the livestock across the site is known, there is a considerable degree of uncertainty. Grazing smaller areas could result in more homogeneity within each unit, but would offer more certainty about the spatial distribution and intensity of impacts.

### *Support to key species*

- 4.13 See favourable condition above. There is little evidence available to inform an assessment of the impacts of the different options directly on key species. The assessment therefore has to be made in terms of habitat changes. This is likely to be positive overall, although each option does have the potential to damage individuals (see risks and constraints tables above). The scoring assumes that appropriate survey work is carried out to identify any issues and that appropriate action is taken.
- 4.14 Grazing is less predictable than other management techniques (although it has a less sudden impact). Until it is known how livestock use the site, it is hard to predict the extent to which other management techniques would be needed under each option.

### *Habitat connectivity*

- 4.15 A combination of management types is needed to increase habitat connectivity, e.g. tree clearance, followed by grazing and probably bracken and bramble control. All options therefore offer the potential to increase connectivity between different heathland blocks. Option 1 and 2 offer greater scope than Option 3 for livestock to move plant (and fungi) propagules between patches. There is also the opportunity to connect to heathland areas outside of the Country Park; there is no functional difference between options in this regard. However, neighbouring land managers should be consulted on their preferences to ensure increased connectivity is not jeopardised.

### *Fit in the landscape and protect tranquillity*

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- 4.16 Grazing will fit into the landscape and protect tranquillity provided intrusive internal fencing is avoided. There should be little if any difference between the three options if invisible fencing is used within the site. Mechanical and chemical management are intrusive during the period in which they are being carried out, but as mentioned above it is not known how the extent and frequency of these management types might differ between the three options.

### *Protect historic environment features*

- 4.17 Burning, mechanical and chemical management should not harm historic environment features provided expert advice is sought on where management can safely be carried out (although there is the risk of unidentified features being damaged). Again, it is not known how the extent and frequency of these management types may differ between the three options.
- 4.18 Although the impact of grazing might be expected to be lower than other management types, it is hard to predict as it is not known where animals may choose to congregate, thus concentrating their impact. Option 3 offers the greatest amount of control, making it possible to exclude livestock from particular areas.
- 4.19 Options 2 and 3 could be more damaging during the installation phase, but it is assumed that adequate care would be taken to safeguard historic features.

### *Keep sites welcoming & accessible for recreational activities*

- 4.20 The use of conventional fencing may be perceived as unwelcoming and likely to reduce access (although every effort should be made to ensure there are gateways on all existing paths, whether these are Public Rights of Way or not). The amount of conventional fencing is the same for all options.
- 4.21 Some visitors may be wary of livestock and will prefer to use parts of the site where livestock are not present. Although under Option 1 there will be areas of the site free from grazing animals (because the animals will not be uniformly dispersed across the landscape), it will not be possible for visitors to predict where they will be at any given time. For some visitors, Option 1 may therefore be significantly less welcoming than Options 2 and 3, under which livestock can be confined to particular areas and information provided to visitors about where they can be found.

### *Affordable & sustainable*

- 4.22 Mechanical, chemical and burning management are less environmentally sustainable than grazing – the first two involve the use of fossil fuels, and chemical management evidently involves the use of chemicals. Recent research into the impacts of a glyphosate-based herbicide (commonly used in nature conservation)

## Cannock Chase management options

has revealed a potential for harmful effects on that were not previously recognised; a situation that may be repeated with other chemicals. Burning releases CO<sub>2</sub> into the atmosphere. All require funding and offer no return (unless a market can be found for arisings such as woodchip or heather bales, but this can be difficult). Grazing, although requiring substantial initial funding, should be more economically sustainable than other management tools, although there is uncertainty surrounding future agri-environment funding. Extensive, low-intensity cattle grazing is more environmentally sustainable than other management types, and can also play a role in re-connecting to the site to the local community. However, it is not possible to predict how the extent and frequency of other management types will vary between the options.

- 4.23 Options 3 would be the most expensive to set up, due to the additional infrastructure required (£30,000 more than option 1), followed by Option 2 (£16,770 more than Option 1).
- 4.24 One issue relevant to sustainability is the opinion of potential graziers, who may find one option more manageable. Effort should be made to approach potential graziers before any decision is finalised. However, as invisible fencing does not require consent from PINS, it would be possible to add internal fencing at a later date.

### *Practical & deliverable*

- 4.25 All options require conventional fencing on common land, and whether this proves to be deliverable will depend upon the outcome of public consultations and a subsequent application to the planning inspectorate. This does not differ between options. What does differ is the amount of invisible fencing used. Invisible fencing is suitable for use by adult cattle checked daily and away from busy roads and therefore should be suitable within the site and along the eastern boundary, however, initial discussion with invisible fencing providers is strongly recommended as a next step before the options are pursued further.

### *Acceptable to the majority of stakeholders*

- 4.26 Differences in acceptability to stakeholders need to be determined during the next consultation.

## Cannock Chase management options

**Table 11: Appraisal of options against critical success factors. 1 indicates that success is very unlikely, 3 that success is quite likely, and 5 that success is potentially very likely.**

	Option 1	Option 2	Option 3
Legally compliant	5	5	5
Getting/maintaining habitats in favourable condition	5	4	3
Reconnect habitat blocks	4	4	3
Support the needs of key species	4	5	4
Fit in the landscape and protect tranquillity	4	4	4
Protect historic environment features	3	4	3
Keep sites welcoming & accessible for recreational activities	2	3	4
Affordable & sustainable	4	3	2
Practical & deliverable	4	4	3
Acceptable to the majority of stakeholders	?	?	?
<b>TOTAL</b>	<b>35</b>	<b>36</b>	<b>31</b>

4.27 The difference between scores is small, and the scoring is subjective. In the light of our experience, and taking into account the success criteria scoring, we would suggest that Option 2 is preferable. It would allow some areas to remain ungrazed at any one time, while creating large enough areas for more naturalistic grazing. Additional grazing compartments could be added later using invisible fencing if required.

## 5. Conclusions

- 5.1 There are a number of feasible options for grazing areas of Cannock Chase Country Park with free-ranging cattle contained by a combination of permanent cattle fencing and invisible fencing. This should help maintain the site in favourable condition, both through direct impacts, and through interactions with other management techniques such as mechanical management and a more limited amount of burning and chemical management.
- 5.2 The next step will be a consultation on the options outlined in this report. Following this second consultation, and in the light of the results, Staffordshire County Council will need to decide which options they wish to take forward. If these include fencing and grazing, as all the options will need roadside fencing, an application will need to be made to the Planning Inspectorate for structures on the common. Any such application will need to be advertised and made available for public inspection and the public will have a further opportunity to make their views known to the Planning Inspector charged with making the decision on the application.

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